10. Landscape

Summary

This chapter considers the effects of the proposed scheme on the landscape resource. The assessment has been undertaken following DMRB guidance and the Guidelines for Landscape and Visual Impact Assessment 3rd Edition (GLVIA3), taking account of the results of scoping and consultation.

The assessment confirmed baseline conditions for a study area comprising the proposed scheme and an area extending up to 5km from it. The extent of the study area was established through desk-based survey and site survey. Designated landscape receptors located within the study area include the River Tay (Dunkeld) National Scenic Area (NSA). In addition, four Landscape Character Types (LCTs) and four Local Landscape Character Areas (LLCAs) have been identified. Potential effects of the proposed scheme on landscape receptors would arise from construction activities such as the removal of roadside vegetation, the alteration of existing roadside landform and rock outcrops, in addition to the construction of structures and earthworks (for example the Birnam and Dalguise grade separated junctions, the Dunkeld & Birnam Station 're-integration' and River Tay Bridge). Potential effects would also arise from the operation of the additional carriageway and associated route infrastructure in addition to the changed appearance of the landscape and the associated change in the perception of the River Tay (Dunkeld) NSA.

To mitigate potential effects, embedded, standard and project specific mitigation measures have been developed through an iterative design process. Embedded mitigation measures adopted include the careful alignment of the proposed scheme to avoid or reduce potential impacts on landscape features, particularly those which contribute to Special Landscape Qualities (SLQs) of the NSA. This has primarily been achieved through online widening of the existing A9 and also the grading out of cuttings and embankments to reflect the local topography, as well as the careful siting of SuDS features.

Specific mitigation measures include woodland planting to integrate the proposed scheme into the landscape. Where planting is specified, native and non-native plant species will be used to re-establish or reinforce landscape character. Whilst there is a focus on planting, mitigation measures will also influence the design of structures such as the River Tay Bridge, and SuDS features. Where exposure of rock cuttings is anticipated, mitigation includes creating a rugged, naturalistic appearance to reflect the character of the rock and fit with the surrounding landscape.

The assessment of residual effects on landscape receptors has taken into account proposed mitigation, considering the proposed scheme in the winter of the year of opening (when planting has been implemented but has not established) and in the summer, 15 years after opening (when the proposed planting would be reasonably established). Direct effects from the construction and operation of the proposed scheme are predicted to occur on the Strath Tay: Mid Glen LLCA, Strath Tay: Lower Glen LLCA, Strath Tay: Dunkeld and Birnam LLCA (Settlement), Lowland River Corridor: Strath Tay LLCA and Lowland Hills – Tayside LCT.

The proposed scheme would also affect landscape elements within the River Tay (Dunkeld) NSA, resulting from carriageway widening and construction of earthworks and structures (particularly those associated with proposed grade separated junctions) which would alter landcover and landform and result in loss of woodland along the route.

In the winter of the year of opening (2036) it is predicted that significant (**Large**) direct residual effects would occur on the Strath Tay: Lower Glen LLCA. Significant (**Moderate**) direct residual effects are also predicted during the winter of the year of opening on the Lowland River Corridor: Strath Tay LLCA and Strath Tay: Dunkeld and Birnam LLCA (Settlement). The residual effects would be due largely to formation of embankments and cuttings, road widening, structures, new junctions and other infrastructure. These would result in the loss of natural topographic features, mature and established woodland, and farmland in the vicinity of the existing A9. Indirect residual effects experienced in adjoining landscape character units as a result of the changes in the landscape along the road corridor are predicted within the Foothills – Tayside LCT, Mid Upland Glens LCT and Transitional Moorland and Forest LCT. These residual effects are, however, not predicted to be significant. Slight beneficial direct residual effects are predicted during the winter of the year of opening on the Lowland Hills -Tayside LCT due to the introduction of areas of mixed and broadleaved compensatory woodland planting at Muir of Thorn.

As planting establishes and the proposed scheme becomes more integrated into the landscape it is predicted that residual effects would reduce. However, whilst the level of effect on the Strath Tay: Lower Glen LLCA would reduce to some extent after establishment of proposed woodland planting, it is predicted to remain significant (**Moderate**) in summer after 15 years due largely to the effects of the Birnam and Dalguise grade separated junctions and cumulative losses of established woodland along the route corridor. The level of effects on the Lowland River Corridor: Strath Tay LLCA and Strath Tay: Dunkeld and Birnam LLCA (Settlement) would reduce to Slight (non-significant) in summer after 15 years following the establishment of the proposed mitigation planting. **Moderate** beneficial effects are predicted on the Lowland Hills -Tayside LCT in summer after 15 years following the establishment of the proposed areas of mixed and broadleaved compensatory woodland planting at Muir of Thorn.

10.1 Introduction

10.1.1 This chapter presents the DMRB Stage 3 assessment of the effects of the proposed scheme on the landscape resource. The assessment of effects on the landscape resource is primarily concerned with changes to:

- specific landscape features and elements;
- the overall pattern of the elements, which together define the landscape character and local regional distinctiveness;
- areas of particular interest and/or value, such as designated landscapes, conservation sites and cultural associations; and
- perceived characteristics of the landscape, such as tranquillity and remoteness.

