

8. Landscape and Visual Effects

This chapter provides an assessment of likely landscape and visual impacts because of the introduction of the Proposed Scheme. The approach to the assessment has been informed by relevant guidance including DMRB and Guidelines for Landscape and Visual Impact Assessment 3rd Edition (GLVIA) and local policy. This Stage 3 assessment also takes account of the findings from the preceding Scoping, Stage 1 and Stage 2 reports.

A study area of 1km from the Proposed Scheme was established through desk and field-based study and analysis. A series of four designated landscapes and five Landscape Character Areas (LCAs) have been identified for inclusion in the assessment. These include: Dalkeith Palace Garden and Designed Landscape (GDL), the Drum GDL, The Drum Special Landscape Area (SLA), North Esk Valley SLA, Danderhall Settled Farmland LCA, Melville Nurseries LCA, Dalkeith Palace LCA, Burdiehouse Farmland LCA, and Drum Estate LCA.

A series of ten representative viewpoints (VP) were identified within the study area and form the basis for the visual assessment. Visual receptors include a number of scattered residential properties at Old Sheriffhall, Summerside, Campend, Sheriffhall Mains and Millerhill, several Core Paths and Public Rights of Way, the A720, A6106, A7 and A772 road corridors and the Borders Railway.

An assessment of potential effects was made for several stages of development including Construction and winter of the first year of operation (Operation Year 1), to take account of the predicted effects before secondary mitigation measures had been applied. In addition, an assessment of residual effects at summer of year 15 of operation has also been undertaken in order to demonstrate the influence of secondary mitigation measures.

The potential effects of construction activity on landscape and visual receptors would result from: the movement of construction machinery and vehicles within the Proposed Scheme extents; the introduction of temporary compounds and structures, lighting and storage of materials; traffic management and temporary signage; and removal of vegetation. At operation potential effects would result from: loss of vegetation; introduction of new structures and altered road alignments; increased height of the A720 and associated traffic; introduction of Sustainable Drainage Systems (SuDS) basins; change to lighting; and introduction of fencing and other ancillary elements.

The assessment of effects on landscape receptors concludes that all of the LCAs and Landscape Designations would receive slight adverse or neutral effects during both construction and at Operation (Year 1). Potential visual effects during construction and operation (Year 1) would also be slight adverse or neutral for the majority of visual receptors. However, moderate adverse effects are anticipated at VP1 – Sheriffhall Mains, and large adverse effects are anticipated at VP3 – Summerside and VP4 – Old Sheriffhall during construction and operation (Year 1).

In order to help reduce potential effects a series of mitigation measures have been identified. These include both embedded and secondary measures which have been developed as part of an iterative design process. Embedded mitigation measures include: minimising land take and loss of existing landscape features and vegetation; use of variable gradients and smoothing of slope transitions of embankments; sympathetic design of SuDS to minimise effects and provide habitat enhancement; and minimise the extent of street lighting. Secondary measures include: native planting along road embankments to provide screening, improve landscape fit and compensate for loss of existing vegetation; hedgerow planting and stone walls to reinforce existing landscape features and patterns; and minimising visual clutter from ancillary elements such as barriers, lighting and signage.

The establishment of proposed planting and other secondary mitigation measures would help to reduce both long term landscape and visual effects. The assessment identified that potential residual landscape effects at year 15 of operation would be neutral for the majority of the identified landscape receptors, except for the Danderhall Settled Farmland LCA which would experience slight adverse effects. Potential residual effects on most of the identified visual receptors would be slight adverse or neutral at operation (Year 15). The exception to this would be VP3 – Summerside where residual effects are anticipated to be large adverse.

8.1. Introduction

- 8.1.1 This chapter provides a Design Manual for Roads and Bridges (DMRB) Stage 3 level assessment of potential landscape and visual impacts resulting from the proposed upgrading of the A720 Sheriffhall Roundabout (hereafter referred to as 'the Proposed Scheme').
- 8.1.2 The assessments describe and evaluate the landscape resource and visual amenity of the study area, report on the proposed change and make informed predictions of the likely impacts. The assessment process also involves consideration of opportunities to mitigate potential adverse landscape and visual effects.

- 8.1.3 This chapter should be read in conjunction with Chapter 5 - The Proposed Scheme and Chapter 6 - Overview of Assessment Process. In addition, impacts on landscape and visual amenity are often interrelated with impacts on cultural heritage, and therefore reference should also be made to Chapter 10 - Cultural Heritage.
- 8.1.4 This chapter of the ES has been prepared by competent experts with relevant and appropriate experience. The technical lead for the Landscape and Visual assessment has 14 years of relevant work experience and is a Chartered Member of the Landscape Institute (CMLI). Further details are provided in Appendix 1.2 – Table of Expert Competencies.

8.2. Approach and Methodology

- 8.2.1 The landscape and visual assessments have been undertaken in accordance with the Guidelines for Landscape and Visual Impact Assessment (GLVIA) (Landscape Institute and Institute of Environmental Assessment and Management, 2013) and with reference to guidance provided by DMRB LA 104 'Environmental Assessment and Monitoring' (Highways England, et al., 2019) and DMRB LA 107 'Landscape and Visual Effects' (Highways England, et al., 2019)..
- 8.2.2 As recommended in GLVIA and DMRB LA 107, the assessments of landscape character and visual amenity, although closely related, are undertaken separately. A brief description of landscape and visual impacts is provided below:
- Landscape character impacts can be a result of physical change to the landscape or can relate to changes which influence how the landscape and its character are perceived.
 - Visual impacts are a consequence of a change in the view as a result of removal of existing features, or introduction of new features.
- 8.2.3 GLVIA places a strong emphasis on the importance of professional judgement in identifying and defining the significance of landscape impacts. This Landscape and Visual Impact Assessment (LVIA) has been undertaken by Chartered Landscape Architects and professional judgement has been used in combination with structured methods and criteria to evaluate value, susceptibility, sensitivity, magnitude and significance of effect.
- 8.2.4 In accordance with DMRB LA 107 separate assessment were undertaken for the following scenarios:
- During the construction period, assuming a maximum visibility of maximum perceived change situation (i.e. construction at its peak) and taking account of the duration of the approximately 28-month construction period;
 - Winter in the first year (Operation Year 1) of operation including any embedded mitigation measures which represents the worst-case situation before any planted mitigation measures can be expected to take effect; and
 - Summer of year 15 (Operation Year 15) taking into account the completed scheme (including embedded mitigation) where any planted mitigation measures are expected to have been established.

Study Area

- 8.2.5 A study area of 1km from the Proposed Scheme has been identified for the landscape and visual assessments, as shown on Figure 8.1 'Landscape Designations'. The extent of the study area has been defined through a review of maps and aerial photographs, in conjunction with on-site appraisal. The 1km extent allows for an overview of the local landscape and visual context to be achieved and covers all receptors considered to have the potential to be significantly affected by the Proposed Scheme.

Baseline Conditions

- 8.2.6 A baseline study has been undertaken through a combination of desk-based research and on-site appraisal in order to establish the existing conditions of the landscape and visual resources of the study area. The landscape baseline

study identifies landscape designations and distinct landscape types within the study area and helps define their key characteristics. The visual baseline aids in the identification of potential visual receptor locations and provides a description of the nature of the existing views.

Impact Assessment

8.2.7 This section sets out the approach and methodology used for the landscape and visual assessments. It builds on the general assessment methodology presented in Chapter 6 - Overview of Assessment Process, taking account of best practice guidance set out in GLVIA and DMRB LA 107. The assessments seek to identify the level and significance of effects based on an evaluation of the sensitivity to change and the magnitude of impact for each landscape and visual receptor. As highlighted above, landscape and visual assessments are undertaken separately, and therefore the following sections first provide details of the methodology for the landscape character assessment, followed by details of the visual assessment.

Landscape Character

Landscape Sensitivity

8.2.8 The evaluation of landscape sensitivity to change involves consideration of the nature of the landscape and its ability to accommodate change without compromising its key elements or characteristics. Sensitivity to change has been defined through appraisal of landscape value, undertaken as part of the baseline study, and the susceptibility of the landscape to change.

8.2.9 Landscape value is frequently addressed by reference to international, national, regional and local designations, determined by statutory bodies and planning authorities. However, the absence of such a designation does not necessarily imply a lack of quality or value. A range of other factors are considered in determining landscape value which can render areas of nationally unremarkable quality, highly valuable as a local resource. These attributes include:

- Condition;
- Scenic quality;
- Scarcity, rarity and representativeness;
- Conservation interest or cultural and historic associations;
- Recreational value; and
- Perceptual aspects.

8.2.10 The evaluation of landscape value has been undertaken with reference to a four-point scale, as outlined in Table 8-1 'Landscape Value Criteria', below.

Table 8-1 Landscape Value Criteria

Classification	Criteria
Very high	The landscape is likely to be valued for a number of its attributes at an international or national level and protected by a statutory landscape designation, e.g. World Heritage Site or National Park. The landscape is intact and contains elements/features which are very rare or very representative of international or national attributes and cultural associations.
High	The landscape is likely to be valued for one or more of its attributes at a national or regional level and may be protected by a landscape designation, e.g. Garden and Designed Landscape. The landscape is largely intact and may contain elements/features which are rare or perceived as representative of the national or regional attributes and cultural associations.

Classification	Criteria
	The landscape may provide a high scenic and landscape quality as well as many recreational opportunities.
Medium	The landscape is likely to be valued for one or more of its attributes at a community or local level and may be covered by a landscape policy designation, e.g. Special Landscape Area. The landscape may contain elements/features which are representative of the community or local level attributes and cultural associations. The landscape may provide some scenic and landscape quality and some recreational opportunities.
Low	The landscape is likely to be valued at a limited level only and not covered by any landscape designations. The landscape may contain features which are common and therefore do not specifically contribute to the wider landscape or cultural association. The landscape may provide a limited scenic and landscape quality and few recreational opportunities.

8.2.11 Landscape susceptibility to change is a measure of the ability of a landscape to 'accommodate the proposed development without undue consequences for the maintenance of the baseline situation and/or the achievement of landscape planning policies and strategies' (GLVIA, para 5.40).

8.2.12 Landscape susceptibility has been appraised through consideration of the baseline characteristics of the landscape, and, the scale or complexity of a given landscape. The evaluation of landscape susceptibility has been undertaken with reference to a three-point scale, as outlined in Table 8-2 'Landscape Susceptibility Criteria'

Table 8-2 Landscape Susceptibility Criteria

Classification	Criteria
High	The receptor has a low capacity to accommodate the Proposed Scheme without fundamentally altering key characteristics or its overall integrity. There is unlikely to be any existing context of similar development to the type proposed within this landscape.
Medium	The receptor has some capacity to accommodate the Proposed Scheme without fundamentally altering key characteristics or its overall integrity. There may be some existing context of similar development to the type proposed within this landscape.
Low	The receptor is tolerant of change and has capacity to accommodate the Proposed Scheme without fundamentally altering key characteristics or its overall integrity. There is likely to be an existing context of similar development to the type proposed within this landscape.

8.2.13 below.

Table 8-2 Landscape Susceptibility Criteria

Classification	Criteria
High	The receptor has a low capacity to accommodate the Proposed Scheme without fundamentally altering key characteristics or its overall integrity. There is unlikely to be any existing context of similar development to the type proposed within this landscape.
Medium	The receptor has some capacity to accommodate the Proposed Scheme without fundamentally altering key characteristics or its overall integrity. There may be some existing context of similar development to the type proposed within this landscape.
Low	The receptor is tolerant of change and has capacity to accommodate the Proposed Scheme without fundamentally altering key characteristics or its overall integrity. There is likely to be an existing context of similar development to the type proposed within this landscape.

8.2.14 Landscape sensitivity to change has been determined by employing professional judgement to combine and analyse the identified value and susceptibility and with reference to the four-point scale set out in Table 8-3 'Landscape Sensitivity Criteria', below.

Table 8-3 Landscape Sensitivity Criteria

Classification	Criteria
Very high	Landscapes of high international or national importance with rare and very distinctive elements and characteristics, very highly susceptible to any change of the type of scheme proposed.

Classification	Criteria
High	Landscape of national or regional value with distinctive elements and characteristics, of high or medium susceptibility to changes of the type of scheme proposed.
Medium	Landscape of local or community value, with mostly common elements and characteristics, which by nature of their character would have some capacity to accommodate change of the type proposed.
Low	Landscape of limited value and relatively inconsequential elements and characteristics, the nature of which is potentially tolerant of extensive change of the type proposed.

Magnitude of Landscape Impacts

8.2.15 Magnitude of landscape impact refers to the extent to which the Proposed Scheme would alter the existing characteristics of the landscape. It is an expression of the size or scale of change to the landscape, the geographical extent of the area influenced and its duration and reversibility. The variables involved are described below:

- The extent of existing landscape elements that would be lost, the proportion of the total extent that this represents and the contribution of that element to the character of the landscape;
- The extent to which aesthetic or perceptual aspects of the landscape are altered either by removal of existing components of the landscape or by addition of new ones;
- Whether the change alters the key characteristics of the landscape, which are integral to its distinctive character;
- The geographic area over which the change will be felt (within the application boundary itself, the immediate setting, at the scale of the landscape character area, on a larger scale influencing several landscape character areas); and,
- The duration of the change (short term (up to 3 years), medium term (3 to 10 years) or long term (greater than 10 years)) and its reversibility (whether it is permanent, temporary or partially reversible).

8.2.16 Magnitude of landscape impact has been evaluated with reference to the four-point scale and criteria outlined in Table 8-4 'Landscape Magnitude Criteria', below, combined with judgement on the likely duration and reversibility of change. As a general rule, long term and permanent change is likely to indicate a higher magnitude of impact than temporary or short-term change.

Table 8-4 Landscape Magnitude Criteria

Classification	Description
Major	The Proposed Scheme would result in considerable change over an extensive area, altering the key characteristics and the overall experience of the landscape.
Moderate	The Proposed Scheme would result in noticeable change over a large area, or more intensive change over a limited area, altering some key characteristics and/or the experience of the landscape.
Minor	The Proposed Scheme would result in a small change over a limited area affecting few characteristics, resulting in little or no change to the overall character.
Negligible or No Change	The Proposed Scheme would result in barely perceptible or not discernible change to the landscape character.

Significance of Landscape Effect

8.2.17 Determination of the significance of landscape effects has been undertaken by employing professional judgement and experience to combine and analyse the identified classification of the landscape magnitude of impact with the identified sensitivity of the receptor. Sensitivity to change is evaluated as a combination of the identified value and susceptibility of the landscape receptor. The assessment takes account of direct and indirect change on existing landscape elements, features and key characteristics and evaluates the extent to which these would be lost or modified, in the context of their importance in determining the existing baseline character. Reference is also made to the significance matrix set out in DMRB LA 104.

- 8.2.18 The significance of landscape effects is described with reference to the five-point scale set out in Table 8-5 'Significance of Landscape Effect', below.

Table 8-5 Significance of Landscape Effect

Classification	Description
Very Large	Considerable change over an extensive area of a very high landscape sensitivity, fundamentally affecting the key characteristics and the overall impression of its character.
Large	Noticeable change to a highly sensitive landscape or more intensive and widespread change to a less sensitive landscape, affecting some key characteristics and the overall impression of its character.
Moderate	Noticeable change to a limited area of a moderately sensitive landscape or a more widespread area of a less sensitive landscape, which is likely to affect few key characteristics and may alter the overall impression of its character.
Slight	Noticeable or small change to a limited area of a less sensitive landscape, affecting few characteristics and not altering the overall impression of its character.
Neutral	No discernible change to characteristics or the impression of the landscape.

- 8.2.19 For the purpose of this assessment effects of moderate or greater are considered to be significant.

Visual Amenity

Visual Sensitivity

- 8.2.20 Sensitivity of visual receptors has been defined through appraisal of the viewing expectation, or value placed on the view as identified in the baseline study, and its susceptibility to change.
- 8.2.21 Value of the view is an appraisal of the value attached to views and is often informed by the appearance on Ordnance Survey or tourist maps and in guidebooks, literature or art. Value can also be indicated by the provision of parking or services and signage and interpretation. The nature and composition of the view is also an indicator. Value of the view has been determined with reference to the four-point scale and criteria outlined in Table 8-6 'Value of the View Criteria', below.

Table 8-6 Value of the View Criteria

Classification	Criteria
Very high	The view is likely to be recognised as of the highest quality with no detracting elements. The view is likely to be widely known and promoted as an iconic beauty spot/visitor destination at a national or international level. It is likely to have strong cultural associations (recognised in art, literature or other media) or be recognised as a key view from or of an international or national designated landscape.
High	The view is likely to be recognised as of high quality with very few, if any, detracting elements. The view is likely to be well known and/or promoted as a beauty spot/visitor destination at a national or regional level. It may also have strong cultural associations or be recognised as a special quality or key feature of a designated landscape.
Medium	The view is likely to be recognised at a community or local level, or unrecognised but pleasing and well composed with few detracting elements. The view may be promoted locally or have some local cultural associations, but otherwise not well known or frequented. It may be located within a designated landscape but is unlikely to be recognised as a special quality or key feature.
Low	The view is likely to be unrecognised, typical of the area and/or poorly composed with numerous detracting elements. The view is unlikely to be promoted at any level, have any known cultural associations or be located within a designated landscape.

