9 Landscape Effects

This chapter includes consideration of both landscape and visual issues for the preferred scheme. Section 9.1 presents the introduction, methods and baseline conditions relating to landscape and Section 9.2 presents the same for visual issues. Potential impacts and impact assessment for both landscape and visual elements are then discussed together in Section 9.3 with mitigation covered in Section 9.4.

9.1 Landscape

9.1.1 Introduction

Section 9.3 presents an assessment of the predicted impacts of the scheme on the landscape resource of the study area, and considers the changes in the fabric, character and quality of the landscape that are likely to occur as a result of the implementation of the proposed scheme. It is primarily concerned with:

- Direct impacts on specific landscape features and elements; and
- More subtle effects on the overall pattern of elements which together determine the landscape character and regional/local distinctiveness.

The potential to mitigate adverse impacts has been taken into account in the assessment and the residual impacts identified.

9.1.2 Methods

Guidance and Approach

The landscape assessment was undertaken in accordance with DMRB (Volume 11, Section 3, Part 5) with reference to the following documents:

- 'Landscape & Visual Assessment Supplementary Guidance (LVASG) (Scottish Executive; 2002).
- 'Guidelines for Landscape and Visual Impact Assessment' (GLVIA) (Institute of Environmental Management and Assessment; IEMA;2002).
- 'Cost Effective Landscape; Learning from Nature' (CEL:LfN) (The Scottish Office; 1998).
- Planning Advice Note (PAN) 58; Environmental Impact Assessment (Scottish Executive 1999).
- Landscape Character Assessment Reports (covering the study area, previously undertaken on behalf of Scottish Natural Heritage (SNH)).

The four main steps in the landscape assessment process were:

- Description;
- Classification; and
- Evaluation; leading to
- Impact assessment.

Landscape assessment consists initially of the collection of baseline data relating to the components, character and scenic quality of the landscape, and an assessment of the sensitivity of the landscape to change. In undertaking the assessment, consideration is 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 sections (e.g. Ecology and Nature Conservation, 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; and
- landscapes which although not of a quality to warrant national or regional designation may be of great local value.

Data collection was undertaken by way of familiarisation (principally by car from the surrounding minor roads and tracks), desk study and field survey on foot. Since landscape and visual impact assessment are closely related, the data collected has been used for both as appropriate.

Desk Study

Data collected for other sections of this assessment were reviewed to establish the natural elements and processes that contribute to landscape formation. Structure and Local Development Plans were consulted to establish the presence of areas of statutory designation and protection, and current 1:25,000 and 1:10,000 scale and historical Ordnance Survey maps were examined to identify trends in landscape change.

Data relating to archaeology, ecology, buildings, public rights of way and settlements were examined to provide a thorough appreciation of conservation interest. Consultations were undertaken with SNH to supplement the desk study. Information of

relevance to the proposed development was extracted from the above sources and the following specific topics were further explored to enable draft, broadly homogeneous units of consistent and recognisable character and quality (Landscape Character Area (LCA)) to be identified:

- The pattern and scale of landform, land cover and built development.
- Special values including national and local landscape designations, conservation areas and historical and cultural associations.
- Specific potential receptors of landscape and visual impact, including important parts of the landscape, residents, visitors, travellers and other groups of viewers.

Field Study

A field survey was carried out as part of the assessment process to confirm the information obtained during the desk study and to gain any additional in-situ details. The envelope for visual receptors was generated to identify the area from which the road or traffic may be visible. The study area was then selected as shown on Figure 9.1 and spans the area from the Carfraemill roundabout, up the ridgeline east of the road, round the north on the hill behind Headshaw, and across the A68 to the ridge opposite Headshaw. It then runs west of the road down that ridge, across the Mountmill Burn, along the top of the bank west of the Headshaw Burn and back to the roundabout. The study area also incorporates the eastern edge of Oxton village. Although the proposed options may be visible to a degree beyond this distance, it is considered that any potential landscape impacts outside this corridor would not be significant in the wider landscape.