10.1.2 The chapter is supported by the following figures:

- Figure 10.1: Landscape Designations and other associated Designations;
- Figure 10.2: Landscape Character Areas and Types;
- Figure 10.3: Townscape Character Areas;
- Figure 10.4: Landscape Features Plan;
- Figure 10.5: Visibility Analysis;
- Figure 10.6: Landscape and Ecological Mitigation;
- Figure 10.7: Cross-sections;
- Figure 10.8: Typical Planting Structure;
- Figure 10.9: Trees by Height Weighting;
- Figure 10.10: Trees by Canopy Weighting;
- Figure 10.11: Trees by Combined Weighting and Significant Trees; and
- Figure 10.12: Tree Removal and Retention Plan.

10.1.3 The Chapter is also supported by the following appendices:

- A10.1: Landscape Character;
- A10.2 Townscape Character;
- A10.3: Special Landscape Qualities of the River Tay (Dunkeld) National Scenic Area;
- A10.4: Assessment of Residual Indirect Effects on Landscape Character;
- A10.5: Strategic Environmental Design Principles: Landscape;
- A10.6: Landscape Objectives;
- A10.7: SuDS Design Principles; and
- A10.8: Arboricultural Assessment.

10.1.4 Further considerations that specifically inter-relate with this landscape assessment are addressed separately as follows:

- Chapter 11 (Visual): assessment of effects on the visual amenity and views experienced by people from publicly accessible viewpoints and nearby buildings, including residential properties: and
- Chapter 9 (Cultural Heritage): assessment of effects on cultural heritage assets.

10.1.5 In addition, Chapter 12 (Biodiversity) informs this chapter, due to the influences of vegetation and wildlife in relation to the proposed mitigation measures, particularly planting.

Legislative and Policy Background

10.1.6 The following section provides a summary of policies and plans that are relevant to landscape and visual aspects of the proposed scheme.

National Policy

National Planning Framework 4 (NPF4) (Scottish Government, 2023)

10.1.7 National Planning Framework 4 (NPF4) (Scottish Government, 2023) was adopted in February 2023. The Framework sets out the Scottish Ministers' policies and proposals for the development and use of land in Scotland and details the long-term spatial strategy, spatial principles, priority actions and National Developments up to 2045.

10.1.8 The vision set out in NPF4 is to plan future places in Scotland in line with six overarching spatial principles. These principles will play a key role in delivering on the United Nations (UN) Sustainable Development Goals (SDGs) and Scotland's national outcomes. By applying these spatial principles, Scotland's national spatial strategy will support the planning and delivery of sustainable, liveable and productive places. NPF4 identifies regional spatial priorities for five broad regions of Scotland which will inform the preparation of regional spatial strategies (RSS) and Local Development Plans (LDPs) by planning authorities.

10.1.9 NPF4 policies 4 (Natural Places), 6 (Forestry, Woodland and Trees), 7 (Historic Assets and Places), and 14 (Design, Quality, and Place) are the main policies relevant to landscape and visual considerations of the proposed scheme.

Local Policy and Guidance

Perth and Kinross Local Development Plan 2 (PKC, 2019)

10.1.10 Perth & Kinross Council's Local Development Plan 2 (LDP) (PKC, Adopted 29th November 2019) includes policies which seek to protect important landscapes and landscape features from inappropriate development, and also to shape the design of development to conserve and enhance the landscape quality. The following sets out the main policies relevant to landscape and visual considerations of the proposed scheme.

10.1.11 Policy 1 (Placemaking) states: *'Development must contribute positively to the quality of the surrounding built and natural environment. All development should be planned and designed with reference to climate change, mitigation and adaptation. The design, density and siting of development should respect the character and amenity of the place, and should create and improve links within and, where practical, beyond the site. Proposals should also incorporate new landscape and planting works appropriate to the local context and the scale and nature of the development. All proposals should… Consider and respect site topography and any surrounding important landmarks, views or skylines, as well as the wider landscape character of the area…Incorporate green infrastructure into new developments to promote active travel and make connections where possible to blue and green networks.'*

10.1.12 Section 3.3 (A Natural, Resilient Place) features Key Objectives including: '*Protect and enhance the character, diversity, and special qualities of the area's landscapes to ensure that new development does not exceed the capacity of the landscape in which it lies*.'

10.1.13 Policy 39 (Landscape) states: *'Development and land use change, including the creation of new hill tracks, should be compatible with the distinctive characteristics and features of Perth and Kinross's landscapes; which requires reference to the Tayside Landscape Character Assessment. Accordingly, development proposals will be supported where they do not conflict with the aim of maintaining and enhancing the landscape qualities of Perth and Kinross.'*

10.1.14 Policy 40 (Forestry, Woodland and Trees) describes how *'The Council will support proposals which… protect existing trees/woodland including orchards, especially those with high natural, historic and cultural heritage value…seek to secure establishment of new woodland in advance of major developments where practicable and secure new tree planting in line with the guidance contained in the Perth and Kinross Forest and Woodland Strategy. The planting of native trees and woodland will be sought where it is appropriate.'*

10.1.15 Policy 42 (Green Infrastructure) explains *'The Council will require all new development to contribute to green infrastructure by…creating new multifunctional green infrastructure, particularly where it can be used to mitigate any negative environmental impacts of the development, and/or create linkages to wider green and blue networks… incorporating high standards of environmental design…ensuring that development does not lead to the fragmentation of existing green and blue networks…'*

Forest and Woodland Strategy, 2014- 2024 Supplementary Guidance (PKC, 2020a)

10.1.16 The Forest and Woodland Strategy, 2014-2024 Supplementary Guidance (PKC, 2020a) is relevant to landscape considerations of the proposed scheme.