- 8.2.22 Visual susceptibility relates to the importance of views to receptors at a certain location and is informed by the type of receptor and the activity with which they are engaged. This considers the extent to which receptors' attention or interest is focused on the view or visual amenity. For example, visitors at major attractions where views are an

important part of the experience, residents in their home, or walkers whose interest may tend to be focused on the landscape or a particular view may indicate a higher level of susceptibility. Whereas, receptors occupied in outdoor sport where views are not important or at their place of work could be considered less susceptible to change. Visual susceptibility has been determined with reference to the three-point scale and criteria outlined in the Table 8-7 'Visual Susceptibility Criteria', below.

Table 8-7 Visual Susceptibility Criteria

Classification	Criteria
High	Locations where the view is of primary importance and receptors are likely to notice even minor change.
Medium	Locations where the view is important but not necessarily the primary focus and receptors are tolerant of some change.
Low	Locations where the view is incidental or unimportant to receptors and tolerant of a high degree of change.

8.2.23 Visual sensitivity to change has been determined by employing professional judgement to combine and analyse the identified value and susceptibility and has been defined with reference to Table 8-8 'Visual Sensitivity Criteria', below.

Table 8-8 Visual Sensitivity Criteria

Classification	Criteria
Very high	Locations where receptors experience a very highly valued, iconic view with no detracting features and where even minor change would be readily apparent.
High	Locations where receptors experience a highly valued, impressive or well composed view, with very few, if any, detracting features and where change is likely to be noticed.
Medium	Locations where receptors experience a valued view which generally represents a pleasing composition but may include some detracting features and is tolerant of a degree of change.
Low	Locations where the view is incidental or not important to the receptors and the nature of the view is of limited value or poorly composed with numerous detracting features and is tolerant of a large degree of change.

Magnitude of Visual Impacts

8.2.24 Magnitude of visual impact relates to the extent to which the Proposed Scheme would alter the existing view and is an expression of the size or scale of change in the view, the geographical extent of the area influenced and its duration and reversibility. The variables involved are described below:

- The scale of the change in the view with respect to the loss or addition of features, changes in composition, and the proportion of the view occupied by the Proposed Scheme;
- The degree of contrast or integration of any new features or changes in the form, scale, composition and focus of the view;
- The angle of view in relation to the main activity of the receptor and the distance from the Proposed Scheme;
- The amount of time over which it will be experienced and whether views will be full, partial or glimpsed; and
- The duration of the change (short term (up to 3 years), medium term (3 to 10 years) or long term (greater than 10 years)) and its reversibility (whether it is permanent, temporary or partially reversible).

8.2.25 Magnitude of visual impact has been evaluated with reference to the four-point scale and criteria outlined in Table 8-9 'Visual Magnitude Criteria', below, combined with judgement of the likely duration and reversibility of change.

Table 8-9 Visual Magnitude Criteria

Classification	Description
Major	The Proposed Scheme would result in very noticeable change, occupying a large extent and important part of the view and/or becoming a prominent feature and /or the main focus of the view.
Moderate	The Proposed Scheme would result in noticeable change, occupying a more limited but important part of the view, distracting from the existing focus.
Minor	The Proposed Scheme would result in a small change, occupying a limited or unimportant part of the view, unlikely to distract from the existing focus.
Negligible or No Change	The Proposed Scheme would result in barely perceptible or no discernible change to the view.

Significance of Visual Effect

- 8.2.26 Determination of the significance of visual effects has been undertaken by employing professional judgement and experience to combine and analyse the magnitude of impact against the sensitivity of the receptor. Sensitivity to change is evaluated as a combination of the identified value and susceptibility of the visual receptor. The assessment takes into account likely changes to the visual composition, including the extent to which new features would distract or screen existing elements in the view or disrupt the scale, structure or focus of the existing view. Reference is also made to the significance matrix set out in DMRB LA 104.
- 8.2.27 The significance of visual effects is described with reference to the five-point scale set out in Table 8-10 'Significance of Visual Effect', below.

Table 8-10 Significance of Visual Effect

Classification	Description
Very large	The Proposed Scheme would become a prominent feature and would result in a very noticeable change to a highly sensitive and well composed view.
Large	The Proposed Scheme would introduce some noticeable features to a highly sensitive and well composed view or would be prominent within a less well composed and less sensitive view, resulting in a noticeable deterioration or improvement of the existing view.
Moderate	The Proposed Scheme would form a small feature within a highly sensitivity view or would be a more prominent feature within a poorly composed view of lesser sensitivity, resulting in a small but important deterioration or improvement of the existing view.
Slight	The Proposed Scheme would form a perceptible but unimportant feature within a view, resulting in a limited deterioration or improvement of the existing view.
Neutral	No discernible change to the existing view.

- 8.2.28 For the purpose of this assessment effects of moderate or greater are considered to be significant.

Limitations to Assessment

- 8.2.29 It is likely that the Proposed Scheme will be procured by means of a Design and Build (D&B) type contract. Under the terms of this contract type, the Contractor will undertake both the detailed design and construction of the Proposed Scheme. It is expected that the construction work would take place within the Scheme Extents as shown on Figure 1.2 'The Proposed Scheme'. The Scheme Extents have informed the land take calculations undertaken for assessment purposes in this ES. The land within the Scheme Extents will be purchased under a Compulsory purchase Order (CPO).
- 8.2.30 It is possible that the Contractor may require construction compounds to be located out with land identified in the CPO. Should construction compounds be located out with the Scheme Extents it will be the responsibility of the Contractor to assess the environmental impacts of the construction compounds and seek to mitigate these where possible.

- 8.2.31 The construction assessment is based on the construction information that is currently available, with advice being provided by the Highway Design Team. As with all construction assessments, the exact details of construction activities would not be fully known before a specific contractor is appointed to complete the works who would determine their exact construction methods and programme during the detailed design stage. The assessment of construction effects on landscape and visual receptors is based on the available outline phased construction programme, as detailed in Chapter 5 - The Proposed Scheme. The locations and size of construction compounds are not yet known and therefore these have not been included within the assessment of construction impacts. However, a mitigation measure has been included with the schedule of environmental commitments which requires landscape and visual issues to be considered in siting construction compounds. This is to ensure that they are sensitively sited to minimise land-take, avoid loss of trees, hedgerows and other landscape features, and not be visually intrusive in views from nearby residential properties.
- 8.2.32 As the Proposed Scheme is developed at detailed design any refinements to the design should be subject to environmental review to ensure that the residual effects would not be greater (or significantly different) than those reported in this ES. The findings of any such review should be subject to approval by Transport Scotland and where necessary opinions should be sought from the statutory bodies.
- 8.2.33 Zone of Theoretical Visibility (ZTV) diagrams have been used as a tool to inform the assessments. ZTVs present theoretical visibility of the Proposed Scheme based on a bare earth topographical model which does not account for intervening built form and vegetation and therefore tend to overstate actual visibility. The exact types of machinery required for construction are not yet known and therefore the height of cranes or other machinery is not reflected in the ZTV. The use and limitations of ZTVs is explained further in Paragraphs 8.5.40 to 8.5.42.
- 8.2.34 The visual assessment is based on a series of representative viewpoints related to key receptor groups. The on-site evaluation of magnitude of impact and significance of effects has been undertaken from the nearest publicly accessible location, and as such, assumptions as to the orientation of the main views from receptor locations have been made. Access to the grounds of properties at Summerside and Sheriffhall House was provided and therefore the assessment is more specific at these locations. For all locations the evaluation is based on an assumed worst-case location within each receptor group and as such the significance of effects on individual receptors may differ locally from that stated.
- 8.2.35 Most of the viewpoint photography has been captured during winter when trees are not in leaf. However, two additional viewpoints (VP9 – Millerhill Embankment and VP10 – Gilmerton Junction) have been included at the request of Midlothian Council (MLC) and due to timing of request and land access requirements it was not possible to capture winter photography for these locations. Summer photography has been included for these viewpoints to provide an indication of the baseline view. The assessment of potential effects on receptors at these locations is made based on a worst-case approach of a clear bright day in winter as per best practice and to be consistent with the approach for other receptors in this assessment. The assessment of residual effects on these and all other receptors is based on summer at year 15 of operation. This approach is consistent with best practice and allows proposed mitigation planting to be taken into consideration in the assessment of long-term residual impacts.
- 8.2.36 Photomontages have been prepared from three of the representative viewpoints to provide an indication of how the Proposed Scheme would fit into the baseline landscape and views. The approach to preparation and limitations of the photomontages is provided in Appendix 8.1 'Visualisation Production Methodology'.

8.3. Legislative and Policy Framework

- 8.3.1 The following section provides a summary of policies and plans that are relevant to landscape and visual aspects of the Proposed Scheme.

National Policy

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

- 8.3.2 The National Planning Framework (NPF3) was published in 2014 by the Scottish Government and is intended to guide Scotland's spatial development priorities for the next 20 to 30 years. The vision set out in NPF3 is divided into four outcomes, one of which (a natural resilient place) is of particular relevance to landscape and visual considerations. Within this outcome, NPF3 highlights the importance and value of landscape to Scotland and outlines protection for nationally important landscapes such as National Scenic Areas, National Parks and Wild Land. NPF3 also highlights the importance of landscape in place making and states that *'closer to settlements landscapes have an important role to play in sustaining local distinctiveness and cultural identity, and in supporting health and well-being'* (Para 4.4). It also recognises the *'need to manage change on the urban edge and work to improve productivity and the quality of the landscape setting of our towns and cities'* (Para 4.8)

Scottish Planning Policy (SPP) (Scottish Government, 2014b)

- 8.3.3 The Scottish Planning Policy (SPP) document is a statement of the Scottish Government's policy on nationally important land use matters. SPP facilitates development while at the same time *"protecting and enhancing the natural and built environment"* and is central to the Scottish Government's purpose of achieving sustainable economic growth (Para 2).
- 8.3.4 The importance of landscape is highlighted throughout the SPP document, with a particular focus at paragraphs 194 to 206. With relation to development management SPP states that *"the siting and design of development should take account of local landscape character"* and that *"development management decisions should take account of potential effects on landscapes and the natural and water environment, including cumulative effects. Developers should seek to minimise adverse impacts through careful planning and design, considering the services that the natural environment is providing and maximising the potential for enhancement"* (Para 202).

Regional Policy

South East Scotland Strategic Development Plan (SDP) (SESplan, 2013)

- 8.3.5 The Strategic Development Planning Authority for Edinburgh and South East Scotland's (SESplan's) Strategic Development Plan (2013) sets out a spatial strategy which recognises existing development commitments and promotes a sustainable pattern of growth across the City of Edinburgh, East Lothian, Fife, Midlothian, Scottish Borders and West Lothian Council areas. The plan sets out a number of key aims to deliver the overall vision, including to:
- *"Conserve and enhance the natural and built environment"; and*
 - *'Promote green networks including through increasing woodland planting to increase competitiveness, enhance biodiversity and create more attractive, healthy places to live'* (Para 17).
- 8.3.6 SESplan then develops these key aims further into development principles and policies. Policy 1B – The Spatial Strategy: Development Principles is the most relevant to landscape and visual aspects of the Proposed Scheme. Policy 1B sets out protection against significant adverse impacts on the integrity of various international, national and

local environmental designations, including National Scenic Areas, Areas of Great Landscape Value, and Garden and Designed Landscapes. This policy also recognises the importance of conserving and enhancing the natural and built environment to help improve quality of life in local communities and in creating healthy and attractive places to live.

- 8.3.7 A new Strategic Development Plan is currently being prepared which would replace this adopted SESplan. A review of the relevant policies in the proposed plan is provided below.

Proposed South East Scotland Strategic Development Plan (SDP2) (SESplan, 2016)

- 8.3.8 The Proposed Strategic Development Plan (SDP2) sets out the vision for the city region for the next 20 years. When approved it will replace the current Strategic Development Plan and will inform the next set of Local Development Plans.
- 8.3.9 The plan identifies the importance of landscape in place making and local identity, and particularly in providing a high-quality setting for existing and future settlement.
- 8.3.10 As discussed in Chapter 2 - Need for the Scheme, the Proposed SDP was rejected by the Scottish Ministers on 16 May 2019; however, the proposed plan has still been considered within this ES as a draft plan.

Local Policy

Edinburgh Local Development Plan (City of Edinburgh Council, 2016)

- 8.3.11 City of Edinburgh Council's Local Development Plan (LDP) (Adopted November 2016) includes a number of policies which seek to protect important landscapes and landscape features from inappropriate development, and also to shape the design of development to conserve and enhance the landscape quality. The following sets out the main policies relevant to landscape and visual considerations of the Proposed Scheme.
- 8.3.12 Policy Des 1 Design Quality and Context
- *“Planning permission will be granted for development where it is demonstrated that the proposal will create or contribute towards a sense of place. Design should be based on an overall design concept that draws upon positive characteristics of the surrounding area. Planning permission will not be granted for poor quality or inappropriate design or for proposals that would be damaging to the character or appearance of the area around it, particularly where this has special importance.”*
- 8.3.13 Policy Des 3 Development Design - Incorporating and Enhancing Existing and Potential Features
- *“Planning permission will be granted for development where it is demonstrated that existing characteristics and features worthy of retention on the site and in the surrounding area have been identified, incorporated and enhanced through its design.*
 - *Incorporation of existing features would include “trees and woodland, landscape character, views...”*
- 8.3.14 Policy Des 4 Development Design - Impact on Setting
- *“Planning permission will be granted for development where it is demonstrated that it will have a positive impact on its surroundings, including the character of the wider townscape and landscape, and impact on existing views.”*
- 8.3.15 Policy Des 8 Public Realm and Landscape Design
- *“Planning permission will be granted where...particular consideration has been given, if appropriate, to the planting of trees to ... road sides and create a robust landscape structure... and... a satisfactory scheme of maintenance will be put in place.”*
- 8.3.16 Policy Des 9 Urban Edge Development

- “Planning permission will only be granted for development on sites at the greenbelt boundary where it conserves and enhances the landscape setting and special character of the city... and... includes landscape improvement proposals that will strengthen the greenbelt boundary.”

8.3.17 Policy Env 7 Historic Gardens and Designed Landscapes

- *“Development will only be permitted where there is no detrimental impact on the character of a site, adverse effects on its setting or upon component features which contribute to its value.”*

8.3.18 Policy Env 11 Special Landscape Areas

- *“Planning permission will not be granted for development which would have a significant adverse impact on the special character of qualities of the Special Landscape Areas.”*

8.3.19 Policy Env 12 Trees

- *“Development will not be permitted if likely to have a damaging impact on a tree protected by a Tree Preservation Order or on any other tree or woodland worthy of retention unless necessary for good arboricultural reasons. Where such permission is granted, replacement planting of appropriate species and numbers will be required to offset the loss to amenity.”*

Midlothian Local Development Plan (Midlothian Council, 2017a)

8.3.20 Midlothian Council's Local Development Plan (LDP) was adopted in November. The LDP focuses on providing for, and managing, future change across the Council area in line with the SESplan requirements. It comprises a development strategy for the period to 2024 and a detailed policy framework to guide future land use in a way which best reflects SESplan's vision, strategic aims and objectives.

8.3.21 The following sections sets out the main policies relevant to landscape and visual considerations of the proposed Scheme. These policies are largely focused on ensuring landscape is an integral part of design of development, and also that important landscapes are protected.

8.3.22 Policy Dev 6 Layout and Design of New Development

- *“The Council will require good design and a high quality of architecture, in both the overall layout of development proposals and their constituent parts.”*

8.3.23 Policy Dev 7 Landscaping in New Development

- *“The Council will require development proposals to be accompanied by a comprehensive scheme of landscaping. The design of the scheme should be informed by the results of an appropriately detailed landscape assessment.”*

8.3.24 Policy ENV 6 Special Landscape Area

- *“Development proposals affecting Special Landscape Areas will only be permitted where they incorporate high standards of siting and design and where they will not have an unacceptable impact on the special landscape qualities of the area.”*

8.3.25 Policy ENV 7 Landscape Character

- *“Development will not be permitted where it may have an unacceptable effect on local landscape character. Where development is acceptable, it should respect such character and be compatible in terms of scale, siting and design.”*

8.3.26 Policy ENV 11 Woodland, Trees and Hedges

- *“Development will not be permitted where it could lead directly or indirectly to the loss of, or damage to, woodland, groups of trees’ and ‘where an exception to this policy is agreed, any woodland, trees or hedges lost will be replaced with equivalent.”*

8.3.27 Policy ENV 20 Nationally Important Gardens and Designed Landscapes

- *“Development should protect, and where appropriate enhance, gardens and designed landscapes. Development will not be permitted which would harm the character, appearance and/or setting of a garden or designed landscape.”*

8.3.28 Policy RD1 Development in the Countryside

- *“Development in the countryside will only be permitted if’... it is ‘of a scale and character appropriate to the rural area and well integrated into the rural landscape.”*

8.4. Consultations

8.4.1 Consultation in relation to landscape and visual has been undertaken with Scottish Natural Heritage, City of Edinburgh Council (CEC) and MLC to agree the scope of the assessments and the locations of representative viewpoints. Table 8-11 ‘Summary of Landscape and Visual Consultation’, below, provides an overview of consultation responses and the actions taken to address these within the assessment. A full summary of all consultation is provided in Chapter 7 - Consultation and Scoping.