Landscape Impact Assessment Methods

In order to assess the significance of landscape impacts, their sensitivity and the likely magnitude of change were considered, as outlined below.

Sensitivity of Landscape Elements

In this context the sensitivity of a landscape element or assemblage of elements that will be directly or indirectly affected by the proposed development is assessed. Such elements may include topography, geological or man-made elements, woodland, trees and hedgerows, land use and combinations of elements that create distinctive landscape character.

Evaluation of the sensitivity to change combines a review of value or importance of the main elements, which together comprise each character area, with their 'susceptibility' to change to the type of development proposed.

For the purpose of this assessment, value or importance has been defined as "*the*

importance ascribed to the landscape by public perception, value to the community or professional judgement." In this study, professional judgement on landscape quality was used to ascertain the value of the landscape in accordance with the criteria listed within Table 9.1.

Table 9.1. Landscape Value Criteria.

Landscape Value	Criteria
High	Sites of designated landscape value; a landscape, element or feature of national importance, or of particular importance locally with strong positive character and/or rarity and in particularly good condition.
Medium	An undesignated but attractive landscape, element or feature in relatively good condition or of regional or particular importance locally.
Low	A landscape, element or feature with few redeeming qualities or negative character and in a poor or degraded condition.

Landscape quality and condition contributes towards the assessment of both value and susceptibility to change and hence landscape sensitivity. The assessment of landscape quality concerns the public perception of aesthetic and visual attractiveness of the landscape, and considers the following:

- Visual factors (proportion, scale, enclosure, texture, colour, and views).
- Pattern and composition of features.
- Purity of character.

"Susceptibility", as defined by LVASG, is "the ability to accommodate changes arising from the proposed road without adverse effect." This in turn is equivalent to "vulnerability to degradation" described in DMRB as "*the capacity of the landscape to accept change of the type and scale proposed…through the introduction of new features or the loss of existing components."* In order to arrive at this evaluation, using professional judgement, the following aspects were considered:

- Landscape character and context.
- Landscape quality.
- Current and future likely landscape trends.
- The nature and extent of landscape components and their importance and positive or negative contribution to the landscape character area within which they are situated and also to the wider landscape.
- Rarity.

The criteria used to evaluate the overall landscape sensitivity are outlined in Table 9.2.

Table 9.2. Landscape Sensitivity Criteria.

Sensitivity	Criteria
High	Landscape or landscape elements of particular distinctive character, highly valued and considered susceptible to relatively small changes.
Medium	A landscape of moderately valued characteristics considered reasonably tolerant of change.
Low	A landscape of generally low valued characteristics considered potentially tolerant of substantial change.

An evaluation of the magnitude of the proposed changes on the elements of the landscape, through which the route 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 in Table 9.3.

Table 9.3. Landscape Magnitude of Change Criteria.

Magnitude	Criteria
Major	Notable change in landscape characteristics over an extensive area ranging to very intensive change over a more limited area.
Moderate	Minor changes in landscape characteristics over a wide area ranging to notable changes in a more limited area.
Slight	Minor changes in landscape characteristics over a limited area.
Negligible	Minor or virtually imperceptible change in any area or landscape components.

Significance of Impact

An initial indication of impact significance (adverse or beneficial) was gained by combining sensitivity and magnitude in accordance with the matrix provided below (Table 9.4). However, it should be noted that this provides an indication of the likely impact arising from the assessment of magnitude and sensitivity. Given that the criteria represent levels on a continuum or continuous gradation, professional judgement and awareness of the relative balance of importance between sensitivity and magnitude was also required.

Table 9.4. Landscape Significance of Impact Criteria.

Sensitivity	Magnitude			
	Major	Moderate	Slight	Negligible
High	Major	Major/Moderate	Moderate	Slight
Medium	Major/Moderate	Moderate	Slight/Moderate	Negligible
Low	Moderate	Slight/Moderate	Slight/Negligible	Negligible

Impacts of moderate and above are considered significant, as this is the level at which the changes to the landscape would be clearly perceived. Impacts below moderate are not considered significant.

