9 Landscape Effects

9.1 Scope of the Assessment

9.1.1 The objective of this chapter is to establish the significance of the landscape and visual effects associated with the Proposed Scheme, and to identify suitable mitigation measures. The assessment re-evaluates baseline conditions established in the Landscape Effects chapter of the A737 Dalry Bypass DMRB Stage 2 Environmental Assessment (MFJV, 2008) that determined the value and quality of the existing landscape character and sensitivity and the location, type and sensitivity of visual receptors identified as being affected.

Study Area

9.1.2 The study area has been developed using the Stage 2 DMRB Environmental Assessment study area and responds to the final route alignment and project extents as shown on Figures 9.2a-b Baseline Landscape. This has been established following the production of a Theoretical Zone of Visual Influence (TZVI) as detailed in paragraph 9.3.3 based upon bare ground conditions, and an on-site assessment of the visual influence of the scheme (please refer to Figures 9.5a-b Visual Effects Temporary and 9.6a-b Visual Effects Permanent).

9.2 Legislative, Regulatory and Planning Context

North Ayrshire Structure Plan (Adopted 2007)

Policy ENV 1: Landscape Quality

9.2.1 The quality of Ayrshire's landscape and it distinctive local characteristics shall be maintained and enhanced. In providing for new development, particular care shall be taken to conserve those features that contribute to local distinctiveness including:

- settings of communities and buildings within communities;
- patterns of woodland, fields, hedgerows and tree features;
- special qualities of rivers, estuaries and coasts;
- historic landscapes; and
- skylines and hill features, including prominent views.

North Ayrshire Local Plan (Adopted 2005)

9.2.2 The North Ayrshire Local Plan was adopted in November 2005 and provides relevant planning policies for the study area which is shown on Figures 9.3a-b Landscape Appraisal. These relevant policies include:

Policy ENV 17 Urban Fringe and Countryside Development

9.2.3 The Council shall require the provision of substantial structure planting, supplemented by earthworks, if necessary, on any urban edge sites, as identified on the Local Plan Map, and on the categories identified below. Proposals should include appropriate native tree planting, retain any existing natural features and incorporate proposals for a realistic future maintenance scheme.

- (a) any urban edge site, regardless of Class, and including those identified in the Housing Chapter,
- (b) any site falling to be approved along an existing or proposed transport or green corridor,
- (c) any edge of settlement site,
- (d) any countryside development site,
- (e) any existing site in the countryside, where a change of use, extension, or other development is sought.

Policy BE 2 Development Adjacent to Conservation Areas

9.2.4 Proposals for development adjacent to a Conservation Area which have a significant adverse affect on its architectural and historical character and wider setting shall not accord with the Local Plan.

Policy BE 12 Local Landscapes of Historic Interest

9.2.5 The Council shall take account of landscapes identified by the Garden History Society as of local historic interest and of value to the heritage of the area when assessing development proposals in these areas.

North Ayrshire Proposed Local Development Plan Policies

9.2.6 North Ayrshire is currently preparing a Local Development Plan which will replace the existing Local Plan. Modifications were made to the Plan early this year, requiring the Plan to be published, incorporating the changes, as a Modified Plan. The 6 week consultation period for the Modified Plan finished on the 19 October 2012, and the independent examination period began in February 2013. Following further revisions the Modified LDP was submitted to the Scottish Government for examination in June 2013. The following policies from the LDF are relevant to the study area:

Policy HE 5: Historic Landscapes

9.2.7 Proposals for development which would adversely affect historic gardens and designed landscapes included in the Inventory of Gardens and Designed Landscapes in Scotland shall not accord with the LDP.

9.3 Methods of Assessment

General Methods

9.3.1 This assessment has been prepared in accordance with the principles and techniques outlined in DMRB Volume 11 (Environmental Assessment), Section 3, Part 5, *Landscape Effects* and the DMRB Interim Advice Note 135/10 *Landscape and Visual Effects Assessment*.

9.3.2 The Landscape and Visual Impact Assessment methodology has also been developed in line with guidance given in *Guidelines for Landscape and Visual Impact Assessment*, (Third Edition, 2013) published by the Landscape Institute and The Institute of Environmental Assessment; *Landscape Character Assessment Guidance for England and Scotland* (The Countryside Agency and Scottish Natural Heritage, 2002) in order to incorporate the most current and accepted techniques.

9.3.3 Reference has also been made to *Topic Paper 6: Techniques and Criteria for Judging Capacity and Sensitivity* as published by The Countryside Agency and Scottish Natural Heritage and *LVIA Use of Photography and Photomontage in Landscape and Visual Assessment Guidance Note (2011)* published by the Landscape Institute.

9.3.4 The five main steps in the assessment process are:

- Data collection.
- Description of landscape and visual baseline.
- Classification (character and quality).
- Evaluation (value and sensitivity); leading to potential positive/ negative effects.
- Assessment of significance of identified effects.

9.3.5 For the purposes of this assessment the study area is determined by the likely Zone of Visual Influence (ZVI) over which it is considered the proposals could have an effect, i.e. the area of land from which a view of any part of the scheme or Visually Intrusive Highway elements, including its structure and the traffic upon it, could be seen. To establish this, an initial bare ground Theoretical Zone of Visual Influence (TZVI) was produced to illustrate the zone of visual influence of the proposed road, including the height of road traffic. The TZVI was then assessed on site to determine the Zone of Visual Influence (ZVI) – please refer to Figures 9.5a-b Visual Effects Temporary and 9.6a-b Visual Effects Permanent.

9.3.6 Following production of the ZVI, visual receptors were identified and visual effects on these receptors were assessed. Where it was not possible to gain access to the private grounds of individual receptors, particularly residential receptors, impacts on receptors were assessed adjacent to the property boundaries from publicly accessible land. The visual receptors within this assessment include those identified in the Stage 2 assessment and additional receptors identified on site.

9.3.7 Data collection was undertaken by way of desk study supported by field survey. The aim of the desk study was to identify:

- landscape designations;
- landform and topography;
- land use;
- vegetation/landcover (of significance);
- access;
- pattern and scale of landscape;
- landscape character;
- landscape quality;
- landscape features (of historical, cultural or local importance);
- visual receptors; and
- possible mitigation measures.

9.3.8 Site specific information was also gathered by consultation meetings with statutory bodies including Scottish Natural Heritage on the 27th July 2012 and North Ayrshire Council on the 18th September 2012.

9.3.9 The field survey was undertaken as part of the assessment process to confirm the information obtained during the desk study, and to gain any additional in-situ details.

9.3.10 Although the proposed development may be visible to a degree from additional visual receptors, it is considered that any potential visual impacts to these visual receptors would not be significant and therefore would not be included within the assessment.

9.3.11 Public use of open spaces, roads and footpaths was observed during the course of the landscape and visual assessment survey. This has a direct bearing on landscape as a human resource and is taken into account in the evaluation process. Further information relating to public use of the environment is provided within Chapter 14 Effects on All Travellers and Chapter 15 Community and Private Assets.

Landscape Assessment Methods

9.3.12 Landscape assessment consists initially of the collection of baseline data relating to the components, character and scenic quality of the landscape, evaluation of any associated value (national, regional or local) and quality of the landscape and an assessment of the sensitivity of the landscape to change.

9.3.13 The objective of the baseline study is to create a comprehensive audit of those components, features and characteristics of the site and within the surrounding area that contribute to creating a distinctive sense of place and an associated recognisable character, identified as unique landscape character areas. Landscape assessment considers the different aspects of the landscape, which are outlined below:

- **Components** – individual landscape components such as hills, valleys, woods, trees and hedges, ponds, buildings and communication routes (such as electricity and telegraph wires, pylons and masts, etc) which make up the landscape.
- **Features** – prominent elements or landforms of distinction or which are eye catching.
- **Characteristics** – elements, or combinations of elements, that contribute to the particular character of an area (can include intangible characteristics such as tranquillity, wildness and cultural associations).
- **Character** – a distinct, recognisable and consistent pattern of components and characteristics that creates distinctiveness and a sense of place. Areas of similar character can be described and identified on maps (including designated landscapes, conservation areas, and other acknowledged special areas of interest).

9.3.14 In undertaking the assessment, consideration was given to the following factors:

- Experience of the landscape is not only visual, but involves all five senses.
- Data relating to the components of the landscape, its character and quality will include reference to baseline information presented in separate related Chapters of this report (e.g. Nature Conservation and Cultural Heritage).

- The value placed on an area is dependant not only on its inherent scenic quality, but on its situation, rarity and usage.
- Historical and cultural associations may contribute to the value placed on landscape not generally considered to be of visual or other importance.
- Landscapes which, although not of a quality to warrant national or regional designation may be of great local value.

9.3.15 From this, it is possible to determine those aspects of the landscape that may be affected by the development proposals and so consider how that development will fit into the landscape and how any significant effects could be mitigated.

9.3.16 The assessment has been undertaken for two scenarios:

- Short Term (Year 1 winter) – the effects in the winter of the year of opening (maximum effects).
- Long Term (Year 15 summer) – effects considering fully established mitigation planting in the summer of the 15th year after the scheme opens (least effects).

Landscape Character Criteria

Landscape Value

9.3.17 The guidelines stated within SNH 'Landscape Character Assessment Guidance for England and Scotland' recommend the development of thresholds of landscape value and Table 9.1 provides a definition of the criteria used to assess value for the purpose of this study. The analysis of landscape value aims to reflect the perceived value of the landscape at a specific scale, identify the group to which it is important and describe why it is important.