Table 8-11 Summary of Landscape and Visual Consultation

Consultee	Summary of comments	How we addressed this
Scottish Natural Heritage (SNH)	<p>Advised that visualisations are included to aid assessment and communication of effects. These should include ancillary infrastructure (lighting, safety barriers, etc).</p> <p>Vehicle movements and effects from vehicle lights should be factored into the assessment.</p> <p>Suggested possibility of moving VP1 slightly south so the overhead line (OHL) is not visible in the photograph.</p> <p>Consider moving VP7 closer to the Proposed Scheme to an area with a more open aspect.</p>	<p>A series of visualisations and cross sections have been included in support of the LVIA which include all permanent elements of the Proposed Scheme.</p> <p>The LVIA includes consideration of all elements of the Proposed Scheme, as set out in Chapter 5 – The Proposed Scheme, and anticipated change resulting from traffic (including lights) using the completed scheme.</p> <p>An alternative location was reviewed on site. However, VP1 was selected to be representative of residential properties at Sheriffhall Mains and other locations further north as well as the A6106. Relocating the viewpoint southwards would make it less representative of views experienced from these receptors.</p> <p>VP7 has been moved to the north side of the roundabout to provide a more open view along the A7 towards Sheriffhall Roundabout, while still being representative of users of Core Path 6-0.</p>
City of Edinburgh Council (CEC)	No comments were received in relation to the proposed viewpoint locations	-
Midlothian Council (MLC)	<p>MLC suggested a number of additional viewpoint locations for consideration, as follows:</p> <p>Danderhall</p> <p>A720 East and West</p>	<p>Each of the locations were considered and site visits made where required to evaluate their suitability.</p> <p>This viewpoint was discounted as a result of considerable screening from adjacent buildings, topography and vegetation. However, the Kaimes Path (Core Path 4-8), included as a route receptor, gives a broad indication of potential impacts from this part of the study area.</p> <p>The A720 has been included in the assessment as a route receptor due to limitations of including a viewpoint on the existing road. Further consultation with MLC was undertaken and additional viewpoints requested at the A68 junction slip road and the A772 overbridge at the Gilmerton Junction.</p>

Consultee	Summary of comments	How we addressed this
	Aspirational embankment path	The A68 off slip location was discounted due to limited visibility and inability to safely obtain viewpoint photography. As above, potential impacts on users of the A720 are addressed in the assessment.
	Path network adjacent to entrance to Dalkeith House	A site visit identified no current public access onto the former railway embankment and therefore this viewpoint was initially discounted. However, following further consultation with MLC an additional viewpoint (VP9) was included to allow assessment of potential impacts on this aspirational route.
	A772 overbridge at Gilmerton Junction	An additional viewpoint (VP8) was added to the assessment as suggested.
		An additional viewpoint (VP10) has been included on the A772 overbridge at the Gilmerton Junction.
Forestry Commission	Recommended the inclusion of appropriate compensatory woodland planting to mitigate loss of existing trees.	The landscape mitigation design includes woodland and tree planting along road embankments, providing compensation for loss of existing trees and helping to reduce long term landscape and visual effects.

8.5. Baseline Conditions

- 8.5.1 The following section provides a baseline description of the existing conditions of each of the landscape and visual receptors identified within the study area.

Existing Site Conditions

- 8.5.2 The Proposed Scheme is located to the south of Edinburgh at Sheriffhall Roundabout on the A720 Edinburgh City Bypass ('the A720'). The Proposed Scheme extents cover an area of approximately 31ha, centred on the existing roundabout and associated roads. These existing routes and the associated traffic, lighting, signage and road furniture have a strong influence on the local landscape character. The Borders Railway and an overhead line also cross through the Proposed Scheme area.
- 8.5.3 Topography and landform generally slope gradually from northwest down towards the Dean Burn in the southeast, although is heavily altered to accommodate the existing road network. This is particularly evident to the south and east where the A720, A6106 South and A7 South are raised on embankments above the adjacent farmland.
- 8.5.4 The existing roundabout and road corridors, including the associated embankments occupy a large part of the Proposed Scheme extents. Outwith the areas occupied by road and transport infrastructure land use is a mix of arable farming and grazing.
- 8.5.5 Vegetation cover is variable and includes a mix of trees, hedgerows, scrub and grazing and arable fields as indicated on Figure 8.2 'Landscape Features'. A line of mature poplar trees along the north side of the A6106 North and west side of the A7 North is a notable feature within the Proposed Scheme extents. Two small parts of a larger mature shelterbelt perpendicular to, and bisected by, the A7 South are also within the Proposed Scheme extents. In addition, there are small areas of semi-mature woodland and scrub to the southeast of the roundabout, towards Sheriffhall House, and to the northwest of the roundabout alongside the A7 North towards Summerside. Fragmented semi-mature trees and scrub are also present alongside the A720 to the east and west of the roundabout, and along the A6106 South and A7 South. A number of hedgerows are also present, particularly along the A6106 North and A7 North and to the north of the A720 West. None of the existing trees are subject to protection through Tree Preservation Orders.

- 8.5.6 Stone walls along field and property boundaries are also present within the proposed Scheme extents and are characteristic features of the wider landscape of this area.

Landscape Designations

- 8.5.7 Landscapes can be given international, national, regional or local designations in recognition of their importance, outstanding scenic interest or attractiveness. The study area contains a number of landscape designations which are shown on Figure 8.1 'Landscape Designations'.

Gardens and Designed Landscapes

- 8.5.8 An inventory of Gardens and Designed Landscapes (GDL) was first compiled in 1987 in order to identify nationally important sites, to raise awareness of their significance and provide information for future management. The following three GDLs have been identified within the study area:

- Dalkeith House GDL;
- The Drum GDL; and,
- Melville Castle GDL.

- 8.5.9 A combination of desk and field-based analysis has indicated that the extensive policy woodland along the northern boundary of the Melville Castle GDL would limit the potential for landscape character impacts resulting from the Proposed Scheme. Therefore, Melville Castle GDL has not been considered further in this assessment.

Dalkeith House (Palace) GDL

- 8.5.10 Dalkeith House (Palace) GDL is in the east of the study area, immediately north of Dalkeith and southeast of the A720 and covers an area of 440ha.

- 8.5.11 The parkland, at the site of a former fortified castle, surrounded by the North and South Esk Rivers was originally enclosed as deer parks. Dalkeith House was later designed by James Smith in 1701. The A Listed House has been described as 'the grandest of all early classical houses in Scotland'.

- 8.5.12 Within the estate there are vast woodlands which create a number of avenues which frame vistas towards Dalkeith House. Views looking inwards from the surrounding road corridors are restricted by the tall boundary walls and policy woodland.

- 8.5.13 Dalkeith House (Palace) GDL is considered to be of high landscape value as a result of its national level of importance as a historic designed landscape and its local and regional importance as part of a Special Landscape Area, a Country Park, visitor destination and recreational resource.

The Drum GDL

- 8.5.14 The Drum GDL is located to the north east of the study area. The GDL, thought to have been designed by William Adam, is located on the southern urban fringe of Edinburgh and covers an area of approximately 80ha. The current layout is largely similar to that recorded in an OS plan from 1800.

- 8.5.15 The Designed Landscape contains the Palladian-style mansion of Drum House which sits on a ridge with extensive views towards the south east. There is a designed view, framed by woodland blocks, looking south east from Drum House towards the North Esk Valley (see Figure 8.1 'Landscape Designations'). The GDL is otherwise well-screened from the surrounding road corridors by a combination of woodland and boundary walls.

8.5.16 The Drum GDL is considered to be of high landscape value as a result of its national level of importance as a historic designed landscape, and local importance as a Special Landscape Area.

Special Landscape Areas

8.5.17 Special Landscape Areas (SLA) are designated for their local landscape value and importance and are identified and given policy protection within Local Development Plans. There are two such landscape designations found within the study area. MLC produced 'Special Landscape Areas Supplementary Guidance' in 2017 (Midlothian Council, 2017b) which informs the below descriptions.

North Esk Valley SLA

8.5.18 The North Esk SLA occupies a large corridor along the North Esk River within the south and east of the study area. The landscape characteristics and qualities of this SLA which are relevant to the study area include:

- The strong sense of naturalness and seclusion that can be experienced in the valley, including in areas relatively close to transport corridors and settlements which lie on the valley fringes;
- Extensive policy woodlands and other designed landscape features associated with the Dalkeith, Melville Castle, Mavisbank and Auchendinny estates;
- Small pastures on valley sides, enclosed by hedgerows and shelterbelts;
- The rich cultural interest of this river valley which includes the internationally renowned Rosslyn Chapel and the romantic Roslin Glen, mansion houses and historic buildings as well as a number of industrial heritage sites;
- The wooded setting this landscape provides to the historic settlements of Lasswade, Polton and Dalkeith; and
- The continuity of recreational routes through much of the valley. Immediately north-west of Dalkeith lies the confluence of the North and South Esk rivers within Dalkeith Country Park. The sinuous route of the North Esk between Dalkeith and Penicuik.

8.5.19 The North Esk Valley SLA contains the nationally important landscapes of Dalkeith House and Melville Castle GDLs, while also acting as an important recreational resource, indicating a high landscape value.

The Drum SLA

8.5.20 The Drum SLA occupies a small area on the northern periphery of the study area largely similar to the extent of the Drum GDL, described in Paragraph 8.5.15, above. The landscape characteristics and qualities of this SLA which are relevant to the study area include:

- *"A highly scenic wooded setting for the Palladian-style mansion of Drum House, built in the early 18th century...."*
- *The Drum is one of the policy landscapes characteristic of Edinburgh's periphery but is comparatively unusual as a relatively intact and privately owned estate. The designed landscape is of particular significance for its historical and architectural associations with the category A listed Drum House, which were both designed by the architect William Adam.*
- *Drum House and its immediate landscape setting are screened from the surrounding area by perimeter woodland, which forms a significant feature on the summit of a low hill. This can be appreciated across a setting of well-defined fields and paddocks to the south. The quality of the estate's perimeter walls, gate piers, East Lodge, parkland and policy woodlands contribute to local character and scenic value. The landscape's pastoral qualities have recreational appeal from paths providing access between Gilmerton and Danderhall. The estate is also a centre for riding for the disabled and is opened on an occasional basis for charity" (City of Edinburgh Council, 2010, pg. 97).*

8.5.21 The Drum SLA is largely located within the nationally important Drum GDL and is considered to be of high landscape value.

Landscape Character Areas

8.5.22 A detailed review and classification of the landscape areas and types of Scotland has been undertaken by SNH and partner Councils. The desk study revealed three landscape character assessments concerned with the study area, namely:

- The Lothians Landscape Character Assessment (Scottish Natural Heritage, 1998);
- The Edinburgh Landscape Character Assessment (City of Edinburgh Council, 2010); and
- Edinburgh Green Belt: Landscape Character Assessment (Midlothian Council, 2008).

8.5.23 Each of these documents has been referred to in establishing the baseline landscape character for the study area. The Landscape Character Areas (LCAs) identified within the Edinburgh Green Belt: Landscape Character Assessment have been utilised for the purpose of this assessment as they are identified and described at a local scale, are more recent than the Lothian Landscape Character Assessment, and cover the whole study area.

8.5.24 The Edinburgh Green Belt Landscape Character Assessment provides a detailed classification of the landscape character of the Edinburgh Green Belt, dividing it into broad Landscape Character Types and more detailed LCAs. The following eight LCAs are located within the study area, as shown on Figure 8.3 'Landscape Character'.

- Burdiehouse Farmland LCA;
- Dalkeith Palace LCA;
- Danderhall Settled Farmland LCA;
- Drum Estate Landscape LCA;
- Edgefield LCA;
- Melville North Esk Valley LCA;
- Melville Nurseries LCA; and,
- South Melville LCA.

8.5.25 In addition to the above, parts of the study area are identified as of urban character.

8.5.26 The boundary of Danderhall Settled Farmland LCA has been slightly edited to include some small areas outwith the published Landscape Character Assessment. AECOM's site visits confirmed these changes to be representative of the characteristics set out in the character descriptions. The original map can be found in the published assessment online.

8.5.27 GLVIA states that the scope of the landscape assessment may "*be based on the extent of the area from which the development is potentially visible*". An initial site appraisal identified that the visual envelope of the Proposed Scheme would be limited in the south and west of the study area by topography and woodland, resulting in very limited or no visibility from three of the eight identified LCAs (Edgefield, Melville North Esk Valley and South Melville). On the basis that these LCAs are unlikely to experience significant effects they have not be considered further in this assessment.

8.5.28 The below descriptions of the baseline conditions of the remaining five LCAs have been informed by a review of the existing published landscape character area descriptions combined with observations made in the field.

Danderhall Settled Farmland LCA

8.5.29 The Danderhall Settled Farmland LCA covers a large portion of the northern half of the study area and is characterised by flat or gently undulating landform that rises to the northwest forming a distinct ridge of higher ground. Infrastructure

elements including the A720 corridor and Sheriffhall Roundabout, the A7, the Borders Railway and a double line of Overhead Line (OHL) towers which cut across this landscape and have a strong influence on its character. Lighting and signage associated with the road corridors also have an influence on the perception of this landscape. The agricultural fields located within the study area have lost, to some extent, their original character as a result of becoming fragmented and influenced by encroaching settlement, former industrial development and derelict land. The LCA has a variable sense of openness and enclosure as a result of the combination of open agricultural land and remnant policy woodland. Poplar trees and shelterbelt planting associated with field boundaries, linear infrastructure and estates provide a degree of structure to the landscape.

8.5.30 Within the study area, this LCA is not covered by any landscape designation. It is a relatively commonplace agricultural landscape strongly influenced by existing infrastructure and adjacent development, typical of an urban fringe location. Although there is some value as a local recreational resource the overall landscape value of this LCA is considered to be low.

Melville Nurseries LCA

8.5.31 Covering an area in the south west of the study area, Melville Nurseries LCA is gently undulating and comprises a series of pastoral fields divided by belts of mixed species policy woodland and beech stands. A network of busy roads, associated lighting and signage, OHL towers and Melville Nursery and associated commercial development has resulted in a complex, fragmented landscape. Shelterbelts and woodland are key features within this landscape and they provide local containment and enclosure, limiting outward views in some locations. There are varying levels of openness throughout the LCA.

8.5.32 A small section of this LCA is located within a local landscape designation (the North Esk SLA) which may indicate an increased level of value locally. However, the overriding impression is of a fragmented landscape which is influenced by development and infrastructure and as such the landscape value of this LCA is considered to be low.

Dalkeith Palace LCA

8.5.33 Located in the east of the study area, Dalkeith Palace LCA is an extensive designed landscape which forms the setting of Dalkeith House. The LCA is heavily wooded, particularly around the estate's perimeter, resulting in a strong sense of enclosure and limited outward views. The Dean Burn, a tributary to the River North Esk, flows through the wooded valley. Remnants of the designed landscape are evident in the form of ornamental specimen trees, estate walls and buildings and areas of parkland and policy woodland. The extensively wooded river valley brings an overall strong sense of naturalness and an often high scenic quality. This is reduced locally where infrastructure crosses the LCA in the form of OHLs and major roads, although these are located further east, outside of the study area.

8.5.34 A large proportion of this LCA falls within the national and local landscape designations of the Dalkeith House (Palace) GDL and North Esk Valley SLA. In addition, this LCA is also partially within a Country Park and is locally important as a visitor destination and recreational resource. The Dalkeith Palace LCA is therefore considered to be of high landscape value.

Burdiehouse Farmland LCA

8.5.35 The Burdiehouse Farmland LCA is located in the west of the study area and is characterised by rolling landform which forms a distinct ridge rising toward the southwest. Within the study area, this LCA comprises level or even sloped arable fields, enclosed by a combination of post and wire fences, stone walls and hedgerows. The condition of hedgerows and boundaries varies locally, as does the level of influence of development and infrastructure. To the east a range of developments and different land uses result in a more fragmented complex landscape, while two

large OHLs are parallel to the A720 in the south. Hedgerow trees along boundaries offer a degree of local containment, although in general there are more open views from this LCA to the surrounding landscapes, including towards the Pentland Hills further west. Settlement is limited to isolated farmsteads.

- 8.5.36 This LCA is not covered by a landscape designation and is typical of lowland farmland on the urban fringe, with a combination of largely intact field patterns in some areas but an overriding impression of a fragmented or degraded landscape, influenced by development and infrastructure. It is therefore considered that the landscape value of the Burdiehouse Farmland LCA is low.

Drum Estate Landscape LCA

- 8.5.37 The Drum Estate Landscape LCA covers a small area to the northwest of the study area, adjacent to the A7 North. This LCA is characterised by parkland, small paddocks and policy woodland. Field boundaries are typically formed of stone walls with some tree belts. The policy woodland and parkland trees provide a local sense of containment and enclosure, while other areas are more open, with views towards the surrounding landscape, particularly to the south. The southern boundary of the estate is predominantly treelined and runs adjacent to a disused railway line now used as a footpath and cycle route. There is little development within this LCA, and although some of the policy woodland is now fragmented the overall impression is one of a largely intact estate landscape.
- 8.5.38 This LCA is covered by both a national and local level designation (the Drum GDL and The Drum SLA) and is considered to be of high landscape value.

Visual Amenity

- 8.5.39 This section identifies visual receptors within the study area and explains the current visual amenity experienced by these receptors. A Zone of Theoretical Visibility (ZTV) has been produced, as described below, to help with the identification of potential visual receptors. The ZTV identifies those areas that have the potential to experience views of the Development and is illustrated on Figure 8.4 'Zone of Theoretical Visibility'.