9.1.3 Baseline Conditions

Regional Context

The study area, covering approximately 200 hectares, lies north of the Carfraemill roundabout either side of the A68 trunk road for a distance of approximately 2.6km. The study area is shown in Figure 9.1.

Landscape Policy and Other Statutory Designations

National Planning Policy

Scottish Planning Policy (SPP) 1 – The Planning System identifies the wider objectives of the Scottish Government relating to sustainable development, economic competitiveness, social justice, environmental quality, design and integrated transport. This planning policy replaced National Planning Policy Guideline (NPPG) 1 in November 2002.

'Protecting and enhancing the quality of the environment in both urban and rural areas is a key objective of the planning system. The condition of our surroundings has a direct impact on the quality of life. Safeguarding Scotland's rich and diverse natural heritage and built environment including the wider historic and cultural landscape, improving areas through regeneration, safeguarding biodiversity, environmental improvement and restoration, encouraging efficient use of resources and enabling access to recreational opportunities and open spaces in urban and rural areas can all be supported by a proactive approach to planning.'

NPPG 14 - Natural Heritage sets out policy on the assessment of development proposals showing due concern for natural heritage. It deals, in detail, with requirements for development likely to affect sites of national and international importance.

The scheme offers opportunities to help protect environmental resources by experienced application of the Scottish Executive landscape design and management policy, and Cost Effective Landscape: Learning from Nature.

Scottish Borders Structure Plan (Approved September 2002)

Policy N9 – Maintaining Landscape Character states 'Proposals for development and land use change will be guided by the Scottish Borders Landscape Assessment with the aim of maintaining the integrity of the landscape character and enhancing its quality….'

Scottish Borders Local Plan (Consultative Draft May 2004)

Policy G1 – General Design is aimed at ensuring that new development is of a high standard and respects the environment in which it is contained. The justification is that the primary impact of any development is visual and consequently it is of paramount importance that the location and layout are appropriate and the design complements and enhances the established character of the surrounding area.

Policy NE4 – Trees and Woodlands is aimed at giving protection to important trees and woodlands: not only those covered by a tree preservation order. This is because trees and woodlands contribute to the character of settlements and the countryside, provide valuable habitats and provide an important recreational value.

The only designated landscape site in the area is the Lammermuir Hills Area of Great Landscape Value (AGLV). This is located on the Lammermuir Hills and is 700m away from the A68 road at its closest point. The area is shown on Figure 9.1. The scheme is therefore out with this area. The Ettrick and Lauderdale Local Plan 1991 makes reference to this AGLV as follows:

The Lammermuir Hills form part of the Lammermuir Hills AGLV, part of which is in Berwickshire District. It is recommended in the Structure Plan 1991 that in the longer term the AGLV designation is replaced with a Heritage Area designation. It is felt that this better reflects the wider issues in certain areas of the District, which are of high landscape quality, wildlife and historic interest and cultural importance.

In Ettrick and Lauderdale it is proposed to designate the Eildon Hills/Whitelaw area and the Tweedsmuir hills including the Upper Yarrow Valley as two of the four Heritage Areas in the Region. The Lammermuir Hills is not considered appropriate for classification as a Heritage Area. Although important from a heather moorland, game shooting point of view and of particular sensitivity to forestry development, it does not possess the multi-purpose significance, which the Heritage Area concept embraces.

In terms of other designations the Headshaw Burn, the Mountmill Burn and the Leader Water, which runs beside or in the vicinity of the road, are within the River Tweed SAC and SSSI.

There are two areas of woodland along this part of the A68 route corridor. There is the mature mixed plantation woodland east of the road. This belt runs along the ridge east of the road, wrapping round the hill above the Shieling, with spurs running down the hill as shown on Figure 9.1. There is also Henry's Wood which is a small area of immature mixed hardwood planting adjacent to the A68 at the north end of the proposed scheme. This was planted in 1993 sometime after the construction of the climbing lane on the A68. These woodlands are shown on Figure 9.1.

Landscape Character Area (LCA) Descriptions

The study area is within the Upland Valley with Farmland Landscape Character Type

as defined in SNH Borders Landscape Character Assessment Report.