10.1.17 There are seven themes that contribute to the delivery of the guidance, including *'Environmental Quality'*, which considers the protection and enhancement of the quality of natural resources, improving scenery and use of the area's unique historic environment.

10.1.18 Opportunities for action listed as part of the *'Environmental Quality'* theme include: *'Plant new, and manage existing, site-appropriate woodland and trees alongside and visible from important transport routes whilst ensuring that important views are retained.'*

10.2 Approach and Methods

General

10.2.1 The landscape assessment was undertaken in accordance with DMRB LA 107 'Landscape and Visual Effects' Revision 2 (National Highways et al., 2020a), and with reference to Guidelines for Landscape and Visual Impact Assessment 3rd Edition (GLVIA3) (Landscape Institute and IEMA, 2013).

10.2.2 In addition, the approach to the assessment and design of the landscape and visual mitigation proposals has also been informed by the following documents:

- DMRB LA 104 'Environmental Assessment and Monitoring' (National Highways et al., 2020b);
- DMRB LD 119 'Roadside Environment Mitigation and Enhancement' (National Highways et al., 2020c);
- DMRB LD 117 'Landscape Design' (National Highways et al., 2024);
- Fitting Landscapes: Securing more Sustainable Landscapes (Transport Scotland, 2014a);
- Planning Advice Note (PAN) 1/2013: Environmental Impact Assessment Revision 1 (Scottish Government, 2017);
- Guidance for Assessment of Effects on Special Landscape Qualities (NatureScot, 2025)
- The SuDS Manual C753 (Construction Industry Research and Information Association (CIRIA), 2015); and
- SuDS for Roads (SuDS Scottish Working Party, 2009).

10.2.3 Agreed collective assessment methodology has been developed for the A9 Dualling Programme through consultation with key environmental stakeholders (including NatureScot and PKC).

10.2.4 A staged approach to the assessment has been adopted comprising:

- scoping and consultation, including agreement of the approach to the assessment and the extent of the study area;
- baseline assessment, which is a description of the landscape resource within the study area following desk study and site surveys;
- assessment of the value, susceptibility, and sensitivity of the landscape resource;
- assessment and description of potential impacts arising from the proposed scheme, and their likely effects upon the landscape resource;
- development of proposed mitigation and potential enhancement measures (which are additional to the embedded mitigation measures which have been developed at DMRB Stage 2); and
- assessment and description of residual effects (i.e. those that would remain after mitigation) during the construction phase and the operational phase.

10.2.5 In accordance with LA107, separate assessments were undertaken for the following scenarios:

- In the winter of the proposed year of opening in 2036, taking account of the completed project (including embedded mitigation measures such as the route alignment and formation of earthworks) in addition to the traffic using it; which represents a maximum-impact situation (in comparison to a 'do-nothing scenario'), before any planted mitigation can take effect.
- In the summer of the 15th year after the proposed year of opening in 2051, taking account of the completed project (including embedded mitigation) in addition to the traffic using it, which represents a reduced-impact scenario, where any planted mitigation measures can be expected to be reasonably effective.

10.2.6 In addition, qualitative commentary has been provided on the likely longer-term reductions in impacts beyond 15 years in recognition that in many areas the proposed planting is expected to take considerably longer to reach a level of maturity equivalent to that of existing areas of established woodland affected by the proposed scheme.

10.2.7 The approach and methods have also been informed by the recommendations made in the A9 Dualling Programme Strategic Environmental Assessment (SEA) Report and Appendix F (Strategic Landscape Review) of the SEA Addendum (Transport Scotland, 2013 and 2014b). The SEA recommended that early consultation on landscape with Scottish Natural Heritage (SNH) (now rebranded as NatureScot), and Historic Environment Scotland (HES) be undertaken, and the results of this consultation considered within the DMRB Stage 3 assessment process. More detailed information on the recommendations made in the SEA is presented in Appendix B of the SEA Addendum (Strategic Environmental Assessment (SEA) Monitoring Framework).

Scoping and Consultation

10.2.8 Through the Environmental Steering Group (ESG), NatureScot and Perth & Kinross Council (PKC) have been consulted on the approach to the DMRB Stage 3 assessment to identify the key issues to be addressed and establish appropriate landscape mitigation measures.