Zone of Theoretical Visibility (ZTV)

- 8.5.40 A computer generated ZTV map has been prepared for the Proposed Scheme, to assist the assessment process. This has been used to inform the selection of representative viewpoints and to help illustrate the potential influence of the Proposed Scheme in the wider landscape. The ZTV map indicates areas from where it may be possible to view part of or the entire Proposed Scheme. However, the use of the map needs to be qualified by the following considerations:
- The ZTV is based on a bare ground model - Ordnance Survey (OS) Terrain 5, Landform Panorama data based on a 5 m grid terrain model;
 - The bare ground ZTV mapping is limited by the detail of the digital terrain model data used and does not take account of local topographic variations or screening from built form or vegetation;
 - Some areas of theoretical visibility may comprise woodland or agricultural land, where there is effectively no public access and the likelihood of views being experienced is consequently low; and
 - The ZTV does not take account of the likely orientation of a viewer, such as the direction of travel and there is no allowance for reduction of visibility with distance, weather or light.
- 8.5.41 These limitations mean that the ZTV diagram tends to overestimate the extent of the area from which the Proposed Scheme would be visible. It should be considered as a tool to assist in assessing the theoretical visibility of the Proposed Scheme and not a measure of the visual effect.

8.5.42 The ZTV illustrates the theoretical visibility of the Proposed Scheme, including road traffic (lorries and cars up to 4m in height) on the proposed embankments and bridges. Theoretical visibility extends across much of the study area, including the gently rolling land to the north and south of the Proposed Scheme. Visibility is notably restricted from the deeply incised valley of the North Esk River to the south of the study area. Large blocks of woodland to the south of the study area, including Dalkeith Country Park and Lugton Bogs, further restrict visibility of the Proposed Scheme. Similarly, trees, built form and rising landform in close proximity to the north of the Proposed Scheme restrict and limit visibility from parts of the northern study area.

Overview of Visual Baseline

8.5.43 The study area is relatively well settled, with the main concentrations located to the southeast and northwest boundaries. Settlement in these areas includes the northwest edge of Dalkeith and the southern edge of Danderhall. Views out towards the surrounding countryside from these settlements are often restricted by a combination of topography and woodland, although some more open views are possible. Beyond these two areas there are a number of smaller settlements and groups of residential properties scattered throughout the study area. There are also several commercial developments within the study area, with particular concentrations at Shawfair and Melville Nurseries. A number of major roads and transport routes cut across the study area, converging at the existing Sheriffhall Roundabout. In addition, a number of recreational routes are also present within the study area.

8.5.44 Initial desk-based review identified the following settlements within the study area:

- Danderhall, Newton Village and Millerhill in the north;
- Dalkeith, Lugton and Eskbank in the south; and
- Scattered residential properties at Campend, Summerside, Sheriffhall Mains, Sheriffhall Farm, Melville Cottages and Burnside, Melville Grange and Drum Farm.

8.5.45 Through site appraisal it was established that the visual envelope of the Proposed Scheme would be limited at the wider extents of the study area by topography and woodland, resulting in very limited or no visibility from the main settlements of Danderhall, Newton Village, Dalkeith, Lugton and Eskbank. There would also be limited or no visibility from the scattered properties at Melville Cottages and Burnside, Melville Grange and Drum Farm as a result of the orientation of properties and intervening vegetation, built form and topography. On the basis that these settlements and properties are unlikely to experience significant effects they have not be considered further in this assessment. The remaining settlements and residential properties (Millerhill, Campend, Summerside, Sheriffhall Mains and Sheriffhall Farm) have been included in the assessment. A representative viewpoint has been identified and included for each of these receptors or receptor groups and a baseline description is provided below.

8.5.46 A series of transport and recreational routes have also been identified within the study area, shown on Figure 8.5 'Visual Receptors' and listed below:

- A720;
- A7 South;
- A7 North and Core Path CEC4 Craigmillar-Dalkeith Link;
- A6106 South Old Dalkeith Road and Core Path 4-34/35a;
- A6106 North Millerhill Road;
- A772 and Core Path 6-0;
- A768 Melville Dykes Road/Lasswade Road;

- B6415 Old Craighall Road;
- B6392 Gilmerton Road;
- Newton Church Road;
- Borders Railway;
- Shawfair to Lasswade Shared Path;
- The Kaims path which includes Core Path 4-8 and Core Path 4-6; and,
- Core Paths 4-5, 4-35, 4-25, 4-36, 4-38, 6-2, 6-3, 6-4, 6-10 and 6-11.

8.5.47 A site-based review has indicated that there would be little, if any, visibility towards the Proposed Scheme from a number of these routes (A768, B6415, B6392, Newton Church Road, and Core Paths 4-5, 4-35, 4-25, 4-36, 4-38, 6-2, 6-3, 6-4, 6-10 and 6-11) and therefore they have not been considered further in this assessment. The remaining routes (A720, A7 South, A7 North and Core Path CEC4, A6106 Old Dalkeith Road and Core path 4-34/35a, A6106 Millerhill road, A772 and Core Path 6-0, Borders Railway, Shawfair to Lasswade Shared Path, and Kaimes Path/Core Paths 4-6 and 4-8) have been included in the assessment and are either covered by a representative viewpoint or are assessed separately as a route receptor.

Representative Viewpoints

8.5.48 A series of ten representative viewpoint locations have been selected to form the basis of the visual assessment. These have been identified to provide a representative cross section of visual receptors within the study area and have been selected in consultation with relevant local authorities and SNH as described in Section 8.4. The locations of the viewpoints are provided on Figure 8.5 'Visual Receptors' and details of each, including a description of the baseline view and its value are provided below. Figure 8.6 'Viewpoints and Photomontages' panoramic photography of the baseline view from each of the viewpoint locations. Table 8-12 'Viewpoints and Visual Receptors' provides a list of the viewpoint locations and the receptors they have been selected to represent.

Table 8-12 Viewpoints and Visual Receptors

Viewpoint	Location	Visual Receptors
Viewpoint 1 – Sheriffhall Mains	332008, 668654	Residential properties at Sheriffhall Mains; and road users on the A6106 North (Millerhill Road)
Viewpoint 2 - Campend	331562, 668259	Residential properties at Campend; and users of the A7 north and Core Path (CEC4 Craigmillar-Dalkeith Link)
Viewpoint 3 - Summerside	331628, 668013	Residential properties at Summerside
Viewpoint 4 – Old Sheriffhall	332010, 667986	Residential properties (Sheriffhall House and Old Sheriffhall Farm)
Viewpoint 5 – Lasswade to Shawfair shared path	330849, 668838	Users of the Lasswade to Shawfair shared path
Viewpoint 6 – Elginhaugh Farm pub and restaurant	331522, 667607	Visitors to the various leisure and commercial properties at Melville Nurseries and Sheriffhall South
Viewpoint 7 – Gilmerton Road Roundabout, A7 South	331601, 667450	Road users of the A7 South, A772 and Core Path 6-0
Viewpoint 8 – King's Gate, A6016 South	332128, 667676	Road users of the A6106 South and Core Path CEC4 (Craigmillar – Dalkeith Link)/4-34 and 4-35a
Viewpoint 9 – Millerhill Embankment	332729, 669207	Residential properties at Millerhill; and users of a potential future footpath along the old rail embankment
Viewpoint 10 – A772 overbridge, Gilmerton Junction	330565, 667865	Road users on the A772 and Core Path 6-0

Viewpoint 1 - Sheriffhall Mains

- 8.5.49 This viewpoint is representative of views experienced from residential properties at Sheriffhall Mains and road users of the A6106 North (Millerhill Road). Views from this viewpoint location and the A6106 are open and extend across a relatively flat agricultural landscape. Vegetation in the mid-distance partially restricts views to the south, while views in other directions tend to be more open and distant. Views from the properties at Sheriffhall Mains are variable, but tend to be focused towards the northeast, with limited outward visibility in other directions. The exception to this is the southernmost dwelling which has open views to the south.
- 8.5.50 Manmade infrastructure including the A6106, Borders Railway line and OHL towers exert a strong influence on many of the outward views from these receptors. The A720 road corridor and associated traffic and lighting is a notable feature in many views, particularly where elevated on embankment to the east of Sheriffhall Roundabout. The roundabout itself is largely screened by mature vegetation and to a lesser extent by intervening landform.
- 8.5.51 Views from these receptors and the viewpoint location are variable and tend to include a number of detracting features and are unrecognised and typical of views in this area. Taking all of this into account, the value of the view is considered to be low.

Viewpoint 2 - Campend

- 8.5.52 This viewpoint is representative of a cluster of properties located at Campend Farm, northwest of Sheriffhall Roundabout. Receptors include residential properties and users of the A7 and Core Path (CEC4 Craigmillar-Dalkeith Link).
- 8.5.53 The main orientation of views from the residential properties is toward the fields to the southwest, across the A7. However, visibility in this direction is partially restricted by mature vegetation and a hedgerow running parallel with the road corridor, particularly from the ground level. Views in other directions are also largely screened by surrounding trees and adjacent buildings. The foreground of the views includes the A7 corridor and associated traffic and signage.
- 8.5.54 Looking northwest several built elements including large buildings at Shawfair Park, OHL towers and the A7 road corridor are prominent features within the mid-distance. To the southwest traffic on the A720 is partially visible where there are gaps in the vegetation belt that bounds the road corridor. A large woodland block beyond the A720 forms the backdrop of the view and limits more distant views in this direction. The Pentland Hills are a distant feature of views looking west, where not restricted by foreground vegetation. Views to the southeast, including towards Sheriffhall Roundabout, and east are heavily restricted by mature vegetation and landform.
- 8.5.55 Views from these receptors are unrecognised and are typical of the area and contain a number of detracting elements, including in the foreground and therefore the value of the view is considered to be of low.

Viewpoint 3 - Summerside

- 8.5.56 This viewpoint is representative of a group of residential properties at Summerside, northwest of Sheriffhall Roundabout. Properties include two semi-detached dwellings located just off and facing towards the A7; two semi-detached cottages orientated towards the southeast; and a larger detached property set further back and orientated east and southeast, as shown on Figure 8.7 'Summerside Visual Receptor Plan'. Most views from these properties are contained by the adjacent buildings, boundary walls and mature evergreen vegetation within gardens. There are some filtered views across the farmland to the northwest, and some limited views south which include glimpses of hills in the background. Plate 8-1 below provides a photograph of the view from the largest property of the group (Summerside House) which is typical of restricted nature of views experienced from these properties.

Plate 8-1 View from Summerside House

- 8.5.57 There are more open views from the viewpoint location, which is located in the rear garden area adjacent to Summerside House. This viewpoint has been selected to give a worst-case representation of views experienced from this group of properties, and baseline photography is provided in Figure 8.6.3a. From this location a field of rough grazing pasture occupies the foreground, with partially filtered and close-range views of traffic on the A720 West and Sheriffhall Roundabout. Lighting columns and overhead lines are also visible within the mid-distance and an OHL Tower is also visible further south.
- 8.5.58 Views from the residential properties are generally well contained and where outward views are possible these include a number of close range and more distant detracting features including traffic on the A7 north, A720 West and Sheriffhall Roundabout. It is therefore considered that the value of the view is low.

Viewpoint 4 - Old Sheriffhall

- 8.5.59 This viewpoint is representative of two residential properties (Sheriffhall House and Old Sheriffhall Farm) with adjacent outbuildings, located in close proximity to the east of Sheriffhall Roundabout. The properties sit at a slightly elevated position and views are generally orientated southeast, towards the Borders Railway and woodland which surrounds Dalkeith Country Park. The properties sit within farmland which forms the foreground of views in all directions.
- 8.5.60 Views to the northwest are partially restricted by adjacent outbuildings and mature vegetation, including along the embankments of the A720. The A720 and associated traffic is prominent where visible between gaps in the vegetation, with other associated elements such as lighting columns also visible.
- 8.5.61 Taking into account the limited, unrecognised and typical nature of views from this location and the presence of a number of detracting elements, the value of the view is low.

Viewpoint 5 - Lasswade to Shawfair Shared Path

- 8.5.62 This viewpoint is representative of users of the Lasswade to Shawfair shared path which follows the route of a disused railway line, south of the Drum and Danderhall, in the north of the study area. Views are largely focused along the path, which is elevated above the surrounding fields to the south. Where there are gaps in the vegetation which line the route, outward views are possible over the adjacent fields both to the north and south.
- 8.5.63 Views north have a strong composition consisting of small fields and woodland within the Drum Estate and include more distant views of the Pentland Hills to the northwest.
- 8.5.64 Views south have a more complex composition, with a combination of built elements and fields in the mid-ground looking out towards the distant rising hills and the settlements of Easthouses and Mayfield. A double line of OHL towers and soil composting works at Todhills Business Park are prominent features within these views. Lighting columns associated with the A7 and more distant A720 are also visible, with glimpsed views of traffic on the Sheriffhall Roundabout and a section of the A720 West also possible. To the southwest there are distant views of the Moorfoot Hills and the focus of views in this direction is to the distant horizon line.

- 8.5.65 Views from this footpath are variable, with some well composed views to the north. However, the numerous and often prominent, detracting features to the south reduce the overall value of the view, which is considered to be low.

Viewpoint 6 - Elginhaugh Farm Pub and Restaurant

- 8.5.66 This viewpoint is representative of views experienced by visitors to a number of retail and leisure facilities around Melville Nurseries and Sheriffhall South, including the Elginhaugh Farm Pub and Dobbie's Garden Centre. Views from these locations are variable, often with no clear focus or orientation, but most are restricted to short or mid-distance by built form and mature woodland. To the north and east there are short range views across fields, towards woodland blocks. During the winter there are heavily filtered views through the woodland to the field and road infrastructure of the A7, A720 and Sheriffhall Roundabout to the north. Along the road corridors traffic, lighting columns, signage, boundary walls/fences and tree planting are common features of these views.
- 8.5.67 As a result of the variable, unrecognised and unpromoted nature of views, the prevalence of built form, road infrastructure and associated traffic, the overall value of the view is considered to be low.

Viewpoint 7 - Gilmerton Road Roundabout, A7 South

- 8.5.68 This viewpoint is representative of views experienced by road users of the A7 and A772 (including Core Path 6-0). Views are focused along the road corridors and are relatively short range due to the adjacent woodland which restricts visibility. The road corridors of the A772 and A7, including the associated traffic, signage and lighting columns, are prominent features within the foreground. There are some narrow longer distance views to the north along the A7 corridor leading towards Sheriffhall Roundabout. These include traffic and road infrastructure, signage and lighting columns associated with the A7 South and Sheriffhall Roundabout and OHL towers in the fore and mid-ground and the Firth of Forth and Fife in the distance.
- 8.5.69 The unrecognised and typical nature of the views, restricted visibility and prevalence of detracting features results in an overall low value of the view from this location.

Viewpoint 8 – King's Gate, A6106 South

- 8.5.70 This viewpoint is representative of views experienced by road users of the A6106 South (Old Dalkeith Road) and adjacent Core Path CEC4 (Craigmillar-Dalkeith Link)/4-34 and 4-35a. From this location, views are narrow, filtered and focused along the road corridor north towards Sheriffhall Roundabout by the adjacent boundary vegetation. Lighting columns, signage and traffic on the A6106 and a small part of Sheriffhall Roundabout are notable within the view. Closer to Sheriffhall Roundabout a combination of intervening landform and vegetation limits views, although gaps in vegetation provide glimpses to the adjacent fields and traffic on the A7 South, to the east. Views in other directions are also generally enclosed by mature woodland and trees, although some more distant views are possible to the southeast.
- 8.5.71 The strong influence of the road corridor and the associated traffic, lighting columns and signage are detracting features along this route, from which views are not promoted or recognised, and therefore the overall value of the view is considered to be low.

Viewpoint 9 – Millerhill Embankment

- 8.5.72 This viewpoint has been included at the request of MLC and is representative of views experienced from a former railway embankment which extends from Millerhill to the A720 East, and from Millerhill itself. This is currently not a marked route, although MLC has an aspiration for this embankment to be developed into a public footpath.

- 8.5.73 The viewpoint location is on the former railway embankment and is elevated above the surrounding area, resulting in relatively expansive views. There is no obvious focus to views, although Arthur's Seat and the Pentland Hills are distant features to the northwest and southwest, and the Firth of Forth and Fife visible in the distance to the north. Built development is present in views in most directions, with a double line of OHL towers relatively prominent across a large part of the view. The presence of road infrastructure and traffic, including on embankment, is apparent in several parts of the view, most notably to the east where the A720 is in close proximity. Lighting columns, signage and traffic on the A720 and at Sheriffhall Roundabout are also visible to the south, beyond the OHL towers in the foreground.
- 8.5.74 This viewpoint is also intended to be representative of properties in Millerhill, although the settlement is generally located at a lower elevation and therefore visibility more restricted. Properties in Millerhill tend to be arranged along Old Craighall Road, with views orientated northwest and southeast. These views are often restricted by adjacent buildings or topography and vegetation, although some more open views are possible, particularly from upper floors of taller buildings. These views include a number of detracting elements, most notably the OHL towers to the east and south.
- 8.5.75 Although this viewpoint is slightly elevated and gains expansive views, including distant scenic elements, a series of foreground structures detract from the overall impression of the view, reducing the scenic quality. This location is also within an area of private land not currently accessible by the public and as such the value of the view is low.

Viewpoint 10 – A772 overbridge, Gilmerton Junction

- 8.5.76 This viewpoint is representative of road users on the A772 overbridge which crosses the A720 at the Gilmerton Junction. This route is also a Core Path (6-0) and MLC recommended cycle route. A description of the baseline view from the A720 West is provided below in paragraph 8.5.79.
- 8.5.77 Views from this location tend to be focused along the A720 to the east and west, framed by the planted embankments on either side. The road infrastructure and associated traffic, particularly to the east where it is often queuing on approach to the Sheriffhall Roundabout, is prominent in the view in both directions. However, there are also views to more distant rolling hills to the east and to the Pentland Hills in the west, although a series of OHL towers interrupt the views west. The tops of lighting columns at Sheriffhall Roundabout are also visible to the east, but the roundabout itself is screened by intervening vegetation. There are also some framed, mid-range views south along the A772 towards the adjacent fields and woodland beyond.
- 8.5.78 Views from this location are heavily influenced by the road corridors, infrastructure and traffic and as such the value of the view is low.