The key characteristics as described in the Borders Assessment Report of this landscape type are:

- Broad flat valley floor with distinct floodplain and meandering river channel.
- Evenly sloping valley sides.
- Rich red soil derived from Old Red Sandstone parent materials.
- Land cover dominated by arable and improved pasture land, with medium to large sized fields.
- Valley bottom and lower valley sides well treed, with hedgerows, hedgerow trees, small woodlands and coniferous planting locally prominent.

Landscape Evaluation

This stage of the baseline study involves the evaluation of the quality and value (Table 9.1) of the existing landscape within the study area in order to assess its sensitivity to change (Table 9.2).

The study area is situated on the south side of the Lammermuir Hills below the moorland on Soutra Hill and Dun Law where the A68 flattens out and runs along the valley of the Leader Water (Photograph 1). The landscape is characterised by flattish permanent pasture beside the burn, enclosed by a ridge to the east and to the north west of the area, and a bank above the river to the west at Oxton. The village of Oxton is situated in a bowl between ridges where the Clora Burn merges with the Leader Water.

The road runs at a height of between 208-218m above sea level, the ridge to the east rises to 270m and the village of Oxton sits about 10m above the road level at 230m. The east side of the village therefore overlooks the road.

This valley is an area of transition between the moorland of the hills to the north and the open agricultural landscape of the main Leader valley to the south (Photograph 2). Approaching this stretch of road from the south, the immediate landscape closes in to the upland valley, and the views up to the hills dominate. Coming south down from the hills (Photograph 3) this valley is the entrance to the wider Leader valley and the view to this more open landscape is the dominant feature for the traveller on the road.

The A68 north and south of the Carfraemill roundabout has been planted with an avenue of lime trees (Photograph 4). This is a noticeable feature in the immediate landscape. Beyond this, in the study area the road is currently bounded by post and wire fencing with the remains of a hawthorn hedge for the remaining length north of the avenue (Photograph 5). The hedge is thin at the bottom, but reasonably solid at the

Carfraemill roundabout end of the scheme. It deteriorates to become almost non existent towards the northern end of the scheme.

Photograph 1: A68 located below the moorland on Soutra Hill and close to the Leader Water valley.

Photograph 2: C84 access, looking north past Riggsyde towards Soutra Hill.

Photograph 3: Heading south from Soutra Hill to Carfraemill roundabout.

Photograph 4: Looking towards Carfraemill roundabout.

The value of the landscape is considered to be **medium**. It is attractive, but it is neither rare nor unusual in the Scottish Borders. The existing elements, such as the hedges along the road are in poor condition, and there are no specific features within the study area which are outstanding in their own right. The hedges are currently in a degraded and very gappy state. As hedgerows have been highlighted as a priority habitat as part of the Scottish Borders Local Biodiversity Action Plan, this scheme offers an opportunity to improve the existing hedgerows in the vicinity of the A68.

The main characteristic of the area is that it is the transitional area at the head of the Leader valley between the wider agricultural valley and the hills, with important views to the north and south. Given the focus beyond this immediate area, the value of this area and its sensitivity to change are assessed as being medium.

Photograph 5: Typical example of the hawthorn hedge bordering the A68.

The locations where the above photographs were taken are shown on Figure 9.1. A summary of the Landscape Attributes is provided in Table 9.5 below.

Table 9.5. Summary of Landscape Attributes.

Landscape Attributes	Description
Positive Character	The site is an attractive upper river valley with good views to north and south
Negative Character	The A68 is a disturbance in the area
Landscape Sensitivity	Medium
Likely Landscape Trends	Increased traffic, which may happen over time could reduce visual and environmental amenity
Likely Trends (Do Minimum)	If traffic increased this would reduce visual amenity
Landscape Value and Public Perception	This is an attractive landscape, with particular ecological value associated with the river.

9.2 Visual

9.2.1 Introduction

This section presents the method and baseline conditions for the evaluation of the impacts of the proposed road improvement options on the existing views and visual amenity of the study area. Visual amenity is defined as the pleasantness of the view or outlook of an identified receptor or group of receptors.