Table 9.1 Criteria for Assessing Landscape Value

Value	Typical criteria	Typical scale	Typical examples	Typical examples
High	Exceptional	High importance and rarity No or very limited potential for substitution	International, National	World Heritage site, National Park, Area of Outstanding Natural Beauty (AONB)
	High	High importance and rarity Limited potential for substitution	National, regional & local	National Park, AONB, National Scenic Area, Areas of Great Landscape Value (AGLV)
Moderate	Medium	Medium importance and rarity Limited potential for substitution	Regional, local	AGLV, Regional Scenic Areas

Value	Typical criteria	Typical scale	Typical examples	Typical examples
	Medium-Low	Medium importance and rarity Some or good potential for substitution	Regional, local	Undesignated but value expressed for instance in demonstrable use
Low	Poor	Low importance and rarity	Local	Areas identified as having some redeeming feature or features and possibly identified for improvement
	Very poor	Low importance and rarity	Local	Areas identified for restoration/ reinstatement

9.3.18 Table 9.1 establishes general guidance on the perceived level of importance. A landscape character area may have international, national, regional and local level planning and environmental designations, which may reinforce the associated value by the general public.

9.3.19 Quantification of landscape 'value' can be attributed to particular characteristics that contribute to a sense of place, the visitor, or user experiences of the landscape.

9.3.20 National scale or publicly recognised/designated/or defined policy areas reflect the perceived value of the landscape to society as a whole. The 'broad brush' nature of any designations as stated within Table 9.1, and their boundaries require more detailed study at a site specific scale. This establishes what is locally important about the affected landscape and to whom it is important.

9.3.21 In addition landscapes that are not of a quality to warrant national or regional designation may be of great local amenity value, in particular natural features, semi-natural vegetation, local parks and gardens in urban areas.

Landscape Quality

9.3.22 Landscape quality is an assessment of the physical state of the landscape, and about its intactness, from functional, visual and ecological perspectives. Areas of similar quality were grouped into the categories of high, medium or low, which in conjunction with value and character help to determine the sensitivity of the landscape and its ability to absorb change. This has informed the mitigation required to assimilate the Proposed Scheme into the existing landscape character.

Landscape Sensitivity

9.3.23 The associated landscape effects of any development are dependent upon the sensitivity of the landscape resource. The sensitivity of the landscape resource and the degree to which a particular landscape can accommodate the type of change arising from a particular development, without detrimental effects on its character, is influenced by the following:

- Existing land use.
- The pattern and scale of the landscape.

- The value placed on the landscape.

9.3.24 The criteria used to determine landscape sensitivity are shown in Table 9.2.

Table 9.2: Landscape Sensitivity

Value	Sensitivity
High	Landscapes which by nature of their character would be unable to accommodate change of the type proposed. Typically these would be; • Of high quality with distinctive elements and features making a positive contribution to character and sense of place. • Likely to be designated, but the aspects which underpin such value may also be present outside designated areas, especially at the local scale. • Areas of special recognised value through use, perception or historic and cultural associations. • Likely to contain features and elements that are rare and could not be replaced e.g.: National Park, AONB
Medium	Landscapes which by nature of their character would be able to partly accommodate change of the type proposed. Typically these would be; • Comprised of commonplace elements and features creating generally unremarkable character but with some sense of place. • Locally designated, or their value may be expressed through non-statutory local publications. • Containing some features of value through use, perception or historic and cultural associations. • Likely to contain some features and elements that could not be replaced.
Low	Landscapes which by nature of their character would be able to accommodate change of the type proposed . Typically these would be; • Comprised of some features and elements that are discordant, derelict or in decline, resulting in indistinct character with little or no sense of place. • Not designated. • Containing few, if any, features of value through use, perception or historic and cultural associations. • Likely to contain few, if any, features and elements that could not be replaced.

Magnitude of Landscape Impacts

9.3.25 Magnitude of impact is the extent and degree to which the landscape resource is modified as a result of development. An evaluation of the magnitude of the impacts on the landscape resource through which the Proposed Scheme passes was carried out through a review of the nature and scale of the change, together with its duration and degree of permanence, using the criteria outlined below in Table 9.3.

Table 9.3: Magnitude of Landscape Impacts

Magnitude of Impact	Criteria for Assessing Landscape Impact
Substantial	Notable change in, or substantial removal or loss of landscape characteristics or features over a wide area or very intense change over a small area.
Moderate	Moderate changes in, or partial loss, removal or modification of landscape characteristics and features.
Slight	Slight change in, or loss of, landscape characteristics, or imperceptible changes in landscape features.
Negligible/None	Virtually no significant changes to landscape characteristics or features.

Significance of Landscape Effects

9.3.26 Significance is not absolute and can only be defined in relation to each development and its location. The two principal criteria determining significance are the scale and or magnitude of the impact measured against the landscape sensitivity of the resource. A higher level of significance is generally attached to large-scale impacts and impacts on sensitive or highly sensitive landscape resources; thus small impacts on highly sensitive landscape resources can be more important than large impacts on less sensitive landscape resources.

9.3.27 Significance thresholds can therefore be determined from different combinations of sensitivity of the landscape receptor and magnitude of impact, which is simplified in Table 9.4. Table 9.5 below provides definitions of significance of landscape effects indicating criteria to establish whether effects are adverse, beneficial or result in no change.

Table 9.4: Significance of Landscape Effect

Resulting Significance of Effect				
Sensitivity of Resource	**Magnitude of Impact**			
	Substantial	**Moderate**	**Slight**	**Negligible/None**
High	Major Effect (significant effect)	Major Effect (significant effect)	Moderate Effect (significant effect)	Minor Effect (not significant)
Medium	Major Effect (significant effect)	Moderate Effect (significant effect)	Minor Effect (not significant)	No change (not significant)
Low	Moderate Effect (significant effect)	Minor Effect (not significant)	Minor Effect (not significant)	No change (not significant)

Table 9.5: Definition of Significance for Landscape Effects

Significance of Effect	Definition of Significance
Major Adverse Effect	The project would: • Be at complete variance with the character (including quality and value) of the landscape. • Cause the integrity of characteristic features and elements to be lost. • Cause a sense of place to be lost.
Moderate Adverse Effect	The project would: • Conflict with the character (including quality and value) of the landscape. • Have an adverse impact on characteristic features or elements. • Diminish a sense of place
Minor Adverse Effect	The project would: • Not quite fit the character (including quality and value) of the landscape. • Be at variance with characteristic features and elements. • Detract from a sense of place.
No Change (Negligible)	The project would: • Maintain the character (including quality and value) of the landscape. • Blend in with characteristic features and elements. • Enable a sense of place to be retained.
Minor Beneficial Effect	The project would: • Complement the character (including quality and value) of the landscape. • Maintain or enhance characteristic features and elements. • Enable some sense of place to be restored.
Moderate Beneficial Effect	The project would: • Improve the character (including quality and value) of the landscape. • Enable the restoration of characteristic features and elements partially lost or diminished as a result of changes from inappropriate management or development. • Enable a sense of place to be restored.
Major Beneficial Effect	The project would: • Greatly enhance the character (including quality and value) of the landscape. • Create an iconic high quality feature and/or series of elements. • Enable a sense of place to be created or greatly enhanced.

Visual Assessment Methods

9.3.28 Visual effects relate closely to landscape effects, but are mainly concerned with changes that arise in the content and character of available views, from identified receptors. Visual assessment concerns people's perception and response to changes in visual amenity. Effects may result from new landscape elements that cause visual intrusion or new features that obstruct views across the landscape as well as loss of existing features. Visual effects can be adverse, beneficial or negligible.

9.3.29 The assessment considers the approximate visibility of the Proposed Scheme when taking into account landform and land cover; identifying principal representative

Photoviewpoints and sensitive visual receptors. The assessment criteria for visual effects is concentrated upon the following:

- Visual Effects (identification of potential sources of effects) - extent to which the road and its traffic would be visible (highlighted as Visually Intrusive Highway, where cuttings/embankments are 4m below/above existing topography) from identified receptors. For locations of receptors refer to Figures 9.5a-b Visual Effects Temporary and 9.6a-b Visual Effects Permanent.
- Sensitivity of visual receptors.
- Magnitude of impact and resulting significance of effect.
- Mitigation – measures by which effects are reduced/ road integrated into landscape setting.

9.3.30 The visual effects of the Proposed Scheme were assessed for the following three scenarios taking into account day and night time effects;

- Construction Stage – the effects during construction (temporary effects).
- Short Term (Year 1 winter) – the effects in the winter of the year of opening (maximum effects).
- Long Term (Year 15 summer) – effects considering fully established mitigation planting in the summer of the 15th year after the scheme opens (minimum effects).

Sensitivity of Visual Receptors

9.3.31 The sensitivity of the visual receptors was assessed by evaluation of a range of factors, including:

- The nature and context of the receptors.
- The expectations of users/receptors (occupants of dwellings were considered to have higher expectations and be more sensitive than occupants of industrial buildings/ or vehicle users).
- The nature of the existing view.

9.3.32 The criteria used to determine the sensitivity of the receptors to the proposed changes are shown in the following Table 9.6.