Public Consultation

10.2.9 Consultation with local communities, stakeholders and road users who are likely to be affected by the project was undertaken during an in-person Public Exhibition and a virtual exhibition, with feedback gathered between January-March 2024. The feedback provided during the consultation process regarding local issues and concerns relevant to landscape and visual matters has been taken into consideration in the landscape and visual assessments and development of mitigation proposals (Figure 10.6). Concerns raised included:

- loss of woodland (including areas of verified Ancient Woodland), resulting in loss of biodiversity;
- risk of windthrow for remaining woodland;
- loss of screening vegetation;
- the size of the proposed mitigation planting stock;

- encroachment of the proposed scheme on the footprint of gardens; and
- effects on the River Tay (Dunkeld) NSA, the area's beauty and tourism.

10.2.10 The proposed scheme has been designed to address these concerns where possible, for example by restricting existing woodland loss and inclusion of steep engineered slopes in some locations to limit the footprint of the earthworks and thus restrict required felling. Where loss of woodland cannot be prevented by design, mitigation planting measures have been implemented using a mixture of native species and plant sizes to reinstate woodland, provide visual screening and reduce impacts on the Special Landscape Qualities of the River Tay (Dunkeld) NSA. A comprehensive list of all the proposed mitigation measures is presented in Section 10.5 (Mitigation).

Community Objectives

10.2.11 At an early stage in the A9 Co-Creative Process, the Birnam to Ballinluig A9 Community Group generated seven community objectives. The following two community objectives are relevant to landscape and visual effects:

- Community Objective 2: Protect and enhance the scenic beauty and natural heritage of the area and its distinctive character and quality.
- Community Objective 5: Examine and identify opportunities to enhance the levels of cycling and walking for transport and leisure, including the improvement of existing footpaths and cycle ways, to promote positive mental health and well-being.

10.2.12 The proposed scheme has been designed to include mitigation measures that contribute to these two objectives, for example, by protecting existing vegetation where possible, in addition to the establishment of planting proposals to reinstate woodland lost during construction and reduce impacts on the Special Landscape Qualities of the River Tay (Dunkeld) NSA.

10.2.13 Additional detail on scoping and consultation is provided in Chapter 7 (Consultation and Scoping).

Study Area

10.2.14 A study area extending to 5km from the proposed scheme has been adopted for this assessment (refer to Figure 10.1). This size of study area was based on professional experience and judgement. Whilst it is possible that there may be some impacts on perceptual qualities of the landscape beyond 5km, such as the sense of remoteness and tranquillity due to changes in views beyond this study area, these are likely to be not significant due to distance and intervening topography and/or vegetation.

10.2.15 Within this 5km study area, Zones of Theoretical Visibility (ZTVs) have been prepared for the existing A9 (Figure 11.1) and the proposed scheme (Figure 11.2). The ZTVs have been produced using a 'bare-earth' digital terrain model (DTM) without screening or filtering of visibility by existing built features or vegetation, which were identified during site survey work and are taken account of in the assessment. Visibility analysis of the proposed scheme together with LCA and LLCA that fall within the Study Area are shown in Figure 10.5. Further

information regarding the production of the ZTVs is provided in Chapter 11 (Visual), Section 11.2 (Approach and Methods).

Baseline Assessment

10.2.16 Baseline conditions for the study area have been established through desk-based and site surveys, details of which are presented in Section 10.3 (Baseline Conditions).

10.2.17 Baseline landscape conditions are those that exist at the time of desk and site survey, as well as future changes that are assumed likely to occur with or without the implementation of the proposed scheme such as development with planning permission or under construction alongside the existing A9 or harvesting and re-stocking of commercial forestry plantations.

Desk-based Assessment

10.2.18 Baseline information was collected through a desk-based assessment (including review of the previous DMRB Stage 2 landscape assessment (A9 Dualling Programme: Pass of Birnam to Tay Crossing DMRB Stage 2 Scheme Assessment Report, Volumes 1-3, Part 3: Environmental Assessment (Jacobs 2022)) in addition to review of the following information sources:

- 1:5,000, 1:10,000, 1:25,000 and 1:50,000 Ordnance Survey mapping;
- Google Earth web-based photography;
- Inventory of Gardens and Designed Landscapes (Historic Environment Scotland, 1987);
- Historic Environment Desk-based Assessment of Murthly Castle Garden and Designed Landscape Perth (Oliver Jessop and John Phibbs, 2022);
- Aerial photography provided by Transport Scotland (Bluesky, 2020);
- Jacobs' GIS environmental constraints datasets (obtained through stakeholder consultation);
- A9 Dualling Programme. Strategic Environmental Assessment (SEA) Report (Transport Scotland, 2013);
- A9 Dualling Programme. Strategic Environmental Assessment (SEA). Environmental Report and Addendum. Appendix F – Strategic Landscape Review Report (Transport Scotland, 2014b);
- A9 Dualling Programme. Strategic Environmental Assessment (SEA). Environmental Report and Addendum. Appendix B – Monitoring Framework – Design Section Restraints (Transport Scotland, 2014c);
- Landscape Study to Inform Planning for Wind Energy Final Report (David Tyldesley and Associates/PKC, 2010);
- Forest & Woodland Strategy 2014 - 2024 Supplementary Guidance (PKC, 2020a);
- Landscape Supplementary Guidance (PKC, 2020b);
- PKC Local Development Plan 2 (PKC, 2019);
- Dunkeld Conservation Area Appraisal (PKC, 2011);

- The Special Qualities of the National Scenic Areas, NatureScot Commissioned Report No.374 (NatureScot, 2010);
- Guidance for Assessment of Effects on Special Landscape Qualities (NatureScot, 2025);
- NatureScot, Landscape Character Assessment in Scotland web page and Landscape Character Types Map and Descriptions, (NatureScot, 2019; and
- Perthshire Big Tree Country (Perth and Kinross Countryside Trust).