The visual impact assessment determines the degree of anticipated change to visual amenity that would occur as a result of the proposed scheme to buildings, areas of public open space, roads and footpaths. The buildings, open spaces, roads and footpaths that would yield views of the road development are collectively referred to as 'receptors'. The potential to mitigate adverse impacts has been taken into account in the assessment and the residual impacts identified.

The cumulative visual impacts are considered at the end of this section.

9.2.2 Methods

Data Sources

The visual assessment was undertaken in accordance with DMRB (Volume 11, Section 3, Part 5) with reference to the following documents:

- 'Landscape & Visual Assessment Supplementary Guidance (LVASG) (Scottish Executive; 2002).
- 'Guidelines for Landscape and Visual Impact Assessment' (GLVIA) (Institute of Environmental Management and Assessment; IEMA;2002).
- 'Cost Effective Landscape; Learning from Nature' (Cullen) (The Scottish Office; 1998).
- Planning Advice Note (PAN) 58; Environmental Impact Assessment (Scottish Executive 1999).

The following data sources were utilised in the visual assessment:

- Scheme drawings.
- Field studies to identify buildings, roads and footpaths inter-visible with the site and assess the likely impacts of the proposals.
- Landscape features and visual receptors plan prepared to indicate those areas of land and buildings that may have views of the proposed scheme during construction and during the winter 15 years after completion.

9.2.3 Visual Impact Assessment Methods

All the receptors / viewpoints in the study area that are likely to experience visual impacts were identified. In order to assess the significance of any impacts, the sensitivity to change of the receptors and the likely magnitude of change were considered as outlined below.

Sensitivity of Receptors

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

- The nature and context of the receptors/viewpoints.
- An assessment of the expectations of users/receptors.
- The importance and value of the changed landscape within the view of the receptor (i.e. relationship between the direction of the view and the location of the proposals).
- The nature of the existing view.

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

Table 9.6. Visual Sensitivity of Receptors to Change.

Sensitivity	Criteria
High	Receptors where the changed landscape within the view is of high value and importance and the receptor will notice a significant change to visual amenity. e.g. residential properties / footpaths.
Medium	Receptors where the changed landscape within the view is not perceived as a major element in the overall view and not crucial to their visual amenity. Sporting / recreational facilities.
Low	Receptors where the changed landscape within the view is unimportant / irrelevant and/or the users are not particularly sensitive to change. Industry / places of work.
Negligible	Receptors where the view has little or no impact, e.g. because of distance.

Magnitude of Change

The assessment of magnitude of change includes the consideration of the likely effects of development on visual amenity, taking into consideration the scale of the change to the landscape, the addition or loss of landscape elements, the change in landscape character and the amount/extent of the view affected. The criteria for the magnitude of change are presented in Table 9.7.

The main elements of magnitude evaluation include:

- The extent of the receptor's 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 impacts and opportunities for landscape enhancement.

Table 9.7. Visual Magnitude of Change Criteria.

Magnitude	Criteria
Major	The proposals dominate the view and fundamentally change its character and components.
Moderate	The proposals are noticeable in the view, affecting its character and altering some of its components and features.
Slight	The changes are only a minor element of the overall view, which are likely to be missed by the casual observer and/or scarcely appreciated.
Negligible	Virtual imperceptible change (equates to a no change situation) to existing views and visual amenity

Significance of Impact

The significance of impact (adverse or beneficial) was determined using a matrix of sensitivity and magnitude, as shown in the Table 9.8 below. As with consideration of landscape impact significance, professional judgement and experience were used to confirm the assessment of significance taking into account that the criteria represents levels on a continuum or continuous gradation depending on the relative importance of sensitivity and magnitude.

Table 9.8. Significance of Visual Impact Criteria.