Table 9.6: Sensitivity of Visual Receptors

Sensitivity	Example of Visual Receptor/Feature
High	Residential properties. Users of Public Rights of Way or other recreational trails (e.g. National Trails, footpaths, bridleways etc.). Users of recreational facilities where the purpose of that recreation is enjoyment of the countryside (e.g. Country Parks, National Trust or other access land etc.).
Medium	Outdoor workers Users of scenic roads, railways or waterways or users of designated tourist routes. Schools and other institutional buildings, and their outdoor areas.

Sensitivity	Example of Visual Receptor/Feature
Low	Indoor workers Users of main roads (e.g. trunk roads) or passengers in public transport on main arterial routes. Users of recreational facilities where the purpose of that recreation is not related to the view (e.g. sports facilities).

Magnitude of Visual Impact

9.3.33 The assessment of magnitude of change includes the consideration of the likely impacts of development on visual amenity from individual viewpoints or a sequence of points that have transient views e.g. along a road.

9.3.34 The main elements of magnitude evaluation include:

- The extent of the receptors view affected by the development as a proportion of the view available.
- The distance of the receptor from the changed landscape.
- The angle of the view relative to the main activity of the receptor.
- The level of integration or contrast created by the road, the traffic on the road and its associated elements within the view.
- The potential for effective mitigation of adverse effects and opportunities for landscape enhancement.
- The duration of activity apparent.

9.3.35 Table 9.7 shows how the magnitude of impact is determined.

Table 9.7: Magnitude of Visual Impacts Criteria

Magnitude of Impact	Criteria for assessing Visual Impact
Substantial	Majority of viewers affected; major change in view; direct or open views of the site.
Moderate	Many viewers' affected; moderate changes in the view; partial or oblique views of the site.
Slight	Few viewers' affected; minor changes in the view; well screened or obscured views of the site.
Negligible	Obscured views; barely perceptible changes in the view.
None	No part of the project, or work or activity associated with it, is discernible.

Significance of Visual Effects

9.3.36 Significance is not absolute and can only be defined in relation to each development and its location. The two principal criteria determining significance are the scale/magnitude of the impact and the sensitivity of the receptor. A higher level of significance of effect is generally attached to large-scale impacts and impacts on sensitive or highly sensitive receptors; thus small impacts on highly sensitive receptors can be more important than

large impacts on less sensitive receptors. Significance thresholds can therefore be determined from different combinations of the sensitivity of the visual receptor and the magnitude of the effect. This is indicated in Table 9.8.

Table 9.8: Significance of Visual Effect

Resulting Significance of Effect					
Sensitivity of Receptor	**Magnitude of Impact**				
	Substantial	**Moderate**	**Slight**	**Negligible**	**None**
High	Major Effect (significant effect)	Major Effect (significant effect)	Moderate Effect (significant effect)	Minor Effect (not significant)	No change (not significant)
Medium	Major Effect (significant effect)	Moderate Effect (significant effect)	Minor Effect (not significant)	No change/ Minor Effect (not significant)	No change (not significant)
Low	Moderate Effect (significant effect)	Minor Effect (not significant)	Minor Effect (not significant)	No change/ Minor Effect (not significant)	No change (not significant)

9.3.37 Overall effects may be adverse, negligible or beneficial, and are assigned taking into account mitigation measures and different stages of the project lifecycle. Table 9.9 provides definitions of significance of visual effects, as applied in this assessment.

Table 9.9: Definition of Significance of Visual Effects

Significance of Effect	**Definition of Significance**
Major Adverse Effect	Where the scheme would cause a significant deterioration in the existing view.
Moderate Adverse Effect	Where the scheme would cause a noticeable deterioration in the existing view.
Minor Adverse Effect	Where the scheme would cause a barely perceptible deterioration in the existing view.
No Change (Negligible)	No discernible deterioration or improvement in the existing view.
Minor Beneficial Effect	Where the scheme would cause a barely perceptible improvement in the existing view.
Moderate Beneficial Effect	Where the scheme would cause a noticeable improvement in the existing view.
Major Beneficial Effect	Where the scheme would cause a significant improvement in the existing view.

Photography

9.3.38 Photographs taken during the field survey assessment were taken using a Nikon D3100 digital SLR camera with an equivalent focal length to 50mm for a traditional 35mm film camera. The resulting photographs produced are comparable to those which would be

achieved with a non-digital SLR camera. Photographs were taken from an average height of approximately 1.6m above ground level.

9.3.39 GPS co-ordinates for the location of each photograph were established using a Garmin GPS Etrex Vista handheld GPS and verified through detailed analysis of mapping data.

9.3.40 Individual photographs were spliced together to create the images using Adobe Photoshop software. Photographs were taken with approximately a 50% overlap, in line with guidance listed.

Photoviewpoints and Photomontages

9.3.41 Photoviewpoints illustrate an approximate 90 degree curved panoramic view. This angle of view allows the view to be represented in a way which is representative of the view as seen on site by the human eye. For photomontages, this places the development at the correct scale within the surrounding landscape context. This is important, as it allows the development to be read correctly in relation to existing elements within the landscape setting. In order to accurately view the Photoviewpoints and Photomontages when printed at full size, a viewing distance of 300mm must be maintained. This allows for a correct representation of the development and surrounding elements when printed.

9.3.42 Photoviewpoints were selected to represent the visual envelope over which the proposal is likely to have an influence. The selected viewpoints represent views from a range of different sensitive visual receptors, at a range of distances from the development within the visual envelope.

9.3.43 The Photomontages demonstrate the principle Visually Intrusive Highway elements (viaduct structure and embankments) within the existing landscape context. These are based upon Photoviewpoints which represent sensitive receptors with clear views of these elements, and were produced to demonstrate the scale and appearance of these new features in the context of the site. Photomontages were produced using 3D CAD and graphic software and the current scheme design to place the scheme accurately within the view with realistic materials.

Presentation of Results

9.3.44 The landscape assessment establishes the sensitivity of the identified landscape resources and the magnitude of potential impacts of the road scheme on these resources. The information is summarised and presented in tabular form, which allows objective judgement of the overall significance of effects (refer to Appendix 9.1 Landscape Resource Assessment).

9.3.45 The visual assessment establishes the sensitivity of the identified visual receptors and the magnitude of the potential visual impacts of the road scheme on these receptors. The information is summarised and presented in both tabular and graphical forms, which allows objective judgement of the overall significance of effects (refer to Appendix 9.1 Visual Effects and Figures 9.5a-b Visual Effects Temporary and 9.6a-b Visual Effects Permanent).

Supporting Figures

9.3.46 The assessment is supported by the following Figures and Photoviewpoints:

9.4 Baseline Conditions

Landscape Designations

9.4.1 The study area has the following landscape or related planning designations:

- Sites of Importance for Nature Conservation (SINC's).
- Historic Garden and Designed Landscape.
- Dalry Conservation Area.
- Tree Preservation Orders (TPO).
- Listed Buildings.
- Sites of Historical Interest.

9.4.2 Figures 9.2a-b Baseline Landscape and 9.3a-b Landscape Appraisal illustrate the location of these designations and also show the Proposed Scheme alignment in relation to these. These designations are taken from the North Ayrshire Local Plan and through consultation, and a description is provided within relevant chapters as appropriate, e.g. Chapter 8 Cultural Heritage for heritage features.

Landform and Topography

9.4.3 Dalry lies in a valley bottom at around 25m AOD, with numerous watercourses running through and around it, the largest being the River Garnock. These watercourses have helped create an undulating landscape which surrounds Dalry with large rolling hills particularly to the north west of Dalry where the landform reaches 406m AOD at Blaeloch Hill (approx 8km north west of Dalry). The hills to the east and south are not as high (around 100m AOD within 4km from the site) and have a much gentler gradient, with the levels within the site area varying between approximately 25m AOD at the River Garnock and approximately 75m AOD at Highfield.

Land Use

9.4.4 The land use of the Proposed Scheme corridor is predominantly farmland of both pastoral and arable use and has signs that it was once part of the old estate land, including well maintained old stone walls and hedgerows. The Proposed Scheme would also pass over the existing railway line and the River Garnock, which both run north to south to the east of Dalry centre. Blair Estate is located to the south east of Dalry and is designated as a Designed Landscape and a SINC / Provisional Wildlife Site. This area is also utilised for informal recreational purposes. There is an area of industrial units to the north of Dalry including Drakemyre Works, which dominates the surrounding landscape.

Vegetation/Landcover (of significance)

9.4.5 The area is characterised by small areas of coniferous and mixed woodland, including some copses of trees around field boundaries, and woodland associated with the numerous watercourses running through and around Dalry. Some large areas of coniferous woodland partially cover the hillsides surrounding Dalry. The railway corridor to the east of Dalry has woodland and scrub vegetation on both sides which partially screen passing trains and ties the railway embankments into the surrounding valley bottom landscape.

9.4.6 A significant area of woodland in the study area is the woodland within the Blair Estate. This is a well established woodland predominantly comprising broadleaved species with an understory of ornamental shrub. The estate woodland is clearly defined by the boundary of the estate, demarcated by historic stone walls and estate railings.

9.4.7 The majority of field boundaries and local roads are lined with well maintained native hedges which define the field and road patterns. The areas surrounding the townscape of Dalry are predominantly farmland but there are also some areas of rough and wet grassland. Refer to Figures 9.2a-b Baseline Landscape and 9.3a-b Landscape Appraisal for types, locations and extent of vegetation.

Access

9.4.8 Dalry is accessed by two main roads, the A737 and the B780. Both these roads pass through the centre of Dalry, channelling traffic together, which can make the centre congested at times. The A737 is the main road that connects Irvine to Glasgow (via the M8 motorway) and the settlements between the two. The B780 is mainly used as an access road for the small settlements and farms that are located along it.