Site Surveys

10.2.19 The site surveys were carried out by a team of landscape architects on foot and by car. Data on landscape features and characteristics were collected, as well as photographs of landscape features likely to be physically affected and photographs to/from key viewpoints within landscapes from which views of the proposed scheme would be likely.

Assessment of Effects

10.2.20 As detailed below, significance of effects has been assessed based on the sensitivity to change of the landscape receptor and the magnitude of impacts that would result from the construction and operation of the proposed scheme. The use of impact and effect in this chapter is consistent with DMRB LA 104 which sets out the requirements for environmental assessment of projects, including reporting and monitoring of significant adverse environmental effects and is the overarching guidance for the EIA Report.

Sensitivity

10.2.21 In accordance with GLVIA3 and DMRB LA107, the assessment of sensitivity combines professional judgement on the susceptibility of the landscape receptor to the specific type of development proposed, and the value attributed to that receptor.

Landscape Susceptibility

10.2.22 Susceptibility is defined in GLVIA3 as 'the ability of the landscape receptor … to accommodate the proposed development without undue consequences for the maintenance of the baseline situation…' (Landscape Institute and IEMA 2013, p.88 to 89). The susceptibility of landscape receptors to change was assessed using the criteria detailed in Table 10.1, along with professional judgment (where applicable, intermediate levels of medium/high or low/medium may be used).

Table 10.1: Landscape susceptibility criteria

Susceptibility	Criteria
High	The landscape is unlikely to accommodate the proposed change without undue consequences. There is unlikely to be any existing similar development to the type proposed within the landscape.

Susceptibility	Criteria
Medium	The landscape is likely to be able to accommodate the proposed change albeit with some consequences. There may be some existing similar development to the type proposed within the landscape.
Low	The landscape will be able to accommodate the proposed change with little or no consequences. There is likely to be existing similar development to the type proposed within the landscape.

Landscape Value

10.2.23 GLVIA3 defines landscape value as '*the relative value that is attached to different landscapes by society…Value can apply to areas of landscape as a whole, or to the individual elements, features and aesthetic or perceptual dimensions which contribute to the character of the landscape'* (Landscape Institute and IEMA 2013, p.80). A review of existing designations (e.g. National Scenic Area (NSA), Special Landscape Area (SLA) etc.) is usually the starting point in understanding value, although it should be noted that value and/or associated susceptibility may not necessarily be uniform across a designated area.

10.2.24 Other designations such as those aimed at aspects of the historic environment (Conservation Areas, Listed Building/Structures) and non-statutory recognition of particular types of environment (such as Gardens and Designed Landscapes) may also influence landscape value. There may also be situations where an undesignated landscape is of value and/or has susceptibility in local terms. Table 10.2 sets out the relative value of generic landscape designations and descriptions.

Table 10.2: Criteria for assessing value of designated landscapes

Designation	Description	Value
World Heritage Sites	Unique sites, features or areas identified as being of international importance according to UNESCO criteria. Consideration should be given to their settings, especially where these contribute to the special qualities for which the landscape is valued.	International/ national
National Parks, National Scenic Areas	Areas of landscape identified as being of national importance for their Natural Beauty (and in the case of National Parks the opportunities they offer for outdoor recreation).	
Historic Environment Scotland Inventory of Gardens and Designed Landscapes	Gardens and designed landscapes included in the Inventory.	

Designation	Description	Value
Local Landscape Designations identified in local planning documents (such as Special or Local Landscape Areas, Areas of Great Landscape Value and similar), Conservation Areas.	Areas of landscape identified as having importance at the local authority level.	Regional/local

10.2.25 There may also be situations where an undesignated landscape is of local value. Establishing the value of undesignated areas requires examination of individual elements of the landscape. Various criteria were considered to help determine value as detailed in Table 10.3 and an overall assessment was made for each receptor in terms of high, medium and low value.

Table 10.3: Criteria for assessing value of non-designated landscapes*

Attribute	Description
Landscape Quality (Condition)	A measure of the physical state of the landscape; its intactness and the condition of individual elements.
Scenic Quality	General appeal of the landscape to the senses.
Rarity	The presence of rare elements, features or landscape types.
Representativeness	Characteristic/feature/element considered a particularly important example.
Conservation/ Cultural Interest	The presence of wildlife, earth science or cultural heritage interest which contributes positively to the landscape.
Recreation Value	Evidence that the landscape is valued for recreational activities where experience of the landscape is important.
Perceptual Aspects	Evidence that a landscape is valued for its wildness/tranquillity.
Associations	Relevant associations with notable figures, such as writers or artists, or events in history that contribute to landscape value.

*Source: Landscape Institute and the Institute for Environmental Management and Assessment (2013).