Sensitivity	Magnitude			
	Major	Moderate	Slight	Negligible
High	Major	Major/Moderate	Moderate	Slight
Medium	Major/Moderate	Moderate	Slight/Moderate	Negligible
Low	Moderate	Slight/Moderate	Slight/Negligible	Negligible
Negligible	Slight	Slight/Negligible	Negligible	Negligible

For the purpose of this assessment, impacts of moderate or greater are considered to be significant, as this is the level at which changes would be clearly perceived. Impacts less than moderate are not considered to be significant.

9.2.4 Baseline Conditions

Visual Evaluation

The 'Guidelines for Landscape and Visual Impact Assessment' (IEMA; 2002) state that 'landscape and visual assessments are separate although linked procedures. The landscape baseline, its analysis and the assessment of landscape effects all contribute to the baseline for visual assessment studies'. Accordingly the baseline landscape information provided in Section 9.1.3 has been used in assessing the visual impacts.

Adverse visual impacts will also be mitigated by the landscape mitigation measures described later in Section 9.4 and shown on Figures 9.2, 9.3 and 9.4.

Properties

Visual receptors relating to the scheme comprise the residential properties on the east side of the village of Oxton. The dwellings potentially most affected are Howden Mill, Redstone Lodge, The Granary, No 2 Station Road and Leaderbank (shown on Figure 9.1). A further property, Riggsyde, is situated immediately adjacent to the A68, with access to the property directly from the main road. This is at present badly affected by the trunk road because it is so close to it.

Headshaw Farm is positioned on the side of the hill to the north of the scheme, looking south down the valley. The scheme could be visible from the Shieling to the north of the A68, but trees, which provide screening from the road, surround this property.

The village of Oxton sits on a bank to the west of the Leader Water. The houses on the east of the village therefore look directly across the valley towards the A68. Those identified above have windows or direct views to the road because of their orientation.

Roads, Paths and Other Public Places

The main receptors will be the travellers on the A68. There are no formal footpaths within the study area, however, informal accesses to the hills may occur with views to the road. There are no paths along the watercourses within the study area.

The D47/5, the C83 and the C84 all join the A68 on the stretch of road affected by the scheme, and may be considered as minor receptors of the proposals. These are small local roads with low levels of traffic. The D47/5 joins the A68 from the east. There is only a short section of road as it crosses the valley from which the A68 is visible. The C83 and C84 join the A68 from the west. Again the A68 is visible as the roads cross the valley, but as these road areas are lower than the A68 all that is visible is the road embankment.

There are five existing lay-bys on this stretch of road, two lay-bys, two bus lay-bys and one small emergency stop lay-by with emergency telephone, which is currently out of use.

The scheme is not visible from the caravan site, which is situated at Carfraemill.

9.3 Assessment of Impacts

This section describes the potential landscape and visual impacts arising from the proposed scheme.

The construction of a new road or the improvement of an existing road can result in positive (beneficial) and negative (adverse) landscape and visual impacts. These can be direct, indirect or cumulative and include the following.

Direct

- A change in the landform and land use.
- Loss of landscape elements both natural and man-made resulting in:
- A change in landscape patterns, character and sense of place;
- Vehicles and/or the road structure, including signs, furniture and lighting, becoming more or less apparent in the landscape; and
- A change in noise disturbance and amenity.

Indirect

- Farm severance causing a change in land use; and
- A change in vegetation resulting from changed ground conditions and micro-climate.

Cumulative

- Piecemeal loss of landscape elements such as hedges, walls, dykes or other traditional features impacting on regional landscape character;
- Increased level of adverse impacts due to increased use of the road; and
- A change in the way the landscape is experienced.

9.3.1 Effects on Landscape Character

The scheme essentially comprises road widening with the creation of dedicated overtaking opportunities on the south side of Soutra Hill. The scheme extends from

approximately 475m north of the bottom of Soutra South climbing lane, Ch 75, to the north end of the differential acceleration lane (DAL) at Carfraemill Roundabout, Ch 2250, a distance of approximately 2175m.

The proposed scheme is an online widening scheme and the widening varies from one side of the existing road to the other. At Riggsyde, Ch 1500, because of the proximity of the private dwelling to the road, the widening has to be to the east. The widening immediately north of Carfraemill is to the west to tie into the existing widened differential acceleration lane section.