Route Receptors

A720 Edinburgh City Bypass

- 8.5.79 This is the main road within the study area and the bypass around the City of Edinburgh. To the west of Sheriffhall Roundabout the route largely sits lower than the surroundings, within planted embankments on both sides. The views from this section, travelling both east and west, are focused along the road corridor, with only occasional glimpses to the surrounding landscape. To the east of Sheriffhall Roundabout the road corridor is elevated above the surrounding land, allowing some open views north and west. A double line of OHL towers is a notable detracting element in these views. On the westbound approach to Sheriffhall Roundabout, there are some glimpsed, distant views toward the Pentland hills further to the west. Views south are largely restricted by mature woodland which forms the boundary of Dalkeith Country Park.

- 8.5.80 Views towards Sheriffhall Roundabout and its approaches are only possible in close range due to the alignment of the road and intervening vegetation and landform. The value of the view from the A720 is considered to be low, as a result of the main focus being along the road in the direction of travel and the fact that outward views are largely limited and/or include notable detracting features.

Borders Railway

- 8.5.81 The Borders Railway is located to the east of the study area and connects Edinburgh with the towns of Galashiels and Tweedbank within the Scottish Borders. The railway sits at a lower level than the surrounding land, within cutting for much of the length within the study area. Views from the train are therefore largely restricted and enclosed, although there are occasional glimpsed and more open views to adjacent agricultural fields and from a short section to the embankments and associated traffic of the A720 East and Sheriffhall Roundabout. As a result of the limited outward views from the section of this route within the study area the value of the view is considered to be low.

The Kaims Core Path (Core Path 4-8 and Core Path 4-6)

- 8.5.82 This route is located within the north of the study area, between Campend and Newton Village. The route utilises an abandoned railway line, which is elevated above the surrounding land. Views from the route are heavily filtered and focused along the path by the adjacent boundary planting. Outward views are largely limited to heavily filtered views of a combination of the urban fringe setting, agricultural fields and buildings, OHL towers and roads. There are occasional long-distance open views from where there are gaps within vegetation. There are partially screened views to the east and southeast of the A6106 North and A720 East and associated structures and traffic further in the distance. Sheriffhall Roundabout and other road infrastructure to the south is predominantly screened by topography and mature vegetation.
- 8.5.83 Views from this route are variable, unrecognised and largely enclosed, and where more open views are possible, they often include detracting elements. It is therefore considered that the value of the view is low.

8.6. Potential Impacts

Key Aspects of the Proposed Scheme relevant to the Assessment

- 8.6.1 The following sections sets out a brief summary of the elements of the Proposed Scheme which may result in landscape and visual effects during the construction and operational phases.

Construction

- 8.6.2 Construction activities associated with the Proposed Scheme would generally result in short-term landscape and visual impacts. This section is indicative and based on the currently available construction information. The Proposed Scheme is likely to result in impacts on the landscape and visual resource as a result of:
- Movement of machinery used for earthworks operations, construction of structures, road surfacing and other associated works;
 - Vehicle movements, machinery and materials to and from the site location;
 - Temporary construction compounds;
 - Movement and presence of large machinery including cranes and piling rig;
 - Traffic management operations and additional congestion or changes to vehicle movements;

- Excavation of materials and temporary storage of materials including soil storage heaps, stockpiles of construction materials;
- Construction of Sustainable Drainage Systems (SuDS) drainage ponds;
- Temporary works associated with bridge construction operations;
- Temporary lighting associated with night-time working;

Operation

8.6.3 Potential operational impacts on the landscape and visual resource in the absence of mitigation may result from:

- The change in the perception of landscape character such as the loss of component parts of the landscape and perceived changes to existing views as a result of the Proposed Scheme;
- Landscape and visual change resulting from the loss of existing vegetation;
- The loss of farmland and alteration of field patterns as a result of the loss of field boundaries;
- The change in appearance of landform along the road corridor as a result of the earthworks, introduction of an overbridge, retaining structures and reinforced slopes;
- Increased visibility of road infrastructure, including the introduction of new structures, realigned side roads, signage, barriers and local Non-Motorised User (NMFU) route;
- Changes in the movement and/or visibility of traffic, including at night;
- The presence of a SuDS network and associated fencing; and
- A change to road lighting provision and visibility of vehicle headlights as part of the Proposed Scheme.

Assessment of Potential Impacts

8.6.4 The following provides an overview of the findings of the assessment of potential impacts during construction and at year 1 of operation. The assessment takes account of embedded mitigation, but not secondary measures such as planting. A detailed assessment of potential impacts on each of the identified landscape and visual receptors is provided in Appendix 8.2 - Landscape Character Assessment Tables and Appendix 8.3 - Visual Assessment Tables. A summary of the results of the assessment are provided below, including further details of those which are anticipated to receive moderate or greater, and therefore significant, effects.

Landscape Character

8.6.5 This section should be read in conjunction with the baseline and value description within Section 8.5 and alongside Figure 8.1 'Landscape Designations', Figure 8.2 'Landscape Features' and Figure 8.3 'Landscape Character'. Baseline photography from a range of locations throughout the study area are shown in Figure 8.6 'Viewpoints and Photomontages' and aid an understanding of the baseline landscape.

8.6.6 The assessment identified that the effects to all Landscape Character Areas and Landscape Designations would be slight adverse or neutral during both construction and at Operation (Year 1).

Visual Amenity

8.6.7 This section should be read in conjunction with the baseline and value descriptions within Section 8.5 and alongside the following figures: Figure 8.4 'Zone of Theoretical Visibility', Figure 8.5 'Visual Receptors and Figure 8.6 'Viewpoints and Photomontages'.

- 8.6.8 The assessment identified that the effects to the majority of the visual receptors (viewpoints and routes) would be slight adverse or neutral during both construction and at Operation (Year 1). However, greater effects are anticipated at three viewpoint locations (VP1 – Sheriffhall Mains, VP3 – Summerside, and VP4 – Old Sheriffhall), each of which are described below.

Viewpoint 1: Sheriffhall Mains

- 8.6.9 This viewpoint is located alongside the A6106 North, approximately 130m north of the Proposed Scheme and is representative of residential properties at Sheriffhall Mains and road users on the A6106 North. As identified in the baseline the value of the existing view experienced at Viewpoint 1 is considered to be low.
- 8.6.10 Views from residential properties are considered to be of primary importance and as such the susceptibility to change would be high. Taking account of the low value of this view and the high susceptibility to change, the overall sensitivity is considered to be medium.
- 8.6.11 During construction, potential change would result from foreground views of construction activity, movement of machinery and traffic management associated with the realignment of the A6106. The removal of sections of Poplar trees alongside the A6106 would slightly increase visibility of the existing junction. Activity associated with construction of new road structures and SuDS basins would also be visible occupying a relatively large extent of the view, although would be seen in the context of existing traffic on the A720, A6106 and Sheriffhall Roundabout, and the double line of OHL towers in the foreground.
- 8.6.12 Views of construction activity from most residential receptors at Sheriffhall Mains would be screened by adjacent buildings, boundary walls and intervening vegetation and topography. However, there may be partial views of construction activity along the realigned A6106 from the main farmhouse and more open views from the bungalow property to the south.
- 8.6.13 Sequential views along the A6106 would include some close-range views of construction activity. However, this would appear largely within the context of the existing road network and not change the overall impression of views from this route.
- 8.6.14 Overall considering the extent of the view potentially affected and the existing context of the road network within the view, as well as the short term and temporary nature of construction activity, the magnitude of impact is anticipated to be moderate.
- 8.6.15 Taking account of the medium sensitivity and moderate magnitude of impact, the significance of effect would be **moderate adverse**, and therefore significant, during construction.
- 8.6.16 At Operation (Year 1) the introduction of the Proposed Scheme and particularly the elevated section of the A720 and slip roads would increase the visibility of road infrastructure in views south from the viewpoint location. The loss of mature trees along the A6106 would also slightly increase visibility towards the Proposed Scheme. Additional lighting along the A6106 North and car headlights on the elevated road sections would also increase visibility of the Proposed Scheme from the viewpoint and receptors during hours of darkness.
- 8.6.17 The Proposed Scheme would increase the visibility of road infrastructure and traffic, including at night, in views from this location and at the residential property south of Sheriffhall Mains. The baseline view in this direction includes the A720, A6106 and associated traffic and also prominent OHL towers in the foreground, providing a context to potential change. It is anticipated that the magnitude of impact at Operation (Year 1) would be moderate.

8.6.18 Taking account of the medium sensitivity and moderate magnitude of impact, the significance of effect would be **moderate adverse** at Operation (Year 1). As with construction, the effect at Operation (Year 1) is judged to be significant.

Viewpoint 3: Summerside

8.6.19 This viewpoint is located adjacent to a group of five residential properties at Summerside. As identified in the baseline the value of the existing view experienced at Viewpoint 3 is considered to be low.

8.6.20 Views from residential properties are considered to be of primary importance and as such the susceptibility of change would be high. Taking account of the low value of this view and the high susceptibility to change, the overall sensitivity is considered to be medium.

8.6.21 As outlined in the baseline and shown on Figure 8.7 'Summerside Visual Receptor Plan' the viewpoint is located within a part of the rear garden of one of the properties (Summerside House) in this group of receptors. The location was selected as it has relatively open visibility towards the Proposed Scheme and therefore represents the potential worst-case view. In reality, outward views from the residential properties are generally more restricted, as indicated by Plate 8-1. The following description of potential change initially focuses on the view from the viewpoint location, and then provides details of anticipated change from the residential properties.

8.6.22 During construction from the viewpoint location there would be views of construction activity in the fore and mid ground associated with removal of vegetation, earthworks and installation of new structures and a SuDS pond. Existing vegetation would restrict and filter some views of construction activity from the viewpoint location. However, as a result of the close proximity of construction activity and the relatively wide extent of the available view from the viewpoint location affected, change would be very noticeable and therefore of a major magnitude of impact.

8.6.23 Figure 8.7 'Summerside Visual Receptor Plan' shows the layout of the residential properties at Summerside, the directions of the main views and the locations of trees and woodland which restrict outward views. Two properties in this group are aligned along the A7 North, with views orientated to the northeast across the A7 and therefore including traffic in the foreground. From these properties there would be close-range views of construction activity alongside the A7, including the removal of trees to the north and works to create an improved access to the Summerside properties, although the majority of the remaining works would not be visible. These views would be experienced within the context of existing traffic on the A7. There would be similar changes to views from the cottage closest to the A7. However, these would be seen from an oblique angle as this property is orientated southeast.

8.6.24 Visibility of construction activity from the remaining properties would be largely restricted by the intervening vegetation and boundary walls which surround Summerside. Views south towards construction activity (as described above) at Sheriffhall Roundabout would likely be limited to partial, oblique visibility from two upper floor windows from one property.

8.6.25 Taking a worst-case approach from the residential properties the greatest level of change would be experienced from the two northernmost residential properties. Although construction activity would be in the foreground of views from these properties it would be experienced in the context of existing traffic on the A7 and would be temporary and of short duration. It is therefore considered that the magnitude of impact from these properties would be moderate during construction.

8.6.26 From the viewpoint location the significance of effect would be **large adverse** during construction. However, from the residential properties the magnitude of impact is anticipated to be lower and therefore the significance of effect would be **moderate adverse** during construction. Effects on the viewpoint location and most affected residential receptors would therefore be significant.

- 8.6.27 At year 1 of operation the newly created SuDS pond would be visible in the foreground of views from the viewpoint location, with the elevated A720, off slip and roundabout and associated lighting and traffic in the mid ground. The removal of vegetation and increased height of road structures would represent a very noticeable change from this location, resulting in a major magnitude of impact.
- 8.6.28 Views south towards the Proposed Scheme from residential properties at Summerside would largely be screened or heavily filtered by vegetation, reducing the potential magnitude of impact from these locations. From the two northernmost properties there would be close range views of the upgraded A7 North which is largely along the same alignment as the existing road, and also the new access to Summerside, additional street lighting, new footpaths and removal of vegetation to the north of the A7. Removal of vegetation would slightly open up views to the fields beyond allowing more light into the properties. The most visible element in the view, traffic on the A7, would be similar to that experienced in the baseline and therefore the Proposed Scheme would result in a minor magnitude of impact from these properties.
- 8.6.29 From the viewpoint location the significance of effect at Operation (Year 1) would be **large adverse**, and therefore significant. However, as with construction, the magnitude of impact at the residential properties at Summerside would be reduced due to more limited visibility of the Proposed Scheme. The significance of effect at Operation (Year 1) on the residential properties would be **slight adverse**, and therefore not significant.

Viewpoint 4: Old Sheriffhall

- 8.6.30 This viewpoint is located within the rear garden of Sheriffhall House and is representative of views from two residential receptors at Old Sheriffhall. As identified in the baseline the value of the existing view experienced at Viewpoint 4 is considered to be low.
- 8.6.31 Views from residential properties are considered to be of primary importance and therefore susceptibility to change would be High. Taking account of the low value of this view and the high susceptibility to change, the overall sensitivity is considered to be medium.
- 8.6.32 During construction there would be close range views of activity and movement of machinery to form earthworks and new carriageways. This activity would be short term and temporary and visible from the rear of the property but would nevertheless represent a noticeable change. There may also be oblique filtered views of construction activity within the main view to the southeast of this property.
- 8.6.33 From Old Sheriffhall Farmhouse, visibility of construction activity would be more limited. There would be oblique views of activity associated with construction of the SuDS pond to the southeast of the property. However, the main construction activity would occur to the northwest and would be largely screened by adjacent outbuildings.
- 8.6.34 Overall, considering the potential worst case, the temporary and short-term nature of change and the existing context of the A720, the magnitude of impact would be major.
- 8.6.35 Taking account of the medium sensitivity and major magnitude of impact, the significance of effect would be **large adverse**, and therefore significant, during construction.
- 8.6.36 At year 1 of operation the completed A720 and slip roads would be in close proximity to this viewpoint, increasing the visibility of road infrastructure and associated traffic and light. Removal of vegetation would also increase the extent of the view affected, contributing to a noticeable change. The low-level earthworks of the SuDS pond to the southeast would be largely imperceptible from Sheriffhall House, but may be more visible from Old Sheriffhall Farmhouse, representing a limited change.

- 8.6.37 Overall, due to the close proximity of the Proposed Scheme within views from Sheriffhall House, and the increased extent of the view affected the magnitude of impact would be major, and the significance of effect **large adverse**, and therefore significant, at Operation (Year 1).

Cumulative Impacts

- 8.6.38 There have been no cumulative impacts identified within this topic assessment. Chapter 19 - Cumulative Assessment assesses the potential for cumulative impacts resulting from the combination of impacts which have been identified as part of this ES which are likely to result in new or different likely significant effects, or an effect of greater significance than any one of the impacts on their own. It also considers impacts which in combination within impacts associated with other proposed development, are likely to result in an effect of greater significance, or a new or different likely significant effect, than the Proposed Scheme in isolation.

8.7. Mitigation

- 8.7.1 This section considers the approach to mitigation specific to the landscape and visual resource. Mitigation considers best practice, legislation, guidance and professional experience. Landscape and visual mitigation is concerned with mitigation of likely significant adverse impacts. The design of the landscape mitigation plan has been developed in accordance with Fitting Landscapes: Securing more Sustainable Landscapes (Transport Scotland, 2014), DMRB Volume 10 (Highways Agency, et al., 2001) and Planning Advice Note (PAN) 1/2013: Environmental Impact Assessment (Scottish Government, 2013).

- 8.7.2 Landscape and visual mitigation fall into three primary categories:

- Prevention: avoidance of the loss of significant landscape elements through the design of the Proposed Scheme to achieve a best fit horizontal and vertical alignment;
- Reduction: lessening of those adverse impacts that cannot be eliminated by prevention (e.g. roadside mounding and planting to integrate with surrounding landform and landscape); and
- Offsetting: provision of alternative or compensatory measures where appropriate and feasible (e.g. replacing woodland where appropriate).

Embedded Mitigation

- 8.7.3 Through the DMRB Stage 3 iterative design process, environmental considerations informed the developing design and contributed to the inclusion of key elements of the design. These aspects have been defined as 'embedded mitigation' and, where they are included in the Proposed Scheme design, they are considered within the context of the impact assessment as providing mitigation to avoid or reduce environmental impacts.

- 8.7.4 With respect to landscape considerations in this chapter, the relevant aspects of project specific embedded (primary) mitigation measures include:

- Proposed Scheme extents have been minimised as far as possible to reduce land take and allow greater retention of existing trees, hedgerows and other landscape features;
- Proposed Scheme is largely within the existing road corridors and therefore minimises spread of influence to new areas/landscapes;
- Preliminary form of cutting and embankment slopes adjoining the A720 mainline have been designed with the involvement of Landscape Architects. The embankments and cutting slopes have been designed to be 1:3 or less, where possible. All slopes are to be graded out at the toe and rounded off at the top and variable gradients introduced where possible to give a more natural appearance;

- Design and finish of various structures and elements of the scheme to be of a high quality and informed by the Landscape Objectives (Appendix 8.4);
- Sustainable urban drainage system (SuDS) basins have been designed in conjunction with Landscape Architects, Ecologists and input from Archaeologists to reflect local landscape characteristics and enhance existing wetland areas where possible;
- Retention of existing stone walls wherever possible. Where walls are to be removed, stone set aside for reuse and walls rebuilt;
- Lighting minimised to key junctions (at Sheriffhall Roundabout) and slip roads to reduce potential landscape and visual effects while also meeting safety requirements; and
- Construction programme to be kept to the minimum practicable time to reduce the duration of any landscape and visual impacts and areas will be cleared for construction as close as possible to works commencing and top-soiling, reseeding and planting shall be undertaken as soon as practicable after sections of work are complete.