Evaluation of Landscape Sensitivity

10.2.26 The sensitivity to change of the landscape was assessed on a scale ranging from very high to negligible. Table 10.4 presents the criteria used, along with professional judgement, to inform the evaluation of landscape sensitivity, based on consideration of both susceptibility and value. Where applicable, intermediate levels of medium/high or low/medium sensitivity were adopted.

Table 10.4: Landscape sensitivity criteria

Sensitivity	Criteria
Very High	Landscape of international or high national importance or value with particularly distinctive character, which is considered highly susceptible to relatively small changes. Landscape which by nature of its character and value would have very limited capacity to accommodate change of the type proposed without substantial loss/gain.
High	Landscape of national or regional importance of distinctive character which is considered susceptible to relatively small changes. Landscape which by nature of its character and value would have limited capacity to accommodate change of the type proposed, areas of strong sense of place.
Medium	Landscape of local or community importance with moderately valued characteristics considered reasonably tolerant of change. Some ability to accommodate the proposed change without undue detriment. Landscape which by nature of its character and value would be able to partly accommodate change of the type proposed.
Low	Landscape of generally low-valued characteristics considered potentially tolerant of substantial change. Landscapes which by nature of their character and value would be able to accommodate change of the type proposed.
Negligible	Landscape of very low importance with a high capacity to accommodate change of the type proposed without detriment.

Magnitude

10.2.27 In accordance with DMRB LA 104 and DMRB LA 107, the magnitude of landscape impacts was considered in terms of size or scale, the geographical extent of the area influenced, duration and reversibility.

Size or Scale

10.2.28 The size and/or scale of change in the landscape takes into consideration the following factors:

- the extent/proportion of landscape elements lost or added;
- the contribution of that element to landscape character and the degree to which aesthetic/perceptual aspects are altered; and
- whether the change is likely to alter the key characteristics of the landscape, which are critical to its distinctive character.

Geographical Extent

10.2.29 The geographical area that may experience landscape impacts can generally be considered at the following scales:

- proposed scheme level;
- the immediate setting of the proposed scheme;
- the landscape character area that the proposed scheme would lie within; or
- across several landscape character areas where influences occur on a larger scale.

Duration and Reversibility

10.2.30 In accordance with DMRB LA 104, DMRB LA 107 and GLVIA3, consideration is also given to the duration and reversibility of landscape impacts in the evaluation of magnitude. The duration of impacts is judged on the following scale:

- short-term: under 1 year;
- medium-term: 1-15 years; and
- long-term: over 15 years.

Evaluation of Magnitude

10.2.31 Magnitude of landscape impacts was assessed on a five-point scale, taking account of the degree of landscape change that would result from the proposed scheme, as described in Table 10.5. The permanent operation-phase impacts of the proposed scheme are of long-term duration and largely irreversible and, therefore, are likely to have a higher magnitude than temporary construction-phase impacts such as those arising from haul roads, which are typically short-term and reversible and, therefore, likely to have a lower magnitude.

Table 10.5: Magnitude of landscape impact

Magnitude	Criteria
Major	Notable change in landscape components and characteristics over an extensive area, ranging to very intensive change over a more limited area.
Moderate	Slight changes in landscape components and characteristics over a wide area, ranging to notable changes in a more limited area.
Minor	Localised slight change in landscape characteristics, or to any components of the landscape.
Negligible	Virtually imperceptible change in landscape characteristics over a small area, or to any components of the landscape.
No change	No perceptible change to the landscape resource.

Significance of Effects

10.2.32 The significance of landscape effects has been determined through professional judgement, with reference to the significance matrix provided below in Table 10.6 (and as set out in Table 3.8.1 of DMRB LA 104). The significance of effect has been determined based on consideration of both the sensitivity of the landscape receptors and the predicted magnitude of impacts resulting from the proposed scheme. Significance is defined as Neutral, Slight, Moderate, Large or Very Large, and either adverse or beneficial as shown in Table 10.7.

Table 10.6: Significance matrix

Magnitude / **Sensitivity**	**No change**	**Negligible**	**Minor**	**Moderate**	**Major**
Very High	Neutral	Slight	**Moderate** or **Large**	**Large** or **Very Large**	**Very Large**
High	Neutral	Slight	Slight or **Moderate**	**Moderate** or **Large**	**Large** or **Very Large**
Medium	Neutral	Neutral or Slight	Slight	**Moderate**	**Moderate** or **Large**
Low	Neutral	Neutral or Slight	Neutral or Slight	Slight	Slight or **Moderate**
Negligible	Neutral	Neutral	Neutral or Slight	Neutral or Slight	Slight

10.2.33 Effects assessed as being of **Moderate** significance or greater are considered to constitute significant changes to the fabric, character and/or quality of the landscape, and mitigation would generally be required to reduce these where practicable. Effects of Moderate significance or greater are also considered as being significant in the context of the EIA Regulations.