9.4.9 Blair Road links Dalry and the Blairland housing estate to the northwest with the Blair Estate to the south east. The C93 is located to the east of Dalry and the Proposed Scheme and runs north to south along the eastern boundary of Blair Estate. The B707 connects to the A737 in the Highfield area and travels east away from Dalry. Figures 9.2a-b Baseline Landscape show the locations of access routes.

9.4.10 The Glasgow to Ayr railway line travels north from the south of the study area to connect to Dalry Train Station, which is located between Dalry and Blairland Housing Estate.

9.4.11 National Cycle Network (NCN) Route 7 follows the C93 minor road which runs off the A737 southward from Highfield to Blair Road and beyond. A route protected in the Local Plan as a potential off road cycle route is located to the south of Dalry (see Figure 9.2a) runs alongside a dismantled railway line and the River Garnock for part of its route. There is also a network of small paths and tracks throughout the study area that provide access to farms and fields, including the track along the River Garnock and the track close to the railway to the southwest of Blairland Estate (refer to Chapter 14 Effects on All Travellers). Local public access routes are also found within the Blair Estate woodlands.

Drainage

9.4.12 The study area comprises of the River Garnock corridor and tributaries, such as the Rye Water, Caaf Water and Coalheughglen Burn, which together create an undulating landscape and have associated vegetation along their banks.

Pattern and Scale of Landscape

9.4.13 The landscape around the Proposed Scheme is generally small scale, with undulating landform, irregular field pattern and linear field boundaries. Dalry is a small settlement with a fine grain and human scale, with narrow streets and small residential units usually of two storeys. Although Dalry is a relatively small settlement, its development is dense and has a strong sense of enclosure, mainly due to its narrow streets. In contrast, the Drakemyre Works (see Figures 9.2a-b Baseline Landscape) to the north of Dalry is a larger scale area with bigger and taller units, which are set out on a grid.

9.4.14 Due to the undulating landform and significant vegetation of the surrounding landscape around Dalry, the enclosure and scale of the area changes greatly as you move through the landscape. In certain areas, particularly up on the higher ground to the east, west and northwest the area can feel very open and exposed, with wide panoramic views while in other areas, particularly in the valley bottom, it can feel very enclosed with short distance views.

Landscape Character

9.4.15 The study area sits within the following national, regional and local landscape character areas.

National Landscape Character

9.4.16 Scottish Natural Heritage has divided Scotland's landscape into large distinct areas of differing landscape Character and Dalry lies within the West Central Belt Area (Area 17) (Scottish Natural Heritage, 2002), which covers a large area of west Scotland centred on the city of Glasgow. The key characteristics of this area are listed below:

- A large, geographically diverse, area encompassing much of the urbanised part of the Country as well as strongly rural areas.
- Predominantly a lowland landscape, but with undulating moorland plateaux, within which many discrete areas, corridors and networks of semi-natural habitats form important features.
- Beyond the Greater Glasgow conurbation, the dominant impression is that of a well-populated, intensively managed, working landscape.
- The River Clyde, with its tributaries and estuary, is a key and distinctive feature flowing through the heart of the area.
- A mosaic of upland features such as grasslands, heath, mire, oak / birch woodland and scrub punctuate the lowlands.
- Woodland is widely distributed, consisting principally of coniferous plantation with generally smaller-scale broadleaved and mixed woodland (mainly oak / birch, ash / elm) with some old estate policy woodlands contributing to the diversity of woodland cover.
- Many of the farming units have characteristic field boundaries, stone dykes, hedgerows or boundary trees that create a distinctive landscape pattern.
- Motorway corridors, railway lines and other infrastructure elements are widespread features making West Central Scotland the hub of the Country's transport infrastructure.
- Approximately 150 Historic Gardens and Designed Landscapes in the area constitute an important element of the more intimate landscape of the lowlands, and provide an attractive recreational and cultural amenity.

Regional Landscape Character

9.4.17 *Ayrshire Landscape Assessment* (Land Use Consultants 1998) has divided the region's landscape into distinct regional character areas. Dalry and the surrounding landscape are within the Ayrshire Basin area, which is described below.

Ayrshire Basin

9.4.18 The Ayrshire basin comprises the extensive semi-circle of lowland focused on the county town of Ayr. The area is bounded to the north by the Renfrew heights and to the east and south by the Ayrshire Rim and Carrick Hills and Valleys. The basin varies in elevation, draining from east to west. However, it is the pattern of land use and settlement which provides the area's distinctive character. Compared with surrounding areas, the Ayrshire basin is heavily populated with a dense network of settlements and roads. The principal land use is dairy farming, resulting in the survival of the framework of hedges and hedgerow trees. The basin is cut by a series of narrow river valleys which have become incised as the land has risen relative to the sea.

9.4.19 Key landscape issues include:

- Issues to do with past and future settlement expansion, including:
  - *Visual effects of past expansion;*
  - *Nature of the urban fringe;*
  - *Settlement coalescence;*
  - *Pressure for expansion of larger settlements;*
  - *Pressure for expansion of smaller settlements;*
  - *Issue of settlement capacity and landscape capacity;*
  - *Building design, materials, siting, layout and orientation;*
- Conservation and restoration of rich lowland agricultural landscape including:
  - *Hedges and other field boundaries;*
  - *Tree lines, avenues and clumps;*
  - *Minor roads;*
  - *Vernacular farmsteads and sympathetic newer structures;*
- Coastal pressures including :
  - *Recreational development pressure;*
  - *Coastal defence;*
  - *Climate change.*

9.4.20 The Ayrshire Regional Character Area has been divided into smaller areas of differing Landscape Character Types. The Study area is located within two Character Types, Ayrshire Lowlands and Lowland River Valleys. The Key characteristics of these two areas are listed below.

Ayrshire Lowlands

9.4.21 This landscape type forms an extensive area of agricultural lowland which occupies much of the Ayrshire basin. Lying between about 10 metres and 150 metres, the area's geology is dominated by coal measures, though basalt, sandstones, limestones, millstone grit and volcanic intrusions are also present.

9.4.22 The landform is surprisingly complex, dissected by many burns and streams draining to incised main river valleys to create an undulating lowland landscape. There is a gentle increase in height from the coastal fringe to the more abrupt transition to upland. Landcover is predominantly pastoral, though with some arable on lower and better soils. Cattle, sheep and ley grassland are common.

9.4.23 Fields within this landscape type, probably dating back to the 18th or 19th century are often regular in shape and enclosed by beech or hawthorn hedges. For the most part, the hedges are in good condition, a significant asset at a time when hedgerows in many parts of the country are suffering gradual decline. Many field boundaries are also marked by mature hedgerow trees. Again, beech trees predominate. These trees give the landscape a surprisingly wooded character, often forming avenues along minor roads. In places this structure has begun to decline as trees were felled and not replaced. More extensive woodland is limited, concentrated in river valleys and formed into shelter belts in some of the more exposed areas, or around large estates.

9.4.24 The area's settlement pattern is historic in origin. Many existing farms are on historic sites, though buildings are invariably newer and old field systems lost beneath more recent enclosures. Farms are often sited on low hill tops, typically comprising a courtyard with the farmhouse at the centre. Buildings are often limewashed with slate roofs and black painted woodwork. More modern farm buildings, including sheds and barns are rarely intrusive, often dark red or green in colour.

9.4.25 A number of towns and villages are found throughout the lowlands, again many with medieval or earlier origins. Examples include Tarbolton and Kilmarnock. Invariably, the historic cores of such settlements are surrounded with more modern development. This often comprises standard municipal or suburban designs (white render and orange pantiles) which reflect neither the character of the historic core or the surrounding landscape.

9.4.26 The character of this landscape type shows subtle and gradual differences across the area as a whole. Variations mainly reflect topographic and geological differences, with rich pastures, enclosed by dense, well treed boundaries in the lowest parts of the basin, very slowly giving way to wetter, rushier pastures with lower hedges, fewer trees and a stronger moorland influence. At the scale of this assessment, it has not been possible to define the extremes of character as separate landscape types.

Lowland River Valleys

9.4.27 The post glacial changes in sea level which created the raised beaches that are a characteristic feature of much of the Ayrshire coast also caused rivers to enter a phase of down-cutting, creating a series of incised river valleys which cross the Ayrshire lowlands. The Garnock, Annick Water, Irvine, Ayr and Doon (together with a large number of smaller rivers and streams) all enter narrow, entrenched valleys as they leave the bold landscapes of the uplands and flow towards the coast. The underlying geology is varied. Most common are boulder clays and coal measures, but near Mauchline, the Ayr cuts through an area of sandstone, creating a dramatic gorge-like valley.

9.4.28 The river valleys are generally narrow, often just a few hundred metres wide, but bounded by steep slopes between 10 and 30 metres high. These valley slopes are frequently wooded with stands of beech and semi-natural woodland. Within the valleys, the rivers flow in tight meanders, often cutting into side slopes and enclosing semi-circles of rich pasture. Field boundaries, where they occur, tend to be hedges.

9.4.29 Settlement within the valleys tends to be comparatively limited, though a number of mills are sited alongside rivers, often at bridging points. The rich woodland of the river valleys has, in a number of examples, been incorporated into the designed landscapes associated with historic houses and large estates.

9.4.30 These are small scale landscapes which, for much of the time, lie hidden within the wider landscape of the undulating Ayrshire lowlands. They often come as a surprise, signalled by a steep twist in the road, and the presence of linear woodlands along the steep valley slopes.