Additional (Secondary) Mitigation

- 8.7.5 Additional landscape mitigation measures have been developed to further reduce or minimise likely long-term residual effects following the implementation of embedded (primary) landscape mitigation measures. In addition to retention of screen planting, measures are proposed to screen views from sensitive receptors and to further assimilate the Proposed Scheme into the receiving environment.
- 8.7.6 Additional mitigation measures are shown in Figure 8.8 'Proposed Landscape Mitigation Measures' and Figure 8.9 'Illustrative Sections'. Further detailed design of some of the elements is likely to be required at detailed design stage to ensure mitigation of effects, enhancement of landscape fit and creation of a strong sense of place and high quality NMU experience.
- 8.7.7 Additional mitigation measures include:
- Locations of construction compounds to be selected in order to minimise potential landscape and visual impacts by minimising area required, avoiding the loss of trees and hedgerows, and siting to avoid visibility from nearby residential properties;
 - Existing trees and hedgerows to be retained as far as possible and suitable protection put in place. A tree survey to BS: 5837 2012 and tree retention and protection plan shall be undertaken prior to construction to inform detail design;
 - Soft landscape design of the highway environment including bespoke grass seed mixes, shrub, hedgerow, scattered trees and woodland screen planting includes evergreen native species to ensure year-round colour and interest and provide cohesive legible unifying elements to design;
 - Reinforced roadside hedgerow and hedgerow trees along A7 and A6106 North, within the Proposed Scheme boundary, to enhance and be in keeping with the existing field patterns and landscape character;
 - Undertake advance planting where possible to ensure mitigation benefits are achieved at earliest opportunity;
 - Minimise the need for road furniture elements, such as signs or barriers as far as practical, and where possible rationalise existing elements;
 - Incorporate planting to SuDS areas, including native species hedgerow to boundary of wetland areas, in addition to any SuDS basin fencing to minimise visual intrusion and maximise landscape fit, in agreement with Scottish Water and SEPA. Use of grasscrete or similar surfacing to SuDS access tracks to help reduce visibility and improve landscape fit of these elements;
 - Development of a high quality hard and soft materials palette which should follow guidance set out in Appendix 8.4 - Landscape Objectives; and

- The landscape objectives and design ideas set out in Appendix 8.4 - Landscape Objectives should be further refined as part of the preparation of the Employer's Requirements, with further design guidance provided for a range of features, including:
 - Structural Finishes;
 - Subways;
 - Lighting and Signage;
 - Surfaces;
 - Dry Riverbed;
 - Landform and Slope Treatment; and
 - Soft Landscape.

Summary of Mitigation

- 8.7.8 The following table, Table 8-13 'Summary of Landscape and Visual Mitigation Measures', provides a summary of the land and visual mitigation measures proposed. This table is also included within Chapter 20 – Schedule of Environmental Commitments which will be used to inform the commitments in the contract document.

Table 8-13 Summary of Landscape and Visual Mitigation Measures

Mitigation Item	Location/Approximate Chainage	Timing of Measure	Description	Mitigation Purpose/Objective	Specific Consultation or Approval Required	Potential Monitoring Requirements
LV-1	Throughout Proposed Scheme	Construction	The construction programme will be kept to the minimum practicable time to reduce the duration of any landscape and visual impacts and areas will be cleared for construction as close as possible to works commencing and top-soiling, reseeding and planting shall be undertaken as soon as possible after sections of work are complete. Phasing of construction to prevent consolidation of soil for example at SUDS basins/swales.	To reduce the duration of any landscape and visual impacts. Advance planting to ensure mitigation benefits are achieved sooner.	Programme and any advanced works should be agreed with Transport Scotland (TS).	None Required
LV-2	Throughout Proposed Scheme	Pre- Construction/Construction	Locations of construction compounds to be selected in order to minimise potential landscape and visual impacts by minimising area required, avoiding the loss of trees and hedgerows, and siting to avoid visibility from nearby residential properties	To reduce landscape and visual effects resulting from construction compounds	Siting of compounds to be agreed with TS	None required
LV-3	Throughout Proposed Scheme	Pre- Construction/Construction	Woodland, tree and hedgerow planting to be planted on road embankments and along boundaries, and amenity planting to be incorporated alongside NMU routes. The detailed design will comply with the Landscape Mitigation design as detailed in Figure 8.8 'Proposed Landscape Mitigation Measures'.	To help minimise visual effect and help tie the scheme into the surrounding landscape. To unify the Proposed Scheme and create high quality public realm/place making. To increase landscape and visual amenity and deliver increased biodiversity benefits.	Detailed landscape design to be agreed and approved by TS.	Growth and quality of planting to be monitored for first 5 years.
LV-4	Throughout Proposed Scheme	Pre-Construction/Construction Design	Existing trees and hedgerows to be retained as far as possible and suitable protection put in place. A tree survey to BS: 5837 2012 and tree retention and protection plan shall be undertaken prior to construction to inform detail design.	Retain existing woodland and hedgerows, as far as possible. To help restrict the visual envelope and minimise the loss of landscape features.	Local Authorities and SNH as necessary.	None required.
LV-5	Throughout Proposed Scheme	Pre-Construction/Construction Design	Retain existing stone walls wherever possible. Where removal is necessary to facilitate	To minimise the loss of key landscape features.	None Required	A photographic record of existing stonewalls shall be undertaken and any

Mitigation Item	Location/Approximate Chainage	Timing of Measure	Description	Mitigation Purpose/Objective	Specific Consultation or Approval Required	Potential Monitoring Requirements
			construction and where the final scheme allows, rebuild stone walls using existing stone.			section of removal of stone walls set aside for reuse/to be rebuilt.
LV-6	Throughout Proposed Scheme	Design	Minimise the need for road furniture elements, such as signs or barriers as far as practical, and where possible rationalise existing elements.	To minimise visual intrusion.	None Required	None Required.
LV-7	Throughout Proposed Scheme	Design and Construction	Where possible all embankments and cutting slopes should be 1:3 or less and graded out at the toe and rounded off at the top. Variable gradients should be introduced where possible to give a more natural appearance.	To integrate embankments and cutting into the surrounding landscape.	None Required	None Required.
LV-8	SuDS Features	Design and Construction	SuDS basins and features to be designed to reflect local landscape characteristics and appear natural. Hedgerows to be used as boundary rather than tall fencing, where possible.	To integrate drainage features into the surrounding landscape.	SEPA and Scottish Water	None Required

8.8. Residual Effects

- 8.8.1 Residual effects are those which remain following the application of the proposed secondary mitigation measures identified in Section 8.7 and shown on Figure 8.8 'Proposed Landscape Mitigation Measures'. As secondary mitigation measures largely consist of planting, it is considered that the residual effects at Construction and Operation (Year 1) would be the same as those reported in Section 8.6 'Potential Impacts' and so they are not repeated here. The following section therefore focuses on reporting residual effects assessed at Operation (Year 15) in summer when planting would be sufficiently mature to demonstrate the mitigation intent. In reality the residual level of effect during operation would reduce over time as mitigation planting establishes and matures and therefore the assessment of effects at Operation (Year 1) and Operation (Year 15) should be considered as a snapshot in time between which levels of effect will gradually change.
- 8.8.2 A detailed assessment of residual effects on landscape character and visual amenity at Operation (Year 15) is set out in Appendix 8.2 - Landscape Character Assessment Tables and Appendix 8.3 - Visual Assessment Tables. A summary of the results of the assessment is provided below, with further details of those which are anticipated to receive moderate or greater effects.

Landscape Character

- 8.8.3 At year 15 of operation, once mitigation planting has established and begun to mature, effects on all of the identified landscape designations and all but one of the LCAs (Danderhall Settled Farmland) would be reduced to **neutral**. The assessment has identified that significance of effect on the Danderhall Settled Farmland LCA would be **slight adverse** at year 15 and in the long term.

Visual Amenity

- 8.8.4 At year 15 of operation, once mitigation planting has established and begun to mature, effects on the majority of the identified visual receptors would be **neutral to slight adverse**. The exception to this is visual receptors at VP3 – Summerside, as described below.

Viewpoint 3: Summerside

- 8.8.5 As identified in Paragraph 8.6.20 the sensitivity to change of this receptor is considered to be medium.
- 8.8.6 At year 15 proposed mitigation planting would help reduce visibility of the Proposed Scheme slightly and would also help other elements to better fit into the landscape. However, the SuDS pond would be visible in the foreground of views from the viewpoint location, with the elevated A720, off slip and roundabout and associated lighting and traffic in the mid ground. As at year 1, the increased height of the road structures would represent a very noticeable change from this location, resulting in a major magnitude of impact.
- 8.8.7 As with year 1, views south towards the Proposed Scheme from residential properties at Summerside would largely be screened or heavily filtered by vegetation, reducing the potential magnitude of impact from these locations. The upgraded A7 North, new access to Summerside, additional lighting and new footpaths would be visible in the foreground from the two northernmost properties. The most visible element, traffic on the A7, would be similar to that experienced in the baseline and therefore the Proposed Scheme would result in a minor magnitude of impact from these properties.
- 8.8.8 From the viewpoint location the significance of effect at Operation (Year 15) would be **large adverse**, which is considered to be significant. However, as with construction and year 1, the magnitude of impact at the residential properties at Summerside would be reduced due to more limited visibility of the Proposed Scheme. The significance

of effect at Operation (Year 15) on the residential properties would be slight adverse, which is considered to be not significant.

Summary of Residual Effects

8.8.9 The following table, Table 8-14 'Potential Landscape and Visual Construction and Operation Impacts and Residual Effects' provides a summary of the pre-mitigation construction and operation impacts, mitigation measures and residual effects that have been described within this chapter.

Table 8-14 Potential Landscape and Visual Construction and Operation Impacts and Residual Effects

Receptor	Predicted Impacts	Sensitivity of Receptor	Magnitude of Impact	Significance of Effect	Mitigation Measures	Residual Effects
Landscape Designations						
North Esk Valley SLA						
Construction and Operation	The prevalence of woodland throughout this SLA, and particularly along the northern edge, coupled with the valley landform limits the potential for indirect change. There may be some localised impression of construction activity from parts of this SLA. However, this would be short term, temporary and would have little, if any, influence on the character or special qualities of this landscape. Similarly, at Operation there is little potential for any perceptible change to the character or special qualities of this SLA.	High	Negligible	Neutral	<ul style="list-style-type: none"> Retain and protect existing vegetation and other landscape features, such as stone walls, where possible; Careful siting of construction compounds, material store and other temporary structures; and Incorporate woodland planting along the route corridors, particularly where on embankment. 	Neutral
Dalkeith House (Palace) GDL						
Construction and Operation	The Dalkeith House (Palace) GDL includes considerable policy woodland along the northern and western boundaries, restricting potential outward views. There is therefore little, if any, potential for indirect change to the character of this designation at Construction or Operation.	High	Negligible	Neutral	<ul style="list-style-type: none"> Retain and protect existing vegetation and other landscape features, such as stone walls, where possible; Careful siting of construction compounds, material store and other temporary structures; and Incorporate woodland planting along the route corridors, particularly where on embankment. 	Neutral
The Drum GDL and SLA – See Drum Estate Landscape LCA below						
Landscape Character						
Danderhall Settled Farmland LCA						
Construction	<p>Construction would include an increased level of activity within this LCA. Direct change would include temporary surfacing, landform and structures.</p> <p>Indirect change would be experienced over a slightly larger area and would result from increased activity and movement, temporary construction compounds, storage of materials, lighting and traffic management.</p> <p>The construction phase is anticipated to be completed within 28 months, and therefore potential change resulting from construction would be of short duration.</p>	Low	Moderate	Slight Adverse	<p>Embedded Mitigation:</p> <ul style="list-style-type: none"> Minimising scheme extents and therefore reducing direct change and loss of existing features; Retain and protect existing vegetation and other landscape features, such as stone walls, where possible; Construction programme to be kept to the minimum duration and clearing works to be undertaken as close as possible to main works starting; and Grade out and round off embankment and cutting slopes, and introduce variable gradients to give more natural appearance; SuDS basins designed to appear as natural as possible and reflect the local landscape characteristics; and 	Slight Adverse

Receptor	Predicted Impacts	Sensitivity of Receptor	Magnitude of Impact	Significance of Effect	Mitigation Measures	Residual Effects
	The Proposed Scheme would result in localised intensive change within the site area and immediate surroundings with more limited change to the character of other parts of the LCA during construction.				<ul style="list-style-type: none"> Extent of street lighting minimised. 	
Operation	<p>Direct change as a result of loss or fragmentation of existing landscape features and introduction of new landform and structures.</p> <p>Indirect change would be a result of loss of vegetation, introduction of new structures, increased height of the A720 and associated traffic and additional lighting. There may also be an increased perception of traffic, including lights at night, on the roads network.</p> <p>Proposed mitigation planting would provide compensation for the loss of existing vegetation and provide a level of screening of the Proposed Scheme. This would reduce the extent and level of potential impacts at Year 15 and in the long term.</p>		Moderate (Year 1)	Slight Adverse (Year 1)	<p>Secondary Mitigation:</p> <ul style="list-style-type: none"> Careful siting of construction compounds, material store and other temporary structures to avoid loss of landscape features and minimise land-take; Retain existing trees and hedgerows as far as possible and put protection in place to avoid damage during construction; Incorporate woodland planting along the route corridors, particularly where on embankment; Incorporate hedgerows along roadsides and field boundaries to reinforce landscape characteristics; Incorporate planting to SuDS areas and avoid need for SuDS basin fencing to minimise visual intrusion and maximise landscape fit; Mitigation planting and seeding undertaken as soon as possible following the completion of each phase of construction and undertake advanced planting where possible; and Minimise visual clutter from ancillary elements (barriers, lighting, signage etc) as far as possible. 	Slight Adverse (Year 15)
Melville Nurseries LCA						
Construction	Construction would include an increased level of activity within a localised part of this LCA. Direct change would include the removal of small areas of trees and vegetation and changes to landform along the A7 and A6106. Vegetation removal would also slightly increase indirect effects on this LCA as a result of increased activity being apparent in adjacent areas. However, indirect change would be largely restricted by existing woodland blocks south of the A720 which provide containment for much of the LCA.	Low	Minor	Slight Adverse	<p>Embedded Mitigation:</p> <ul style="list-style-type: none"> Minimising scheme extents and therefore reducing direct change and loss of existing features; Retain and protect existing vegetation and other landscape features, where possible, including at Lugton Bogs; Construction programme to be kept to the minimum duration and clearing works to be undertaken as close as possible to main works starting; and Grade out and round off embankment and cutting slopes, and introduce variable gradients to give more natural appearance; SuDS basins designed to appear as natural as possible and reflect the local landscape characteristics; and Extent of street lighting minimised. 	Slight Adverse

Receptor	Predicted Impacts	Sensitivity of Receptor	Magnitude of Impact	Significance of Effect	Mitigation Measures	Residual Effects
Operation	<p>Direct change would result from minor alteration to the layout of road corridors, temporary loss of trees and the addition of drainage basins. These changes are considered to be in keeping with the existing character of this part of the LCA. Indirect change resulting from new structures, earthworks, the elevated A720 and associated traffic and additional lighting and headlights visible at night, in the adjacent LCA would be limited to a relatively small part of this LCA and would be experienced against the baseline which is heavily influenced by the existing road network.</p> <p>Proposed mitigation planting would provide compensation for the loss of existing vegetation and provide a level of screening of the Proposed Scheme. This would reduce the extent and level of potential impacts at Year 15 and in the long term.</p>		Minor (Year 1)	Slight Adverse (Year 1)	<p>Secondary Mitigation:</p> <ul style="list-style-type: none"> Careful siting of construction compounds, material store and other temporary structures to avoid loss of landscape features and minimise land-take; Retain existing trees and hedgerows as far as possible and put protection in place to avoid damage during construction; Incorporate woodland planting along the route corridors, particularly where on embankment; Incorporate hedgerows along roadsides and field boundaries to reinforce landscape characteristics; Incorporate planting to SuDS areas, including native species hedgerow to boundary of wetland areas at Dean Burn, in place of SuDS basin fencing to minimise visual intrusion and maximise landscape fit; Mitigation planting and seeding undertaken as soon as possible following the completion of each phase of construction and undertake advanced planting where possible; and Minimise visual clutter from ancillary elements (barriers, lighting, signage etc) as far as possible. 	Neutral (Year 15)
<i>Dalkeith Palace LCA</i>						
Construction	<p>Direct change would be as a result of temporary clearance of vegetation to facilitate construction of a SuDS pond to the south of Old Sheriffhall Farm, and new access to the property.</p> <p>Potential indirect change would be a result of increased activity within and outwith this LCA. Due to the heavily wooded nature of this LCA, indirect change would be limited to a small area, with very little or no perception of change to the majority of the area.</p>	High	Minor	Slight Adverse	<p>Embedded Mitigation:</p> <ul style="list-style-type: none"> Minimising scheme extents and therefore reducing direct change and loss of existing features; Retain and protect existing vegetation, particularly adjacent to Old Sheriffhall as far as possible; Construction programme to be kept to the minimum duration and clearing works to be undertaken as close as possible to main works starting; SuDS basins designed to appear as natural as possible and reflect the local landscape characteristics; and Extent of street lighting minimised. 	Slight Adverse
Operation	<p>Direct change including minor works along the A6106 South would be limited and localised to a small area.</p> <p>Potential indirect change resulting from visibility of the Proposed Scheme within an adjacent LCA would be limited to a small area,</p>		Minor (Year 1)	Slight Adverse (Year 1)	<p>Secondary Mitigation:</p> <ul style="list-style-type: none"> Careful siting of construction compounds, material store and other temporary structures to avoid loss of landscape features and minimise land-take; 	Neutral (Year 15)