Table 10.7: Significance of landscape effects

Significance of Effect	**Criteria**
Very Large	Adverse: The proposed scheme results in the total loss or large-scale damage to the existing landscape character (including quality and value) and/or special qualities of the landscape receptor, or to the landscape's characteristic features and/or elements. The proposed scheme introduces a new uncharacteristic, very conspicuous feature or element. Beneficial: The proposed scheme results in the large-scale improvement of landscape character (including quality and value) and/or special qualities of the landscape receptor, or to the landscape's characteristic features and/or elements; and/or

Significance of Effect	Criteria
	addition of new distinctive features or elements, or removal of conspicuous road infrastructure elements.
Large	Adverse: The proposed scheme would be at considerable variance with the character (including quality and value) and/or special qualities of the landscape receptor, degrade or diminish the integrity of a range of characteristic features and/or elements or damage a sense of place. Beneficial: The project would enhance the character (including quality and value) and/or special qualities of the landscape receptor, create an iconic high-quality feature and/or series of elements, or enable a sense of place to be created or enhanced.
Moderate	Adverse: The proposed scheme would noticeably alter the character (including quality and value) and/or special qualities of the landscape receptor, have an adverse effect on characteristic features and/or elements or diminish a sense of place. Beneficial: The proposed scheme would improve the character (including quality and value) and/or special qualities of the landscape receptor, enable the restoration of characteristic features and/or elements partially lost or diminished by inappropriate management or development or enable retention/creation of some sense of place.
Slight	Adverse: The proposed scheme would not quite fit the character (including quality and value) and/or special qualities of the landscape receptor, be at variance with characteristic features and/or elements, or detract from a sense of place. Beneficial: The proposed scheme would complement the character (including quality and value) and/or special qualities of the landscape receptor, maintain or enhance characteristic features and/or elements, and enable some sense of place to be restored.
Neutral	The proposed scheme would maintain the character and/or special qualities of the landscape receptor, blend in with characteristic features and/or elements, and enable a sense of place to be retained.

10.2.34 For the purposes of this assessment, effects on the landscape resource are considered adverse unless otherwise stated.

Cumulative Effects

10.2.35 Potentially significant cumulative effects resulting from the construction and operation of the proposed scheme, and those of the proposed scheme in combination with other reasonably foreseeable developments, are assessed in Chapter 21 (Assessment of Cumulative Effects).

Limitations to Assessment

10.2.36 Uncertainty regarding the details of the construction process and phasing is a limitation of the DMRB Stage 3 Landscape Assessment, however, professional judgement and experience, in addition to the constructability review undertaken by the engineering team has been used to inform the assessment of effects.

10.3 Baseline Conditions

10.3.1 This section identifies the landscape receptors of the study area, taking account of the geological, cultural and historical influences and identifying any designated or protected areas. The baseline assessment focuses on the following receptors:

- landscape elements and features;
- settlement and built elements;
- landscape and landscape related designations;
- landscape character; and
- townscape character.

10.3.2 Landscape and townscape receptors identified within the study area are shown on Figures 10.1 to 10.3, their character illustrated in Photographs 10.1 to 10.8 and a general overview of the landscape and its relationship with the existing A9 is provided on Figure 10.4.

Landscape Elements and Features

Landform and Drainage

10.3.3 The study area is characterised by the varied landscape of the Tay valley. The River Tay meanders through the glen and is transitional in character as it flows between highland and lowland landscapes. Visibility along the glen is directed by the surrounding rugged and craggy top hills and views to the Highlands further north create a strong sense of enclosure. Valley sides are adjoined by gradually increasing hills covered in dense woodland that extend to more prominent peaks, which are characteristic of the Highlands.

10.3.4 Roads, including the existing A9, A984 and B898, and the Highland Main Line railway run parallel to the River Tay with the designed landscapes of Murthly Castle, Dunkeld House and The Hermitage oriented to take advantage of views to the Rivers Tay and Braan. Waterfalls and tributaries of both rivers and elevated lochs drain towards the valley and are important features that connect designed landscapes to the surrounding natural and perceived natural landscape.

Land-cover and Vegetation

10.3.5 Land-cover within the study area comprises fields and settlements in valley areas, and dense woodland within designed landscapes and on hill slopes. The enclosing landform and vegetation direct views along the strath towards rugged hills, with northbound road users of

the existing A9 experiencing views towards the Highlands, particularly from the northern edge of the study area.

10.3.6 Extensive and varied woodlands and forests are found within and surrounding the study area. These areas were developed by the Forestry Commission and by private landowners including the 3rd Duke of Atholl, who created Craigvinean Forest, the first 'Big Tree Country' forest. Craigvinean Forest is located to the west of the study area and is formed by a number of woods, consisting of mainly beech and Scots pine on eastern hill slopes and rocky peaks. Widespread woodland and forest are mirrored to the east of the study area, across hill slopes and summits and surrounding elevated lochs. Much of this is designated in the Ancient Woodland Inventory (AWI), and listed as ancient or long-established, with woodland identified in the Native Woodland Survey of Scotland (NWSS) also being widespread, and the predominance and maturity of woodland along the existing A9 is a key landscape characteristic of the study area.

10.3.7 Although managed, these areas of woodland form a perceived natural setting as they have been successfully integrated into the landscape. In contrast, farmland is found along the Tay Valley and designed landscapes add to the rich character of the area. In addition to woodland and forestry, riverine and roadside vegetation creates a sense of enclosure within the study area and reduces visibility from settlements to road corridors, including the existing A9 and the A984, although seasonal changes in vegetation alters visibility of roads and traffic.