Local Landscape Character

9.4.31 Although Dalry lies within the regional character areas as described above, and shares many of the characteristics listed, it also has distinct local character areas. For the purposes of this assessment, the local character has been broken into seven different landscape character areas, based on site visits, which are:

- Estate Land (High Quality).
- Rolling Farmland (High Quality).
- Rolling Farmland (Medium Quality).
- Rolling Farmland (Low Quality).
- River Valley (Medium Quality).
- River Valley (Low Quality).
- Dalry Urban Areas.

9.4.32 For the location and extent of these local character areas, refer to Figures 9.3a-b Landscape Appraisal. Analysis of the seven key components of the landscape relate to; landform; vegetation/landcover of significance and, cultural and historical associations.

Estate Land (High Quality)

9.4.33 Landform: Key Characteristics:

- Extensive, gently undulating landform.
- Visually prominent.

9.4.34 Vegetation/ Landcover (of significance): Key Characteristics:

- Large areas of mixed woodland within Blair Park/ Estate.
- Some pastoral farming with medium to large, irregular field patterns.
- Fields defined by well maintained native hedges with mature hedgerow trees in parts.

9.4.35 Cultural and Historical Associations: Key Characteristics:

- Designated as a Designed Landscape.
- Attractive old stone buildings associated with the Estate, some of which are listed buildings (see Figures 9.2a-b Baseline Landscape).
- Well maintained hedgerows and woodland.

9.4.36 Due to the sensitive and historic nature of the landscape elements and features which form this landscape character area it is considered to be of high sensitivity. The landscape would be particularly sensitive to the loss of estate woodland and historic

buildings and structures, or the introduction of new elements which detract from the areas character.

Rolling Farmland (High Quality)

9.4.37 Landform: Key Characteristics:

- The Rolling Farmland is defined by the gently undulating landform, formed by the surrounding watercourses and agricultural practices.

9.4.38 Vegetation/ Landcover (of significance): Key Characteristics:

- Predominantly pastoral farming, in some areas retaining an important recognised landscape structure of mature farmland hedges and trees.
- Medium to large, irregular field patterns.
- Fields defined by well maintained native hedges with mature hedgerow trees in parts.

9.4.39 Cultural and Historical Associations: Key Characteristics:

- Rich archaeological and historical qualities. Industrial heritage features such as derelict railways and remnants of pre-industrial estate landscapes.

9.4.40 Due to the uniform character and historic nature of the landscape elements and features which form this landscape character area and the few detracting features within it, this character area is considered to be of high sensitivity. The landscape would be particularly sensitive to the loss of well maintained hedgerows and historic buildings and features, or the introduction of new elements which detract from the areas character.

Rolling Farmland (Medium Quality)

9.4.41 Landform: Key Characteristics:

- Defined by the gently undulating landform, formed by the surrounding watercourses and agricultural practices. The adjacent urban fringe and industrial activity has broken up previous farming patterns in some areas to the extent that they are no longer predominant in certain parts of the landscape.
- Visual influence of the urban edge of former and current urban development and transportation infrastructure.

9.4.42 Vegetation/ Landcover (of significance): Key Characteristics:

- Predominantly pastoral farming, in some areas retaining an important recognised landscape structure of mature farmland hedges and trees.
- Medium to large, irregular field patterns.
- Fields to the north defined by well maintained native hedges with mature hedgerow trees in parts.
- Fields to the south are more degraded with broken hedgerows and post and wire fencing and areas of rough and damp grassland.

9.4.43 Cultural and Historical Associations: Key Characteristics:

- Urban fringe and industrial activity fragments the agricultural, rural character. Historical industrial heritage is sometimes difficult to perceive, but the urban areas have a direct or indirect adverse effect on this landscape area.
- Rich archaeological and historical qualities. Industrial heritage features such as quarries, former collieries and derelict railways.

9.4.44 The character area is considered to be of medium sensitivity due to the presence of both attractive and unattractive features which contribute to the landscape character. The landscape would be sensitive to the loss of well maintained hedgerows and the degradation of the existing field patterns, or the introduction of significant new elements or features.

Rolling Farmland (Low Quality)

9.4.45 Landform: Key Characteristics:

- The adjacent industrial activity and transport infrastructure has broken up previous farming patterns to the extent that they are no longer predominant.
- Visual influence of industrial areas and transportation infrastructure.

9.4.46 Vegetation/ Landcover (of significance): Key Characteristics:

- Areas of significant semi-natural vegetation occur adjacent to the river.
- Pastoral farming suffering from serious decline, particularly adjacent to the watercourses.
- Small, irregular field patterns.
- Fields are degraded with broken hedgerows and post and wire fencing and areas of rough and damp grassland.

9.4.47 Cultural and Historical Associations: Key Characteristics:

- Industrial activity and transport infrastructure fragments the agricultural, rural character.
- Urban fringe issues of blight, management decline and anti-social behaviour such as fly tipping.

9.4.48 The character area is considered to be of low sensitivity due to the relatively degraded condition of the disjointed landscape elements and features which contribute to the areas landscape character.

River Valley (Medium Quality)

9.4.49 Landform: Key Characteristics:

- Open valleys with gently undulating landform surrounding the River Garnock and other associated burns and watercourses.
- The watercourses have small sloping banks which are lined with native scrub and woodland vegetation which screen the river and watercourses apart from areas where the vegetation has been cleared.

9.4.50 Vegetation/ Landcover (of significance): Key Characteristics:

- Unique physical features of woodland, characteristic patterns of land use and settlement has created a recognised landscape character.
- The watercourses have small sloping banks which are lined with native scrub and woodland vegetation.
- An area to the east of the River Garnock comprising areas of woodland, scrub and agricultural fields adjacent to the river is designated as a Wildlife Site/ SINC by Scottish Wildlife Trust.

9.4.51 Cultural and Historical Associations: Key Characteristics:

- Historic landscape features such as woodlands, walls and bridges.

9.4.52 The character area is considered to be of medium sensitivity due to the mixture of attractive and unattractive features present within the character area and the presence of urban fringe elements and significant woodland cover.

River Valley (Low Quality)

9.4.53 Landform: Key Characteristics:

- Valley floor comprising watercourses with sloping banks and flat areas associated with industrial and commercial uses.

9.4.54 Vegetation/ Landcover (of significance): Key Characteristics:

- River banks are lined with native scrub and woodland vegetation which screen the river and watercourses apart from areas where the vegetation has been cleared.

9.4.55 Cultural and Historical Associations: Key Characteristics:

- Fencing, infrastructure and car parking areas associated with industrial/commercial land uses degrades the appearance of the area.

9.4.56 Due to the fragmented and degraded nature of the character area it is considered to be of low sensitivity. The landscape would be able to accommodate change through the introduction of new landscape elements and features or the loss of existing elements.

Dalry Urban Areas (Unclassified)

9.4.57 Landform: Key Characteristics:

- Dalry is located on the sloping valley side surrounded on three sides by watercourses. The north, east and south of the settlement is located in the valley bottom adjacent to The Rye Water to the north, The River Garnock to the east, and The Caaf Water to the south and the built form rises towards the west as it moves up the valley side.

9.4.58 Vegetation/ Landcover (of significance): Key Characteristics:

- Small blocks of vegetation/woodland and individual street trees within the Dalry area.
- The land along the edge of the Dalry urban area between the built form and the River Garnock contains scrub and woodland vegetation.

9.4.59 Cultural and Historical Associations: Key Characteristics:

- Dalry is a small settlement with a fine grain and human scale, with narrow streets and small residential units.
- Existing development is dense and has a strong sense of enclosure, mainly due to its narrow streets
- Drakemyre Works to the north of Dalry is a much bigger scale with large surface area and height units, which are set out in a grid system.
- Numerous signs of the area's industrial past surrounding Dalry are present such as former colliery and quarry sites and former mine entries.

9.4.60 Due to the presence of historic buildings, areas of significant vegetation and pattern of townscape of the character area it is considered to be of medium sensitivity.

Landscape Features

9.4.61 The main attractive landscape features of the study area are considered to be:

- Blair Estate is a Designed Landscape and has well maintained hedgerows, stone walls and areas of woodland and is also designated as a SINC / Provisional Wildlife Site.
- The River Garnock corridor and tributaries, such as the Rye Water and Caaf Water create an undulating landscape and have associated vegetation along their banks.
- The old bridge abutment to the north of the Blair Estate is a remaining landscape feature of the dismantled railway line.
- Well maintained hedgerows and field boundaries. These were most likely part of the old estate land.
- St. Margaret's Church in the centre of Dalry.

9.4.62 The main unattractive landscape features of the study area are considered to be:

- The railway line and the associated embankments, masts and cables.
- Parts of the River Garnock which are degraded and fragmented.
- Wind turbines to the west of Dalry.
- Drakemyre Works to the north of Dalry.

9.4.63 Refer to Figures 9.2a-b Baseline Landscape for locations of these landscape features.

Landscape Character – Assessment of Quality

9.4.64 Figures 9.4a-b Landscape Quality shows the areas of differing quality. The study area highlights that the landscape within the road corridor setting is predominantly medium quality due to the presence of both attractive and unattractive landscape features. Due to its context within the urban fringe, there are areas that have become degraded to the south with rough grassland and degraded field boundaries. The areas of medium quality to the north are more attractive with a more unified character, yet the dominance of visual detractors such as telegraph wires and masts prevent it from being high quality.