The scheme will have some landscape impact in terms of loss of existing hedgerow at its southern end, and also in terms of the embankments required to support the carriageway on either side. However, given the low value (poor condition) of the hedgerow, the fact that the A68 already runs down this valley and the on-line nature of the scheme, the landscape impact magnitude is assessed as **moderate**. The scheme in fact offers an opportunity for improving the current situation in terms of reinstating the hedges. They are currently in a degraded and very gappy state. The Scottish Wildlife Trust (SWT), in response to consultation regarding this scheme noted that hedgerows have been highlighted as a priority habitat as part of the Scottish Borders Local Biodiversity Action plan. Overall therefore, the significance of this change is only **slight / moderate adverse**.

In addition to the mainline widening, the proposed scheme includes relocating the D47/5 Carfrae junction around 110 metres to the south with the C83 Kirktonhill junction stopped up. In this area the widening of the A68 is to the east and as such Headshaw Burn need not be diverted, but there is an opportunity for additional planting between the burn and the new D47/5 Carfrae junction.

With the C83 junction to be stopped up, it is proposed to construct a new side road between the existing C84 and C83 side roads. This new road will improve links to the west of the trunk road as well as providing access to Riggsyde (via a short length of access track) and the adjacent fields. The southern most section of the new side road follows the line of existing hedgerows / trees, fitting with the existing lines of the landscape. At around Ch 500 the road leaves the line of existing trees before crossing the Headshaw Burn and tying into the existing C83 road at its junction with the D1/5. The southern section of the new side road (Ch 0 to Ch 550) is predominantly at grade and the topography of the area is such that this part of the new route will not be visible from the A68, and the existing hedges and trees will screen it from Oxton and the C83. Between approximately Ch 550 and Ch 800, the road will be on embankment to allow it to cross the Headshaw Burn at approximately Ch 700 before joining the C83 just before Ch 1000. The northern most section of this side road from approximately Ch 500 will be visible briefly from the southbound carriageway of the A68 and the southern section will be visible from Riggsyde, therefore a hedge will be planted to the east of the new side road along its entire length. No further planting of an extensive nature will be required along the new side road due to the fact that it mainly follows the route of existing trees however a short length of hedge (approximately 100m) will be planted

between the line of existing trees and the junction with the C84. This will help complete the screening of the new side road from Oxton. The visual impact of the new side road and private access to Riggsyde on the landscape character would be of slight magnitude on receptors of medium sensitivity. The significance of the change is therefore assessed as **slight / moderate adverse.**

To summarise, the proposed scheme has little impact on any significant landscape features and is therefore assessed as of **slight / moderate adverse** significance.

9.3.2 Visual Effects

Given the presence of the existing A68 within the study area and the fact that the road improvements will have a more immediate effect on road safety than on increasing traffic volumes, in general the visual effects once construction is complete will not be significant. Table 9.9 provides a summary of the visual receptors and the degree of impact predicted. Overall, the scheme has a **slight adverse** visual effect on existing visual amenity and at the same time it affords opportunities for additional planting which might in the long run be regarded as positive improvements.

Table 9.9. Main Visual Receptors: Visual Impacts.

Main Receptors	Proposed Scheme
Travellers on the A68	Negligible
Travellers on the minor roads	Negligible
Headshaw Farm	Negligible
The Sheiling	N/A with current screening
Riggsyde	Moderate/slight adverse
East side of Oxton: Howden Mill Redstone lodge The Granery No 2 Station Road Leader Bank	Slight adverse

9.4 Mitigation

9.4.1 Introduction

Mitigation of adverse impacts associated with the introduction of a new road or modification to an existing road within the landscape involves a combination of three approaches:

- ***Prevention:*** Prevention of adverse effects at source – e.g. alignment in cutting to prevent any visual impact.

- ***Reduction:*** Reduction of adverse impacts that cannot be eliminated by prevention – e.g. environmental barriers in the form of mounds, fencing or tree and hedge planting to reduce the impacts to acceptable levels.