Receptor	Predicted Impacts	Sensitivity of Receptor	Magnitude of Impact	Significance of Effect	Mitigation Measures	Residual Effects
	<p>with little, if any, perception of change to landscape character of the majority of this area.</p> <p>Proposed mitigation planting would reduce the extent and level of potential impacts at Year 15 and in the long term.</p>				<ul style="list-style-type: none"> Retain existing trees and hedgerows as far as possible and put protection in place to avoid damage during construction; Incorporate woodland planting along the route corridors, particularly where on embankment; Incorporate hedgerows along roadsides and field boundaries to reinforce landscape characteristics; Incorporate planting to SuDS areas, including native species hedgerow to boundary in place of SuDS basin fencing to minimise visual intrusion and maximise landscape fit; Mitigation planting and seeding undertaken as soon as possible following the completion of each phase of construction and undertake advanced planting where possible; and Minimise visual clutter from ancillary elements (barriers, lighting, signage etc) as far as possible. 	
Burdiehouse Farmland LCA						
Construction	<p>During construction, indirect change on this LCA would be as a result of construction activity within an adjacent area and experienced against a baseline already influenced by the A720 road network and other infrastructure. Construction activity on and around the existing road network would be evident in the short term as would the machinery involved in the formation of the elevated section of the A720.</p>	Low	Minor	Slight Adverse	<p>Embedded Mitigation:</p> <ul style="list-style-type: none"> Retain and protect existing vegetation, particularly adjacent to Summerside and along the existing A720, where possible; and Construction programme to be kept to the minimum duration and clearing works to be undertaken as close as possible to main works starting. 	Slight Adverse
Operation	<p>The increased height of a section of the A720 and loss of vegetation alongside the existing road network may locally increase the perception of the road network and traffic from this LCA.</p> <p>Proposed mitigation planting would reduce impression of indirect change and the extent and level of potential impacts at Year 15 and in the long term.</p>		Minor (Year 1)	Slight Adverse (Year 1)	<p>Secondary Mitigation:</p> <ul style="list-style-type: none"> Careful siting of construction compounds, material store and other temporary structures to avoid loss of landscape features; Retain existing trees and hedgerows as far as possible and put protection in place to avoid damage during construction; Incorporate woodland planting along the route corridors, particularly where on embankment and along the A720 West; and Mitigation planting and seeding undertaken as soon as possible following the completion of each phase of construction and undertake advanced planting where possible. 	Neutral (Year 15)

Receptor	Predicted Impacts	Sensitivity of Receptor	Magnitude of Impact	Significance of Effect	Mitigation Measures	Residual Effects
Drum Estate Landscape LCA						
Construction	Policy woodland throughout this LCA limits the potential for indirect change. However, there may be a localised appreciation of short term, temporary construction activity alongside the existing road network from parts of this LCA. This activity would be seen in the context of existing roads, traffic and other infrastructure and as such would have very little, if any, influence on the landscape character of the Drum Estate.	High	Negligible	Neutral	Embedded Mitigation: <ul style="list-style-type: none"> Retain and protect existing vegetation, particularly adjacent to Summerside and along the existing A720, where possible; and Construction programme to be kept to the minimum duration and clearing works to be undertaken as close as possible to main works starting. 	Neutral
Operation	<p>Potential indirect change would be limited to an increased impression of traffic on parts of the road network. As with construction, this would be limited to localised areas and experienced in the context of existing road infrastructure and traffic.</p> <p>Proposed mitigation planting would further reduce potential indirect change at Year 15 and in the long term.</p>		Negligible	Neutral	Secondary Mitigation: <ul style="list-style-type: none"> Careful siting of construction compounds, material store and other temporary structures to avoid loss of landscape features; Retain existing trees and hedgerows as far as possible and put protection in place to avoid damage during construction; Incorporate woodland planting along the route corridors, particularly along the A720 West; and Mitigation planting and seeding undertaken as soon as possible following the completion of each phase of construction and undertake advanced planting where possible 	Neutral
Visual Impacts - Viewpoints						
Viewpoint 1 – Sheriffhall Mains						
Construction	Views of the Proposed Scheme would include construction activity related to the rerouting of the A6106 North in relatively close proximity. The removal of sections of Poplar trees alongside the A6106 would slightly increase visibility of the existing junction. Activity associated with construction of new road structures and SuDS basins would also be visible occupying a relatively large extent of the view, although would be seen in the context of existing traffic on the A720, A6106 and Sheriffhall Roundabout, and the double line of OHL towers in the foreground.	Medium	Moderate	Moderate Adverse	Embedded Mitigation: <ul style="list-style-type: none"> Retain and protect existing vegetation as far as possible, particularly west of the existing A6106 North; Construction programme to be kept to the minimum duration and clearing works to be undertaken as close as possible to main works starting; Grade out and round off embankment and cutting slopes, and introduce variable gradients to give more natural appearance; SuDS basins designed to appear as natural as possible and reflect the local landscape characteristics; and Extent of street lighting minimised. 	Moderate Adverse
Operation	The Proposed Scheme would increase the visibility of road infrastructure and traffic, including at night, in views from this location and the residential property south of Sheriffhall Mains. The baseline		Moderate (Year 1)	Moderate Adverse (Year 1)	Secondary Mitigation: <ul style="list-style-type: none"> Careful siting of construction compounds, material store and other temporary structures to avoid loss of planting; 	Neutral (Year 15)

Receptor	Predicted Impacts	Sensitivity of Receptor	Magnitude of Impact	Significance of Effect	Mitigation Measures	Residual Effects
	<p>view in this direction includes the A720, A6106 and associated traffic and also prominent OHL towers in the foreground, providing a context to potential change.</p> <p>Proposed mitigation planting would reduce the extent and level of potential impacts at Year 15 and in the long term.</p>				<ul style="list-style-type: none"> Retain existing trees and hedgerows as far as possible; Incorporate woodland and other planting along the route corridors, particularly where on embankment; Incorporate planting to SuDS areas and avoid need for SuDS basin fencing, to minimise visual intrusion; Mitigation planting and seeding undertaken as soon as possible following the completion of each phase of construction and undertake advanced planting where possible; and Minimise visual clutter from ancillary elements (barriers, lighting, signage etc) as far as possible. 	
Viewpoint 2 - Campend						
Construction	<p>Changes during construction would include an increase in queuing traffic and traffic management along the A7 North within the foreground of views and mid distant visibility of construction activity adjacent to the A720 West. From residential properties there would be oblique views of the construction activity to the south and southwest and this would not interrupt the key focus of distant views toward the Pentland Hills. Visibility is heavily restricted from ground floor windows by the mature hedgerow boundaries of these properties and in some cases by adjacent buildings.</p> <p>Road users would experience some closer range views of construction activity, in particular traffic management and movement of machinery, as well as the removal of a line of Poplar trees to the north of the A7 which would open up views towards construction activity at Sheriffhall Roundabout. However, this change would be for a short duration and be experienced as part of a wider series of transitional views along the A7 North.</p>	Medium	Minor	Slight Adverse	<p>Embedded Mitigation:</p> <ul style="list-style-type: none"> Retain and protect existing vegetation as far as possible, particularly adjacent to Summerside and along the north side of the A720 West; Construction programme to be kept to the minimum duration and clearing works to be undertaken as close as possible to main works starting; and Extent of street lighting minimised. 	Slight Adverse
Operation (Year 1)	<p>Changes to views during operation would include the loss of vegetation along the A720 West and A7 North, increasing visibility of traffic and associated headlights within oblique views to the south and south west, and to a lesser extent, views south east. Lighting would also extend slightly further along the A7 North than the existing situation.</p> <p>Road users would experience some direct views of the proposed road bridges and the loss of poplar tree vegetation at Campend. However, this would be limited to a short duration from close range due to the slight bend in the road before Summerside.</p>		Minor (Year 1)	Slight Adverse (Year 1)	<p>Secondary Mitigation:</p> <ul style="list-style-type: none"> Careful siting of construction compounds, material store and other temporary structures to avoid loss of planting; Retain existing trees and hedgerows as far as possible; Incorporate woodland and other planting along the route corridors, particularly where on embankment and along the A720 West; Mitigation planting and seeding undertaken as soon as possible following the completion of each phase of construction and undertake advanced planting where possible; and 	Neutral (Year 15)

Receptor	Predicted Impacts	Sensitivity of Receptor	Magnitude of Impact	Significance of Effect	Mitigation Measures	Residual Effects
	Proposed mitigation planting would reduce the extent and level of potential impacts at Year 15 and in the long term.				<ul style="list-style-type: none"> Minimise visual clutter from ancillary elements (barriers, lighting, signage etc) as far as possible. 	
Viewpoint 3 - Summerside						
Construction	<p>From the viewpoint location there would be views of construction activity in the fore and mid ground associated with removal of vegetation, earthworks and installation of new structures and a SuDS basin. Existing vegetation would restrict and filter some views of construction activity from the viewpoint location.</p> <p>Outward views from the residential properties are generally more restricted. Views from the properties themselves are heavily restricted and/or orientated east towards the A7. There would be close range views of construction activity alongside the A7 from three properties, with views from the remaining receptors to the south and east restricted by intervening vegetation and boundary walls.</p>	Medium	<p>Major (viewpoint location)</p> <p>Moderate (residential properties)</p>	<p>Large Adverse (viewpoint location)</p> <p>Moderate Adverse (residential properties)</p>	<p>Embedded Mitigation:</p> <ul style="list-style-type: none"> Retain and protect existing vegetation as far as possible, particularly adjacent to Summerside and along the north side of the A720 West; Construction programme to be kept to the minimum duration and clearing works to be undertaken as close as possible to main works starting; and Design and finish of various structures and elements of the scheme to be of a high quality; and Extent of street lighting minimised 	<p>Large Adverse (viewpoint location)</p> <p>Moderate Adverse (residential properties)</p>
Operation	<p>The newly created SuDS pond would be visible in the foreground from the viewpoint location, with the elevated A720, off slip and roundabout and associated lighting and traffic in the mid ground. The removal of vegetation and increased height of road structures would represent a very noticeable change from this location.</p> <p>Views south towards the Proposed Scheme from residential properties would largely be screened or heavily filtered, reducing the potential magnitude of impact from these locations. From the northernmost properties there would be close range views of the upgraded A7 North and also the new access to Summerside, additional street lighting, new footpaths and removal of vegetation to the north of the A7. The most visible element, traffic on the A7, would be similar to that experienced in the baseline.</p> <p>Proposed mitigation planting would help slightly reduce the extent of visibility of the Proposed Scheme from the viewpoint location at Year 15. However, the level of impacts from both the viewpoint location and the residential properties would be the same as at Year 1.</p>		<p>Major (viewpoint location, Year 1)</p> <p>Minor (residential properties, Year 1)</p>	<p>Large Adverse (viewpoint location, Year 1)</p> <p>Slight (residential properties, Year 1)</p>	<p>Secondary Mitigation:</p> <ul style="list-style-type: none"> Careful siting of construction compounds, material store and other temporary structures to avoid loss of planting; Retain existing trees and hedgerows as far as possible; Incorporate woodland and other planting along the route corridors, particularly where on embankment; Incorporate planting to SuDS areas and avoid need for SuDS basin fencing, to minimise visual intrusion; Mitigation planting and seeding undertaken as soon as possible following the completion of each phase of construction and undertake advanced planting where possible; and Minimise visual clutter from ancillary elements (barriers, lighting, signage etc) as far as possible 	<p>Large Adverse (viewpoint location, Year 15)</p> <p>Slight Adverse (residential properties, Year 15)</p>
Viewpoint 4 - Old Sheriffhall						
Construction	From Sheriffhall House there would be close range views of construction activity such as the movement of machinery to form earthworks and new carriageways. This activity would be short term and temporary to the rear of the property but would nevertheless	Medium	Major	Large Adverse	<p>Embedded Mitigation:</p> <ul style="list-style-type: none"> Retain and protect existing vegetation as far as possible, particularly to the southwest of these properties; 	Large Adverse

Receptor	Predicted Impacts	Sensitivity of Receptor	Magnitude of Impact	Significance of Effect	Mitigation Measures	Residual Effects
	<p>represent a noticeable change. There may also be oblique filtered views of construction activity within the main view to the southeast of this property.</p> <p>From Old Sheriffhall Farmhouse, visibility of construction activity would be more limited. There would be oblique views of activity associated with construction of the SUDS pond to the southeast of the property. However, the main activity would occur to the northwest and would be screened by adjacent outbuildings.</p>				<ul style="list-style-type: none"> Construction programme to be kept to the minimum duration and clearing works to be undertaken as close as possible to main works starting; and Careful siting of construction compounds, material store and other temporary structures. 	
Operation	<p>The completed A720 and slip roads would be in close proximity to this viewpoint, increasing the visibility of road infrastructure and associated traffic including headlights and road lighting. Removal of vegetation would also increase the extent of the view affected. The low-level earthworks of the SuDS pond to the southeast would be largely imperceptible from Sheriffhall House, but may be more visible from Old Sheriffhall Farmhouse, representing a limited change.</p> <p>Proposed mitigation planting would reduce the extent and level of potential impacts at Year 15 and in the long term.</p>		Major (Year 1)	Large Adverse (Year 1)	<p>Secondary Mitigation:</p> <ul style="list-style-type: none"> Careful siting of construction compounds, material store and other temporary structures to avoid loss of planting; Retain existing trees and hedgerows as far as possible; Incorporate woodland and other planting along the route corridors, particularly where on embankment; Incorporate planting to SuDS areas and avoid need for SuDS basin fencing, to minimise visual intrusion; Mitigation planting and seeding undertaken as soon as possible following the completion of each phase of construction and undertake advanced planting where possible; and Minimise visual clutter from ancillary elements (barriers, lighting, signage etc) as far as possible. 	Slight Adverse (Year 15)
Viewpoint 5 - Lasswade to Shawfair Shared Path						
Construction	Construction activity along parts of the A7 and A720, north and west of Sheriffhall Roundabout would be visible within the distance and seen in the context of existing OHL towers, buildings and traffic on the A7 and A720.	Medium	Minor	Slight Adverse	<p>Embedded Mitigation:</p> <ul style="list-style-type: none"> Retain and protect existing vegetation as far as possible, particularly adjacent to Summerside and along the north side of the A720 West; Construction programme to be kept to the minimum duration and clearing works to be undertaken as close as possible to main works starting; and Extent of street lighting minimised. 	Slight Adverse
Operation	The increased height of a section of the A720 in combination with the removal of areas of vegetation would result in a small increase in visibility of the road network and associated traffic, headlights and lighting from this viewpoint. This change would occupy a small part of the overall view which is already influenced by infrastructure.		Minor (Year 1)	Slight Adverse (Year 1)	<p>Secondary Mitigation:</p> <ul style="list-style-type: none"> Careful siting of construction compounds, material store and other temporary structures to avoid loss of planting; Retain existing trees and hedgerows as far as possible particularly along the A720 West and around Summerside; 	Neutral (Year 15)

Receptor	Predicted Impacts	Sensitivity of Receptor	Magnitude of Impact	Significance of Effect	Mitigation Measures	Residual Effects
	Proposed mitigation planting would reduce the extent and level of potential impacts at Year 15 and in the long term.				<ul style="list-style-type: none"> Incorporate woodland and other planting along the route corridors, particularly where on embankment and along the A720 West; Mitigation planting and seeding undertaken as soon as possible following the completion of each phase of construction and undertake advanced planting where possible; and Minimise visual clutter from ancillary elements (barriers, lighting, signage etc) as far as possible. 	
Viewpoint 6 - Elginhaugh Farm Pub and Restaurant						
Construction	Construction activity would be visible to the east along the A7 and north along the A720. Views north are heavily restricted by an intervening woodland belt and views east are already influenced by traffic on the A7.	Low	Minor	Slight Adverse	Embedded Mitigation: <ul style="list-style-type: none"> Retain and protect existing vegetation as far as possible, particularly adjacent to the A7 South; Construction programme to be kept to the minimum duration and clearing works to be undertaken as close as possible to main works starting; and Extent of street lighting minimised. 	Slight Adverse
Operation	Views east would include traffic on the A7 and would not present any discernible change from the existing view. To the north, views towards the Proposed Scheme would be heavily filtered and screened by woodland and therefore change would be very limited and largely imperceptible. Proposed mitigation planting would further reduce the extent and level of potential impacts.		Negligible	Neutral	Secondary Mitigation: <ul style="list-style-type: none"> Careful siting of construction compounds, material store and other temporary structures to avoid loss of planting; Retain existing trees and hedgerows as far as possible, particularly along the A7 South; Incorporate woodland and other planting along the route corridors, particularly where on embankment; Mitigation planting and seeding undertaken as soon as possible following the completion of each phase of construction and undertake advanced planting where possible; and Minimise visual clutter from ancillary elements (barriers, lighting, signage etc) as far as possible. 	Neutral
Viewpoint 7 - Gilmerton Road Roundabout, A7 South						
Construction	Construction activity would be visible within the focus of the view along the existing road corridor. These changes take place within the context of the existing road and therefore would not be uncharacteristic. Construction activity on the raised section of the A720 may increase the perception of infrastructure in the view to a limited degree and may partially restrict distant views to the Firth of Forth.	Low	Minor	Slight Adverse	<ul style="list-style-type: none"> Retain and protect existing vegetation as far as possible, particularly adjacent to the A7 South; Construction programme to be kept to the minimum duration and clearing works to be undertaken as close as possible to main works starting; and Extent of street lighting minimised. 	Slight Adverse