9.4.65 There is a large area of high quality landscape which includes Blair Park Estate and some of the surrounding farmland. This is due to the area having a strong unified character as Estate Land within Blair Park. The surrounding farmland has also been

classified as high quality because of the presence of well maintained hedgerows and copses of trees and because there are fewer detracting features, such as telegraph wires and degraded rough grassland, compared to the surrounding medium quality land. The landscape on the edge of the study area to the south west has also been classified as high quality due to its attractive unified character and open long distance views.

9.4.66 The land around the River Garnock and the railway line is low quality, with the exception of the area of woodland and scrub designated as a SINC to the west, due to the fragmented nature of the area with degraded elements, particularly along the railway and surrounding parts of the river. This area, also, has industry within it, including the auction site, which are visual detractors.

Visual Receptors

9.4.67 Identified visual receptors within the Study Area are indicated on Figures 9.5a-b Visual Effects Temporary and Figures 9.6a-b Visual Effects Permanent and within Appendix 9.2 Visual Effects. This provides an indication of their existing visual outlook, amenity and a judgement as to their sensitivity to change.

9.5 Predicted Effects

Introduction

9.5.1 The criteria stated in the methodology were used to provide an overview of the predicted landscape and visual effects of the proposed development taking into account the nature of the effect, the sensitivity of the landscape resource or visual receptor being affected and the magnitude and significance of the Proposed Scheme upon the identified resource or receptor. See Figures 9.1 to 9.36e (Viewpoint Location Plan/Baseline Landscape/Landscape Quality/Visual Effects/Photoviewpoints A-U/Photomontages 1-5).

9.5.2 The likely adverse effects on the landscape resource are identified as:

- Permanent change in land use/management as a result of the proposed land take associated with the scheme.
- Permanent alteration to topography and skyline due to the introduced landform of road embankments, cutting and viaduct structure.
- Permanent loss of mature trees and hedgerows during construction phase and disturbance to flora and fauna as a result of associated activities.
- Some changes to land cover resulting from mitigation measures. Change in perceived landscape pattern and environmental fit.
- Permanent alteration to recreation routes. Increased possible severance caused by the proposed development.
- Permanent alteration of access into the surrounding farmland.
- Significant changes to the setting of the River Garnock by the construction of the viaduct structure over the valley.
- Changes to the pattern and scale of the existing rolling farmland by the re-organisation and severance of field boundaries.

9.5.3 For a summary of the effects of the landscape resource refer to Appendix 9.1 Landscape Resource Assessment.

9.5.4 The likely adverse effects of the Proposed Scheme on visual receptors are identified as:

- Intrusion of the proposed development on valuable existing landscape features and areas of high landscape quality, such as the attractive undulating farmland and the setting of Blair Estate.
- Extensive earthworks, which intrude into views from nearby property and public places, such as the proposed cuttings to the central and northern areas of the scheme.
- Intrusive embankments, structures, traffic, lighting or signage crossing valleys and low-lying land, such as the viaduct over the River Garnock and the associated embankments.
- Cuttings which create notches on the skyline or scars on hillsides and adjacent ground, such as the proposed cutting to the central and northern area of the scheme.
- Land take and vegetation removal required for large earthworks and structures.
- Changes to watercourses and drainage regimes, such as the construction works needed to build the proposed viaduct over the River Garnock, and the diversion of Coalheughglen Burn.

9.5.5 For a summary of the effects on visual amenity refer to Appendix 9.2 Visual Effects.

Visual Effects

9.5.6 The appended Table 9.11 is with reference to Figures 9.2a-b Baseline Landscape, 9.3a-b Landscape Appraisal, 9.4a-b Landscape Quality, 9.5a-b Visual Effects - Temporary and 9.6a-b Visual Effects – Permanent. In conjunction with the illustrations the assessment seeks to establish the associated visual effects upon the identified visual receptors, which include residencies, urban areas, communication routes, places of work and recreation.

9.5.7 Field work for the assessment was undertaken on the 29-30th May, 12th July, 4-5th October and 25th October 2012. Weather conditions on the dates of the site visits varied from overcast with slight haze to clear skies; no rain, fog or snow was experienced.

9.6 Mitigation

General

9.6.1 The purpose of mitigation is to avoid, reduce and, where appropriate, provide remediation and or compensation to alleviate any significant negative environmental effects associated with the Proposed Scheme. This section describes landscape and visual mitigation measures that have been incorporated into the conceptual design for the scheme to offset identified adverse effects. The mitigation scheme has been informed by DMRB Volume 10 Section 0 Environmental Objectives Parts 2 and 3.

9.6.2 Primary mitigation measures generally relate to basic design elements such as;

- Sensitive location and siting of road infrastructure including Sustainable Drainage (SuDs) features.
- Site layout and access during construction and operational stages.

- Vertical alignment.
- Appropriate form, materials and design of built structures.
- Lighting and signage.
- Ground modelling.
- Protection of existing planting.

9.6.3 These principles are incorporated into the Environmental Mitigation Sheets 1-5 (Figures 9.36a to 9.36e) and further developed taking into consideration the constraints and opportunities identified during the assessment process to provide an environmentally integrated design which responds to the differing landscape context along the line of the Proposed Scheme.

9.6.4 Secondary mitigation measures seek to address significant negative effects of the road scheme as identified during the assessment.

9.6.5 The mitigation strategy provided below sets out the primary and secondary mitigation principles, which have been considered during the scheme development.

9.6.6 Mitigation measures include the following:

- Highway and accommodation route design to minimise identified potential adverse effects on the existing landform and avoid disruption of major topographical, ecological and other significant landscape features where possible.
- The alignment would seek to use the existing landform where possible and retains existing vegetation (land cover) to good effect, thereby minimising the scale of earthworks and enhancement planting that is required.
- The design and siting of new structures (bridges/signage) and slope profiles would follow existing natural topography where possible and new features would be integrated into the surrounding landscape context. (e.g. woodland, hedges; mature trees, SuDs basins).
- The least amount of highway land would be retained by returning land to its former use where appropriate, where this does not conflict with the need to provide mitigation through planting, mounding, earth shaping and new SUDs basins.
- Existing landform would be used to minimise noise and visual intrusion, for example by placing the road in a cutting or behind rising ground, to protect identified receptors.
- New landform, such as earthworks screens and false cuttings would be incorporated where linear planting would unnecessarily cut off views of the surrounding landscape to screen the road from the identified receptors.
- A balance between horizontal and vertical road alignment, which minimises earthworks, but provides the best integration with natural landform and the best screening for the identified receptors would be developed.
- Site restoration, landscape features and planting proposals would be proposed to link with and reinforce existing features of the landscape character.
- Landscape elements would be incorporated to provide additional visual screening and habitats.

- Replacement planting would be proposed, to replace planting removed to accommodate the road scheme. Field boundaries would be reinstated.

Objectives for Landscape Design

9.6.7 Several site visits were carried out to assess the landscape character and environmental context of the area. Visiting at different times of the year enabled contrasting summer and winter impressions to be gained, and contributed to a better understanding of site conditions and seasonal screening within the landscape context of the scheme. Photographs were taken to record typical landscape features and the circumstances of the existing landscape baseline in which the proposed road sits.

9.6.8 The Environmental Mitigation Sheets 1-5 (Figure 9.36a-9.36e) show the detailed mitigation proposals and environmental requirements of the scheme to address the likely (visual and landscape) effects of the Proposed Scheme on the site context. These include the use of earthwork screens to address the impacts on views from sensitive receptors and the location of landscape elements such as woodland and hedgerow planting to provide habitat, tie in with the existing landscape character and screen infrastructure elements of the proposed scheme.

9.6.9 The provisions of “Cost Effective Landscape: Learning from Nature” (Scottish Executive) have been reviewed and SNH and NAC have been consulted to the inform scheme design.

Natural Processes, Materials and Features

9.6.10 Re-use of stripped topsoils and of selected existing vegetation (grassland/wetland) where this is to be cleared (for example on embankments around SuDs detention basins respectively) would help conserve biodiversity and perpetuate existing seed banks.

9.6.11 Vegetation would be established on newly created cutting or embankment slopes primarily by means of seed application. Aided by the process of regeneration those species most suited to the location would develop naturally to address the negative visual effects of the slopes of cuttings in the scheme. Planted areas generally are intended to be established using bare rooted, native stock.

9.6.12 The proposed landscape elements consist mostly of native species appropriate to the locality; plants produced from seed of local provenance are likely to be most successful and would be used wherever possible. The availability of wild flower and grass seed of local provenance would also be explored in the interests of maximising ecological benefit. The landscape elements help to mitigate the adverse impacts of the highway.

9.6.13 Maximum use has been made of existing subsoils and topsoils both as landscape fill and as a finished surface for soft landscape treatment; no importation of soils is anticipated. As far as is reasonably practicable, stripped soils, especially from cutting slopes, would be stored (for as short a time as possible and such that the viability of the soil is maintained) in separate locations to assist in replicating particular habitats where required.

9.6.14 Where not in conflict with road safety sight lines, mown verges and other engineering requirements, disturbed areas would be stripped of topsoil and seeded with conservation grassland or wildflower mixes direct into low fertility substrate material. Such variety of ground conditions would promote diversity of both sward and visual interest, permit more

sustainable maintenance, and assist in consolidating existing fragmented habitat. New cutting slopes and elevated road sections are potentially significant elements of the scheme; similar features within the existing locality that demonstrate the natural characteristics would be replicated on engineered slopes.