- ***Offsetting:*** The provision of alternative or compensatory measures where appropriate and feasible e.g. the creation of new habitats to compensate for loss of habitat as a result of the road proposals.

Landscape and visual factors are closely related and consequently the mitigation measures described in this section relate to both.

9.4.2 Scheme Specific Design Requirements

The landscape mitigation for the scheme is shown on the indicative landscape plans, drawing numbers 140, 141 and 142, enclosed as Figures 9.2, 9.3 and 9.4 respectively.

In this particular scheme, these categories would be applied as follows:

- ***Prevention:*** The widening follows the existing road alignment and the new side road largely follows the existing hedgerow, fence line and the valley floor.

- ***Reduction:*** The hedgerows along the A68 will be improved as a result of new planting. The lime tree avenue will be extended to the C84 Oxton junction. Hedgerows will also be planted adjacent to parts of the new side road.

- ***Offsetting:*** Additional planting will be provided by the burn at the realigned D47/5 Carfrae junction, on the embankment to the east of the proposed scheme between Ch 910 and 1180, on the embankment opposite Riggsyde and at the improved C84 junction to Oxton.

9.4.3 General Principles of Landscape Design and Mitigation Objectives

Detailed consideration of horizontal and vertical alignment, junction arrangements and side road provision during development of the scheme design involved:

- Consideration of how to achieve best fit with the contours.
- Retention and best use of existing vegetation.
- Protection of nearby properties.
- Avoidance of the loss or damage to landscape elements such as hedges, walls, woodland, watercourses and valued landform.
- Avoidance of the loss or damage to sites of ecological or archaeological interest.

The following techniques have been and will continue to be considered and developed during the detailed design for the proposed scheme, in consultation with interested parties, in an effort to mitigate impacts and where appropriate enhance amenity and landscape character.

- Landscape planting design.
- Earth moulding.
- Environmental barriers.
- Restoration of hedge/wall patterns.
- Reinstatement and enhancement of habitat connectivity.
- Making a positive contribution to amenity and biodiversity.

The procedure set out in the Scottish Executive landscape design and management policy 'Cost Effective Landscaping: Learning from Nature' and the principles of landscape design detailed in DMRB (Volume 10) will be followed in order to ensure that all mitigation measures are effective, represent best value and make a positive contribution to the character and bio-diversity of the landscape surrounding the site.

9.4.4 Planting

The planting design will be developed to meet specific mitigation objectives including, for example:

- Screening the road, and in particular the vehicles upon it, from residential properties.
- Preserving and enhancing landscape character.
- Consideration of the views from the road.
- Designing with wildlife in mind to enhance biodiversity whilst not compromising primary design objectives. Particular attention will be given to providing habitat connectivity.

Where the design objectives can be met effectively by native species they will be used. Non-native species that are characteristic species growing well in the area may be considered if they are important contributors to local landscape character. Young stock is generally easier to establish and consequently will form the basis of most mixes with larger trees to give the planting some instant recognition.

9.4.5 Seeding

The primary objectives for the grass seeding will be to:

- seed all disturbed areas punctually to prevent surface erosion;
- formulate a seed mixture that requires minimal maintenance; and
- contribute to visual amenity and biodiversity.

The different design objectives for the areas to be grass seeded will require different mixtures - for example, land to be returned to agricultural use will probably require

rapid growing, palatable species and the land surrounding any drainage features a mixture specifically formulated for its wildlife value.

Wildflower species will be carefully selected to be appropriate for the locality and be of Scottish local provenance.

9.5 Residual Impacts

The landscape and visual impact of the proposed scheme has been assessed taking into account the above mitigation in the winter, fifteen years following the scheme opening. It indicates that appropriate mitigation measures as recommended above will reduce the significance of the visual and landscape impact of the scheme to **negligible** and therefore not significant overall.

The existing adverse impact of the road in the area will not be significantly changed, but there will be an opportunity to increase visual amenity and biodiversity by improving the hedgerows through planting enhancements, and carrying out additional woodland planting.