Receptor	Predicted Impacts	Sensitivity of Receptor	Magnitude of Impact	Significance of Effect	Mitigation Measures	Residual Effects
Operation	<p>Increased visibility of the A720 and associated traffic due to the increased height of the carriageway and potential removal of vegetation. Visibility partially restricted by woodland and focused along the A7 road corridor. This part of the views is already heavily influenced by infrastructure, signage and traffic.</p> <p>Proposed mitigation planting would further restrict visibility of the Proposed Scheme, reducing the impression of change to the view.</p>		Minor	Slight Adverse	<p>Secondary Mitigation:</p> <ul style="list-style-type: none"> Careful siting of construction compounds, material store and other temporary structures to avoid loss of planting; Retain existing trees and hedgerows as far as possible, particularly along the A7 South; Incorporate woodland and other planting along the route corridors, particularly where on embankment; Incorporate planting to SuDS areas and avoid need for SuDS basin fencing, to minimise visual intrusion; Mitigation planting and seeding undertaken as soon as possible following the completion of each phase of construction and undertake advanced planting where possible; and Minimise visual clutter from ancillary elements (barriers, lighting, signage etc) as far as possible. 	Slight Adverse
Viewpoint 8 - King's Gate, A6106 South						
Construction	<p>Visibility of construction activity would be limited to a short section of this route. For road users travelling along the A6106 South, construction activity would initially appear within oblique views, becoming more direct as the road straightens. Overall these changes are short-duration, within an existing context of road infrastructure.</p>	Low	Minor	Slight Adverse	<p>Embedded Mitigation:</p> <ul style="list-style-type: none"> Retain and protect existing vegetation as far as possible, particularly alongside the A6106 South and A720 West; Construction programme to be kept to the minimum duration and clearing works to be undertaken as close as possible to main works starting; and Extent of street lighting minimised. 	Slight Adverse
Operation	<p>View of the Proposed Scheme would be limited to the elevated section of the A720 and associated traffic and the lighting and signage along the A6106. These elements would be visible within a narrow part of the view along the existing A6106 and would therefore represent a limited change.</p> <p>At Year 15 the establishment of landscape mitigation planting may partially reduce visibility of the Proposed Scheme, but the level of effect would remain as at Year 1.</p>		Minor	Slight Adverse	<p>Secondary Mitigation:</p> <ul style="list-style-type: none"> Careful siting of construction compounds, material store and other temporary structures to avoid loss of planting; Retain existing trees and hedgerows as far as possible; Incorporate woodland and other planting along the route corridors, particularly where on embankment; Incorporate planting to SuDS areas and avoid need for SuDS basin fencing, to minimise visual intrusion; Mitigation planting and seeding undertaken as soon as possible following the completion of each phase of construction and undertake advanced planting where possible; and Minimise visual clutter from ancillary elements (barriers, lighting, signage etc) as far as possible. 	Slight Adverse
Viewpoint 9 - Millerhill Embankment						

Receptor	Predicted Impacts	Sensitivity of Receptor	Magnitude of Impact	Significance of Effect	Mitigation Measures	Residual Effects
Construction	<p>From this location views of the Proposed Scheme would include construction activity related to the rerouting of the A6106 North, works along the A720 East and at Sheriffhall Roundabout. Activity would largely be located in excess of 1km and would be seen in the context of existing traffic on both the A720 and A6106 and the double line of OHL towers in the foreground.</p> <p>Views from residential receptors in Millerhill would be more limited due to intervening vegetation and topography, although there may be some open views from upper storey of higher buildings</p>	Medium	Minor	Slight Adverse	<p>Embedded Mitigation:</p> <ul style="list-style-type: none"> Retain and protect existing vegetation as far as possible, particularly adjacent to the A720 East and A6106 North/Campend; Construction programme to be kept to the minimum duration and clearing works to be undertaken as close as possible to main works starting; and Extent of street lighting minimised. 	Slight Adverse
Operation	<p>At operation changes to views would include the increased height of the A720 and associated traffic, signage and lighting infrastructure. The loss of vegetation along a short section of the northern edge of the A720 East will also slightly increase visibility of traffic, including vehicle headlights at night. These changes would be within a small part of the overall views from this location and would be seen in the context of existing views of the A720 and associated traffic.</p> <p>Proposed mitigation planting along the edges of the A720 East and A6106 North would partially screen of the Proposed Scheme, reducing the impression of change at Year 15.</p>		Minor (Year 1)	Slight Adverse (Year 1)	<p>Secondary Mitigation:</p> <ul style="list-style-type: none"> Careful siting of construction compounds, material store and other temporary structures to avoid loss of planting; Retain existing trees and hedgerows as far as possible, particularly along the A720 East; Incorporate woodland and other planting along the route corridors, particularly where on embankment; Mitigation planting and seeding undertaken as soon as possible following the completion of each phase of construction and undertake advanced planting where possible; and Minimise visual clutter from ancillary elements (barriers, lighting, signage etc) as far as possible. 	Neutral (Year 15)
Viewpoint 10 - A772 Overbridge, Gilmerton Junction						
Construction	<p>Construction would be visible in the distance to the east in views along the existing A720. Vegetation along the existing embankments would provide screening of much of the low-level activity except at the westernmost extent of the works. Removal of existing vegetation may slightly increase visibility of the works and traffic along the A720.</p>	Low	Minor	Slight Adverse	<p>Embedded Mitigation:</p> <ul style="list-style-type: none"> Retain and protect existing vegetation as far as possible, particularly adjacent to the A720 West and at Summerside; Construction programme to be kept to the minimum duration and clearing works to be undertaken as close as possible to main works starting; and Extent of street lighting minimised. 	Slight Adverse
Operation	<p>At operation there is likely to be partial visibility of the Proposed Scheme as a result of loss of vegetation along the A720 West and the increased height of the carriageway at Sheriffhall Roundabout. This change would be relatively distant and seen in the context of the A720 corridor which currently has a strong influence on the view.</p>		Minor (Year 1)	Slight Adverse (Year 1)	<p>Secondary Mitigation:</p> <ul style="list-style-type: none"> Careful siting of construction compounds, material store and other temporary structures to avoid loss of planting; Retain existing trees and hedgerows as far as possible, particularly along the A720 West; Incorporate woodland and other planting along the route corridors, particularly where on embankment; 	Neutral (Year 15)

Receptor	Predicted Impacts	Sensitivity of Receptor	Magnitude of Impact	Significance of Effect	Mitigation Measures	Residual Effects
	At Year 15 proposed mitigation planting would reduce the potential visibility such that there would be very little appreciation of change from the baseline.				<ul style="list-style-type: none"> Mitigation planting and seeding undertaken as soon as possible following the completion of each phase of construction and undertake advanced planting where possible; and Minimise visual clutter from ancillary elements (barriers, lighting, signage etc) as far as possible. 	
Visual Impacts - Routes						
Core Path (4-8) 'The Kaims'						
Construction	Occasional views through gaps in planting towards construction activity associated with the rerouting of the A6106 North and works along the A720 East beyond. Construction activity would result in a small temporary and short-term change, occupying a limited part of glimpsed and heavily filtered views from this route	Medium	Minor	Slight Adverse	Embedded Mitigation: <ul style="list-style-type: none"> Retain and protect existing vegetation as far as possible, particularly alongside the A6106 North and A720 East; Construction programme to be kept to the minimum duration and clearing works to be undertaken as close as possible to main works starting; and Extent of street lighting minimised. 	Slight Adverse
Operation (Year 1)	<p>The removal of vegetation would increase visibility of the realigned A6106 and associated traffic and locally increased visibility of additional short sections of the A720. Additional lighting and car headlights along the A6106 would also increase the visibility of the road network during darkness, although views from this route would generally be less important at night.</p> <p>Proposed mitigation planting would reduce the extent and level of potential impacts at Year 15 and in the long term.</p>		Minor (Year 1)	Slight Adverse (Year 1)	Secondary Mitigation: <ul style="list-style-type: none"> Careful siting of construction compounds, material store and other temporary structures to avoid loss of planting; Retain existing trees and hedgerows as far as possible; Incorporate woodland and other planting along the route corridors, particularly where on embankment; Mitigation planting and seeding undertaken as soon as possible following the completion of each phase of construction and undertake advanced planting where possible; and Minimise visual clutter from ancillary elements (barriers, lighting, signage etc) as far as possible 	Neutral (Year 15)
A720 Edinburgh City Bypass						
Construction	Views of construction would be limited to short sections of the A720 on the approach to the existing Sheriffhall Roundabout. There is also likely to be views of traffic management and changes to routing of traffic as construction progresses.	Low	Minor	Slight Adverse	Embedded Mitigation: <ul style="list-style-type: none"> Construction programme to be kept to the minimum duration and clearing works to be undertaken as close as possible to main works starting; and Careful siting of construction compounds, material store and other temporary structures. 	Slight Adverse
Operation	Views would be limited to short sections of the A720 in the immediate vicinity of the upgraded junction. Traffic would be more		Negligible	Neutral	Secondary Mitigation:	Neutral

Receptor	Predicted Impacts	Sensitivity of Receptor	Magnitude of Impact	Significance of Effect	Mitigation Measures	Residual Effects
	<p>elevated and therefore views would be more open than on the existing route.</p> <p>At Year 15 proposed planting would further reduce visibility, with short glimpsed views as traffic passes over bridges or where there are gaps in planting on the embankments</p>				<ul style="list-style-type: none"> Grade out and round off embankment and cutting slopes, and introduce variable gradients to give more natural appearance; Incorporate woodland or scrub planting along the route corridors, particularly where on embankment; Mitigation planting and seeding undertaken as soon as possible following the completion of each phase; and Minimise visual clutter from ancillary elements (barriers, lighting, signage etc.) as far as possible. 	
Borders Railway						
Construction and Operation	Limited to glimpsed views for a very short section of the Proposed Scheme from the railway, which is largely in cutting at this point, restricting outward views. Change would also be seen in passing and for a short duration.	Low	Negligible	Neutral	<p>Embedded and Secondary Mitigation:</p> <ul style="list-style-type: none"> Retain and protect existing vegetation as far as possible, particularly adjacent to the A6106 North and A720 East; Construction programme to be kept to the minimum duration and clearing works to be undertaken as close as possible to main works starting; Careful siting of construction compounds, material store and other temporary structures to avoid loss of planting; Incorporate woodland and other planting along the route corridors, particularly where on embankment; Incorporate planting to SuDS areas and avoid need for SuDS basin fencing, to minimise visual intrusion; Mitigation planting and seeding undertaken as soon as possible following the completion of each phase of construction and undertake advanced planting where possible; and Minimise visual clutter from ancillary elements (barriers, lighting, signage etc) as far as possible. 	Neutral

8.9. Monitoring

- 8.9.1 Following construction, all proposed planting would be maintained and routinely inspected, initially as part of the anticipated 5-year establishment period and subsequently as part of ongoing management. The requirements for maintenance and management of the planting would be set out in the Employers Requirements and in the Landscape Management Plan (LMP) prepared by the Contractor and agreed with TS. These measures would help ensure that all planting establishes and achieves its intended landscape and visual and environmental function and objectives.
- 8.9.2 Monitoring in relation to landscape and visual effects would review and evaluate the effectiveness of mitigation measures, such as planting for screening and landscape integration. Monitoring would be undertaken as part of the initial 5 year establishment period and the results would help to update and adapt the LMP as necessary in order to achieve the planned mitigation. During the routine operation of the scheme, following the end of the establishment period, monitoring would inform updates and adjustments to the LMP which would form part of the overall Environmental Management Plan.

8.10. Compliance with Policies and Plans

- 8.10.1 The following section provides a record of plans and policies where there is a potential compliance or conflict with the Proposed Scheme from a landscape and visual standpoint. The identified policies have been grouped into three common themes, as listed below:

- Designated Landscapes;
- Design Quality and Landscape Character; and
- Trees and Woodland.

Designated Landscapes

- 8.10.2 The landscape assessment has concluded that there would be neutral or no potential effects on all landscape designations during construction and operation (year 1) and (year 15) and therefore the Proposed Scheme is considered to be in compliance with the following policy:

- Edinburgh Local Development Plan, City of Edinburgh Council (November 2016)
 - Policy Env 7 Historic Gardens and Designed Landscapes
 - Policy Env 11 Special Landscape Areas
- Midlothian Local Development Plan, Midlothian Council (November 2017)
 - Policy ENV 6 Special Landscape Areas
 - Policy ENV 20 Nationally Important Gardens and Designed Landscapes

Landscape Character and Design Quality

- 8.10.3 Proposed landscape mitigation measures have been developed with two key objectives: to reduce potential landscape and visual effects; and to create a strong sense of place and a high quality NMU experience.
- 8.10.4 The assessment of residual landscape and visual effects demonstrates that long-term impacts on landscape character resulting from the Proposed Scheme would be minimised, therefore complying with policy relating to landscape protection.

8.10.5 The landscape design team have worked closely with the project engineers and other technical specialists in developing the Proposed Scheme. This has allowed a coordinated approach and optimised design based on transport design standards, landscape design and placemaking principles and habitat creation and enhancement.

8.10.6 The design approach has helped to ensure compliance with policies related to design and landscape protection and enhancement, as listed below:

- National Planning Framework 3 (2014)
- Scottish Planning Policy (2014)
- Fitting Landscapes (2014)
- Strategic Development Plan: SESplan (June 2013)
 - Policy 1B The Spatial Strategy Development Principles
- Edinburgh Local Development Plan, City of Edinburgh Council (November 2016)
 - Policy Des 1 Design Quality and Context
 - Policy Des 3 Development Design- Incorporating and Enhancing Existing and Potential Features
 - Policy Des 4 Development Design- Impact on Setting
 - Policy Des 8 Public Realm and Landscape Design
 - Policy Des 9 Urban Edge Development
- Midlothian Local Development Plan, Midlothian Council (November 2017)
 - Policy Dev 6 Layout and Design of New Development
 - Policy Dev 7 Landscaping in New Development
 - Policy Env 7 Landscape Character
 - Policy RD1 Development in the Countryside

Trees and Woodland

8.10.7 The Proposed Scheme will require the loss of existing roadside planting, including trees and hedgerows. Proposed mitigation measures include retention of existing trees and woodland where possible and introduction of considerable areas of planting to compensate for any loss and provide landscape enhancement. It is therefore considered that the Proposed Scheme, including mitigation measures, would be compliant with the following policy relating to trees and woodland:

- Edinburgh Local Development Plan, City of Edinburgh Council (November 2016)
 - Policy Env 12 Trees
- Midlothian Local Development Plan, Midlothian Council (November 2017)
 - Policy Env 11 Woodland Trees and Hedges

8.11. Statement of Significance

8.11.1 As outlined in Section 8.8, above, at Year 15 of operation one visual receptor (viewpoint location at Summerside) is anticipated to experience a **large adverse** significance of residual effect. A small number of landscape and visual

receptors would experience a slight adverse residual effect, with the majority receiving a neutral residual effect at Year 15 of operation.

8.12. References

- City of Edinburgh Council (2010a) Review of Local Landscape Designations (Adopted January 2010)
- City of Edinburgh Council (2010b) Edinburgh Landscapes Character Assessments (Adopted January 2010)
- City of Edinburgh Council (2016) Edinburgh Local Development Plan (Adopted November 2016)
- Highways England, et al. (2019) Design Manual for Roads and Bridges, LA 104 'Environmental Assessment and monitoring'
- Highways England, et al. (2019) Design Manual for Roads and Bridges, LA 107 'Landscape and Visual Effects'
- Historic Environment Scotland (HES) (N.D. a) Inventory Garden & Designed Landscape: The Drum GDL00356 [Online] Available at: <http://portal.historicenvironment.scot/designation/GDL00356>
- Historic Environment Scotland (HES) (N.D. b) Inventory Garden & Designed Landscape: Dalkeith House (Palace) GDL00128 [Online] Available at: <http://portal.historicenvironment.scot/designation/GDL00128>
- Landscape Institute and Institute of Environmental Assessment and Management (2013) Guidelines for Landscape and Visual Impact Assessment, 3rd Edition – Routledge
- Midlothian Council (2008) Edinburgh Green Belt: Landscape Character Assessment (December 2008)
- Midlothian Council (2017a) Midlothian Local Development Plan (Adopted November 2017)
- Midlothian Council (2017b) Special Landscape Areas Supplementary Guidance (Adopted October 2018)
- Scottish Government (2013) Planning Advice Note (PAN) 1/2013 'Environmental Impact Assessment'
- Scottish Government (2014a) National Planning Framework 3 (NPF3) (Adopted June 2014)
- Scottish Government (2014b) Scottish Planning Policy (SPP) (Adopted June 2014)
- Scottish Natural Heritage (SNH) (1998) The Lothians Landscape Character Assessment
- SESplan (2013) South East Scotland Strategic Development Plan (SDP) (Adopted June 2013)
- SESplan (2016) Proposed South East Scotland Strategic Development Plan (SDP2) (October 2016)
- Transport Scotland (2014) Fitting Landscapes: Securing More Sustainable Landscape (Adopted March 2014)