9.6.15 Mitigation for the Proposed Scheme looks to respond better to the open agricultural character of the surroundings with grassland and hedgerow planting. Tree and shrub planting would have similar aspirations and would be based on natural characteristics of informal arrangement and varied density.

Opportunities and Benefits

9.6.16 The central focus of the landscape and visual mitigation strategy is to integrate the Proposed Scheme into the surrounding landscape context using appropriate landscape features such as hedgerows, hedgerow trees, woodland and earth embankments.

9.6.17 A principal design aim has been to achieve sensitive gradients of commonly 1:3 in new earthworks. The extent of earthworks would be reduced to a gradient of 1:2.5 in areas where existing watercourses are to be culverted under the road corridor to reduce the extent of culvert and the softening effects of planting would be utilised as a mitigating technique where deemed to assist the environmental 'fit' of the proposed road. The immediate environs of the road corridor are characterised by hedgerows, hedgerow trees and woodland associated with the River Garnock. Extensive new planting would be inappropriate and serve only to emphasise the road line in the landscape; the preferred objective is to introduce new hedgerows, hedgerow trees, semi-natural and wet woodlands, areas of scrub and wildflower meadows.

9.6.18 The essence of visual interest for road users lies in exploiting the potential for outward views. Where scenic views of the wider landscape are available, the objective here is to maximise opportunities for their enjoyment and avoid foreground obstruction, for example views out towards the hills of Clyde Muirshiel Regional Park. New views would be provided from the new road at its elevated locations over the River Garnock and where located on embankments. At a more local level, visual interest would be enhanced by the introduction of conservation grassland and wildflower mixes and in certain areas bulb planting on verge areas and roundabouts, ornamental shrub planting and native woodland planting within the locality.

9.6.19 The proposed cuttings and associated works would also support an ecological objective in expanding the opportunity for more varied habitat which would contribute to local biodiversity. Planting generally would seek to introduce ecologically appropriate species and, whilst retaining an evergreen element for winter interest.

9.6.20 Design based on natural characteristics is expected to produce a more sustainable scheme in which the commitment to ongoing management is reduced. Long term maintenance is intended to be minimal and in particular to avoid the need for continuation of frequent verge mowing except where road safety or visibility requirements need to be observed.

Nature Conservation and Biodiversity

9.6.21 Design development recognises the principles set out in the Scottish Executive's Cost Effective Landscape: Learning from Nature and Trunk Road Biodiversity Action Plan

documents. It aims to maximise sustainability and biodiversity both during construction and in the longer term.

9.6.22 The Proposed Scheme is anticipated to offer a number of long-term environmental benefits. In particular, the mitigation measures proposed as part of the scheme seek to develop a range of habitat types and to contribute in the longer term to local biodiversity.

9.6.23 Planting generally seeks to introduce ecologically appropriate native species, whilst retaining an evergreen element for winter interest. The scheme would aim to reduce the habitat fragmentation effects of the road caused by severance through creating new linking planted areas.

9.6.24 Earthworks associated with the development would be sensitively shaped to tie into the surrounding landscape context. Availability of fill material and of adjoining land permits adequate grading out of embankment slopes in the interests of landscape integration.

9.6.25 Planting around detention basins would be a combination of conservation grassland and a grass and wildflower mix in an 80/20 combination based on a wet meadow seed mix, where appropriate wet woodland planting would be implemented, this would provide long term ecological and landscape benefits. When implemented wet woodland planting would be restricted to approximately 50% of the surrounding area of the SuDs basins with the remaining areas left to re-colonise naturally. This would provide a variation in the habitat provision and enhance the ecological value of these features.

9.6.26 Planting has been specified to suit local conditions and the planting design focuses on the need for native species used in a manner which reflects the “natural” planting in the vicinity. New planting has been appropriately located to suit the existing landscape character, whilst providing an important enhancement of the existing vegetation resource. It includes the re-introduction of hedgerows to some of the new highway boundary which have a valuable integrating/linking function.

9.6.27 In combination, all of these elements contribute to increased ecological variety, a more diverse landscape character, and greater visual interest in the highway corridor.

9.6.28 Earthworks have been designed to minimise the need for imported materials. Re-cycling and re-use of excavated soils is an underlying philosophy of the scheme to encourage existing seed banks to be utilised.

9.6.29 The natural characteristics of the scheme design would not only minimise the requirement for landscape maintenance, but also provide a varied series of grassland, scrub, woodland, hedgerow and wetland habitats the value of which is increased by linkages throughout the scheme. In the long term it is expected that a highway landscape environment would develop which is largely self-maintaining and which contributes to nature conservation and local biodiversity.

Indicative Planting Schedule

9.6.30 Species mix within the landscape elements intended to be locally variable to integrate with existing landscape elements and /or for different design objectives. Refer to Figures 9.36a-9.36e Environmental Mitigation Sheets 1-5.

Semi Natural Woodland

Alnus glutinosa (Common Alder) Prunus avium (Gean/Wild Cherry)

Betula pubescens (Downy Birch)
Corylus avellana (Hazel)
Crataegus monogyna (Hawthorn)
Ilex aquifolium (Holly)
Pinus sylvestris (Scots Pine)
Prunus spinosa (Blackthorn)
Quercus robur (Common Oak)
Quercus petraea (Sessile Oak)
Sambucus nigra (Elder)
Sorbus aucuparia (Rowan/Mountain Ash)
Viburnum opulus (Guelder Rose)

Wet Woodland

Alnus glutinosa (Common Alder)
Betula pubescens (Downy Birch)
Salix caprea (Goat Willow)
Salix cinerea (Grey Willow)
Sorbus aucuparia (Rowan/Mountain Ash)
Viburnum opulus (Guelder Rose)

Scrub/Shrub

Betula pubescens (Downy Birch)
Corylus avellana (Hazel)
Crataegus monogyna (Hawthorn)
Ligustrum vulgare (Privet)
Prunus spinosa (Blackthorn)
Rosa canina (Dog Rose)
Salix caprea (Goat Willow)
Salix cinerea (Grey Willow)
Sambucus nigra (Elder)
Sorbus aucuparia (Rowan/Mountain Ash)
Viburnum opulus (Guelder Rose)

Hedgerow

Crataegus monogyna (Hawthorn)
Corylus avellana (Hazel)
Fagus sylvatica (Beech)
Prunus spinosa (Blackthorn)
Rosa canina (Dog Rose)

Hedgerow, Specimen and Feathered Trees

Fagus sylvatica (Beech)
Prunus avium (Gean/Wild Cherry)
Quercus petraea (Sessile Oak)
Sorbus aucuparia (Rowan)

Grass seed mixes

9.6.31 All seed mixes would be of at least UK provenance and would be finalised in conjunction with the Local Authority and/or Transport Scotland before work commences. Natural regeneration is to be encouraged. Planted areas would not be seeded.

Amenity Grass Areas (Grass Verges)

9.6.32 Road verges, visibility splays, and other areas intended for regular mowing as short grass are to be seeded onto 100mm topsoil at 50g/m² with a minimum maintenance/wide tolerance grass seed mix including species such as Creeping Red Fescue, Perennial Ryegrass, Hard Fescue, Crested Dogstail and Browntop Bent.

Conservation Grassland

9.6.33 Cutting slopes, embankments and other informal highway land not the subject of tree and shrub planting to be seeded onto low nutrient substrate or 100mm economy grade topsoil at 3g/m² with grass and wildflower mix in an 80/20 combination based on a wildflower meadow seed mix including a high percentage of Fescues and at least a

proportion of Common Knapweed, Ribwort Plantain, Yarrow, Ox-eye Daisy, Meadow Buttercup and Lady's Bedstraw.

Wildflower Seeding

9.6.34 Cutting slopes, embankments and other informal highway land not the subject of tree and shrub planting toward the south east of the road scheme, Environmental Sheet 1 of 5 (Figure 9.36a), to be seeded onto low nutrient substrate or 100mm economy grade topsoil at 3g/m² with a wildflower mix in an 40/60 combination with a high percentage of flowering species and nectar sources, including species such as Ox-eye Daisy, Red Campion, Yarrow, Corn Poppy and Lady's Bedstraw.

Agricultural Grassland

9.6.35 Where existing agricultural grassland is to be reinstated or re-graded landform is to be seeded to provide agricultural grazing land, a seed mixture suitable for agricultural land use is to be utilised, including Perennial Ryegrass varieties, in conjunction with an application of fertiliser to the seed manufacturer's recommendations.

Marginal Wetland

9.6.36 Where wet woodland/scrub planting is not proposed around SUDs detention basins, approximately 50% of the exposed excavated surface is to be seeded with a conservation grassland and a grass and wildflower mix in an 80/20 combination based on a wet meadow seed mix including at least Common Knapweed, Meadow Cranesbill, Greater Bird's-foot trefoil, Jointed rush, Water mint, Yellow Flag Iris, Ribwort Plantain, Meadow Buttercup, and Chewings Fescue and Smooth-Stalked Meadow Grass as grass components, when there is least risk of flooding at 3g/m².

9.6.37 The remaining area of the exposed surface would remain as bare earth to permit colonisation by indigenous wetland edge plant communities.

Bulb Planting

9.6.38 Along the cutting slopes, embankments and roundabouts drifts of Narcissus pseudonarcissus bulb planting would be located to provide seasonal interest in locations within proximity to residential areas at 50bulbs/ m².

Ornamental Planting

9.6.39 Central islands of roundabouts would be planted with ornamental species selected from the following or their cultivars:

Pyracantha spp
Rosa spp
Cornus alba (Dog wood)
Cornus stolonifera (Dog wood)
Cotoneaster spp
Elaeagnus pungens
Prunus laurocerasus
Viburnum tinus
Symphoricarpos chenaultii

9.6.40 Woodland, scrub and shrub areas would be planted at 1m² using minimum 1+1 transplants 400 – 600mm high and with feathered trees at average 5m centres where appropriate. Hedgerows planted 7/m in double row with informally spaced feathered or standard trees. Specimen or ornamental trees minimum 8-10cm standards; ornamental shrubs minimum 2 litre pot grown at densities appropriate to the species.

9.7 Residual Effects

9.7.1 The combination of landscape and visual effects associated with the Proposed Scheme has been established previously and indicates the 'significance' of effects. When mitigation has been taken into account the associated residual effects can be stated, highlighted as long term visual and landscape effects. Appendix 9.1 Landscape Resource Assessment and Appendix 9.2 Visual Effects state the anticipated effects; sensitivity; magnitude; nature of effect; and the residual effect in the short and long term. The following provides a comprehensive statement on the anticipated residual effects on the landscape and visual amenity within the study area based upon the long term effects after mitigation. For the purposes of this assessment a 'significant effect' whether adverse or beneficial occurs where a sensitive viewpoint or landscape resource is subject to a major to moderate change/effect.

Landscape Residual Effects

Landscape Resource

9.7.2 The proposed design for the scheme has the potential for significant effects on the landscape resource - directly within the Proposed Scheme footprint and indirectly upon the wider site context. Mitigation measures look to avoid or minimise, where practicable, identified adverse effects. The significant residual effects are upon the following landscape resources described below.

Land Use

9.7.3 The Proposed Scheme would result in a loss of agricultural farmland and change of land use to the road corridor with indirect effects including the segregation of land which impacts upon future management and use. The mitigation strategy retains existing agricultural use, paths and tracks and reinstates areas of woodland/scrub where possible. Therefore the effects upon land use are considered to be Moderate Adverse.

Vegetation/Landcover (of significance)

9.7.4 The Proposed Scheme would result in loss of semi-natural woodland in the area of the railway line crossing with localised removal of stretches of hedgerow and hedgerow trees. The mitigation strategy reduces land take and minimises disturbance to areas of existing significant vegetation. In addition it provides new areas of woodland, scrub, hedgerow and hedgerow trees which mitigate for the losses of existing vegetation and create additional habitats. Therefore the effects upon the vegetation of the site are considered to be Moderate Beneficial.

Landscape Character Area – River Valley (Medium Quality)

9.7.5 The Proposed Scheme would span the river valley on a large viaduct introducing a new large scale detractive feature into the valley and therefore change the landscape character of this relatively small area. Due to the scale of the structure it is not possible to fully mitigate. Mitigation planting on the abutments and road embankments would aid in the screening of traffic at these locations, and therefore the residual effect upon this landscape character area is considered to be Moderate Adverse.

Visual Residual Effects

9.7.6 Figures 9.6a-b Visual Effects – Permanent and Appendix 9.2 Visual Effects provide an overview of the predicted visual residual effects of the Proposed Scheme taking into

account the sensitivity of the receptors being affected and the magnitude of impact of the Scheme.

9.7.7 The main potential visual effects of the Proposed Scheme are identified as:

- Intrusion of the road on valuable existing landscape features, and undisturbed landscape, such as the attractive undulating farmland setting of Blair Estate.
- Extensive earthworks, which intrude into views from nearby property and public places, such as the large stretches of cuttings along the road alignment to the north of the scheme.
- Intrusive embankments, structures, traffic, lighting or signage crossing valleys and low-lying land, such as the viaduct over the railway line and River Garnock and the associated embankments.
- Cuttings which create notches on the skyline or scars on hillsides and adjacent ground, such as the proposed cutting to the north of the scheme.

Residential Receptors

9.7.8 Residential receptors with significant residual effects as a result of the Proposed Scheme are described below.

Blairland Farm

9.7.9 Due to its elevated location the farm has views of the high quality rolling farmland through which the road proposal passes and over the River Garnock valley in the location of the proposed viaduct. Mitigation landscape earthworks would aid in the screening of traffic on the road however due to the scale and nature of the viaduct it is unlikely to be fully mitigated. Therefore the residual visual effect on this receptor is considered to be Moderate Adverse.

Laigh Monkcastle

9.7.10 The farmhouse is located in an elevated position on the western side of the River Garnock valley with views over the valley towards Dalry, Blairland and the Blair Estate, including the route of the proposed road and the viaduct over the River Garnock and railway line. Mitigation planting would aid in the screening of traffic on the new road in some locations, however due to the scale of the road on a visually intrusive embankment, the angle of the view and the scale of the proposed viaduct it is unlikely to be fully mitigated. In the long term this receptor is likely to experience Moderate Adverse effects.

Hillend

9.7.11 Hillend is located on the western side of the River Garnock valley in close proximity to the proposed southern roundabout, with predominantly south-southeast facing views. However, the viaduct and the road would be visible from the receptor in oblique views and the roundabout would be visible from the rear of the property. The viaduct in particular would be very visually prominent due to the proximity of the structure and road traffic to the property, and due to its scale it would be unlikely be fully mitigated. Mitigation planting would aid in the screening of traffic on the new road where it is located on embankment or around the roundabout. Lighting at the new roundabout is likely to be visible from this property at night time. Therefore in the long term this receptor is likely to experience Moderate Adverse effects.

Residential Properties in the south of Dalry on Garnock Street

9.7.12 The residential properties on Garnock Street are likely to experience Moderate Adverse effects in the long-term due to the new road and southern roundabout forming new visually intrusive elements within the existing view. Mitigation planting would aid in the screening of the road traffic on the embankment and roundabout, however it is likely that stretches of the viaduct and its traffic would be visible above the tree line of the woodland set within the Garnock valley. In addition, lighting at the new roundabout is likely to be visible from this area at night time.

Local Road Users

9.7.13 Users of the following local roads are likely to experience significant residual effects as a result of the proposed road construction.

A737 North of Dalry

9.7.14 The existing A737 connects to the bypass route near Highfield where the new route diverts from the existing alignment and meets the northern roundabout. Proposed landscape earthworks and deep cutting sides which screen the road and its traffic from visual receptors would also block views from the road over the surrounding rolling farmland. The viaduct over the River Garnock valley would be visible on the approach and is unlikely to be mitigated as the route crosses this new feature. Users are likely to experience Moderate Adverse effects.

A737 South of Dalry

9.7.15 The existing A737 connects to the bypass route at the southern roundabout near Hillend where the new route diverts from the existing alignment and crosses the River Garnock valley and the rail line on a viaduct. The viaduct structure, abutment, lighting and roundabout would therefore be highly visible to users of the A737.. In the long term the mitigation proposals would aid in the integration of the road into the context of the surrounding road and infrastructure network and users are likely to experience Moderate Adverse effects.

Recreational Route/Public Transport Users

9.7.16 Users of the following recreational routes and public transport are likely to experience significant residual effects as a result of the proposed road construction:

Path running southwest from Blairland Estate

9.7.17 The path is in close proximity to the proposed road scheme and crosses it under the viaduct as the road crosses the River Garnock valley. The proposed road mitigation landform would screen traffic on the new road, however due to the scale of the viaduct structure it is unlikely to be fully mitigated. In the long term mitigation planting would aid in the filtering of views of the viaduct abutment however users are still likely to experience Moderate Adverse effects.

Path running south of railway crossing

9.7.18 The path is in close proximity to the proposed road scheme and crosses it under the viaduct as the road crosses the River Garnock valley. In the long term mitigation planting would aid in the screening of the viaduct abutment and users are likely to experience Moderate Adverse effects.

River Garnock and associated paths

9.7.19 The proposed road would cross the river valley at a significant height with a number of columns and the viaduct abutments forming visually detractive features. Therefore the structure would be highly visible and visually dominant, with little opportunity to mitigate for any impacts. Users of the river and the footpaths along it are therefore likely to experience Major Adverse effects in the long term.

Caaf Water

9.7.20 The proposed road would cross the valley in close proximity to where the Caaf Water joins the River Garnock and at a significant height with a number of columns and the viaduct abutments forming visually detractive features within the valley. Therefore the structure would be highly visible and visually dominant, with little opportunity to mitigate for any impacts. Users of the river and the footpaths along it are therefore likely to experience Major Adverse effects in both the short and long term.

Paths along the River Garnock and the footbridge near Lynn Holms

9.7.21 The proposed road would cross the River Garnock valley on the viaduct at a distance of 800m from this location and at a significant height. The south-western abutment would also be visible from this location. In the long term mitigation proposals would aid in the screening of the abutment and filtering of views of traffic movements at the roundabout and users of the paths and footbridge are likely to experience Moderate Adverse effects.

Ayr-Glasgow Train Line

9.7.22 The proposed road would cross the train line on the viaduct which spans the River Garnock valley with a number of columns and the viaduct abutments forming visually detractive features within the views. The structure would be highly visible and visually dominant at the location where the viaduct crosses the train line, which is exacerbated by the removal of vegetation to facilitate the viaduct construction. There would little opportunity to mitigate for any impacts. Train passengers are therefore likely to experience Major Adverse effects in the long term.