Settlement and Built Elements

10.3.8 The settlement within the study area consists of small towns, scattered individual houses and farmsteads, which are generally accessed by the existing A9 and the A984. The main settlements include Dunkeld, Little Dunkeld, Birnam and Inver, which are located on either side of the River Tay. Built and natural features connect the area to its rich history, religion and literature including Dunkeld Cathedral, which once housed the bones of St Columba and was the location of the Battle of Dunkeld, and The King's Seat on Birnam Hill, which was popularised in Shakespeare's Macbeth.

10.3.9 In addition to settlements, the main built elements within the study area are the existing A9 and A984 roads and the Highland Main Line railway. Although visible from properties and GDLs, views to/from these elements are partly screened by intervening dense vegetation.

Landscape and Landscape Related Designations

10.3.10 Landscape and landscape related designations that fall within the study area are detailed below and are shown on Figure 10.1, as are other designations with relevant heritage or recreational value such as Conservation Areas, Forest Parks and areas of Ancient Woodland.

<u>River Tay (Dunkeld) National Scenic Area</u>

10.3.11 Between the Pass of Birnam and the Tay Crossing, the existing A9 lies wholly within the River Tay (Dunkeld) NSA (Figure 10.1). The NSA is characterised by its natural and semi-natural scenery and cultural influences, where the highland features of rivers, straths and haughlands are balanced with farmland, settlements and managed woodland over hills and across policies

and designed landscapes. It includes the settlements of Dunkeld and Birnam (refer to Image 10.1) and extends north to parts of Craigvinean Forest and east to include the Loch of Lowes, Loch of Craiglush, and Loch of Butterstone. The nine Special Landscape Qualities (SLQs) of the NSA are identified in The Special Qualities of the National Scenic Areas, NatureScot Commissioned Report No.374 (NatureScot, 2010) as follows:

1. The beauty of cultural landscapes accompanying natural grandeur;
2. The 'Gateway to the Highlands';
3. Characterful rivers, waterfalls and kettle-hole lochs;
4. Exceptionally rich, varied and beautiful woodlands;
5. The picturesque cathedral town of Dunkeld;
6. Drama of The Falls of Braan and The Hermitage;
7. Dunkeld House policies;
8. Significant specimen trees; and
9. The iconic view from King's Seat.

10.3.12 These SLQs can be summarised as follows:

1. Scenic and cultural landscapes, combining and balancing managed policies, designed landscapes, forest and farmland.
2. The picturesque, cathedral town of Dunkeld is referred to as the 'Gateway to the Highlands' and from here the landscape transitions from lowland scenery to highland. This is most noticeable in winter, when low-lying areas of green and brown contrast snow covered summits beyond. Travelling north on the existing A9, road users experience the 'gateway feel' where vistas of Strath Tay open to the Highland hills.
3. Rivers, lochs and waterfalls are found throughout the NSA and vary greatly, adding to the interest, atmosphere and experience of the landscape. The River Tay meanders in loops with alternating swift glides and long pools, in contrast to the turbulent and tumbling rapids and waterfalls of the River Braan.
4. Woodland within the NSA consists of a variety of tree species with different management history and age structure, with some woodland set within and adjoining areas of open field and pasture, at times allowing long range views. Notable areas of woodland within the NSA include The Hermitage woodland, Craigvinean Forest, policy woodlands at Craig a Barns and Crieff Hill and ornamental planting and policy woodlands within Dunkeld House Garden and Designed Landscape (GDL).
5. The picturesque cathedral town of Dunkeld (refer to Image 10.1) is found at the NSA's centre and its rich cultural and religious history and its setting nestled in the hills on the River Tay's north haughlands, make it a popular tourist destination.
6. Scenic views of the dramatic Falls of Braan are experienced along walks within The Hermitage GDL. Within the GDL, woodland typically restricts long distance views and hides and reveals built features including Ossian's Hall, Hermitage Bridge and Ossian's Cave.
7. Dunkeld House policies extend along the northern bank of the River Tay and make up a

major portion of the NSA. It forms a significant extent of designed and managed ornamental planting and walks and is a place that exploits the dominant views on each side of the River Tay and Braan to the coniferous woodlands and mountains beyond.

8. Specimen and ornamental trees not only add to the countryside character and visual variety, they also have historic connections to the area. Significant individual trees and tree groups include those along rivers, beech trees forming The Bishop's Walk at Dunkeld Cathedral as well as the Birnam Oak, Niel Gow's Oak and The Hermitage's Douglas Fir.
9. To the south of Dunkeld is the viewpoint at the (King's) Seat, marked by a cairn on the top of Birnam Hill. From the King's Seat, the surrounding landscape is dominated by fertile farmland and pasture on open fields contrasting woodland with views north of the glens and the Highlands. Existing views of the A9 road corridor from the King's Seat are restricted by the intervening landform and vegetation.

10.3.13 A full description of each of the individual SLQs of the NSA and a detailed assessment of the predicted effects on each SLQ is provided in Appendix A10.3. A summary of the predicted effects is provided in Section 10.8 (Statement of Significance). In addition to the assessment provided in Appendix A10.3, the potential effects on the experience of the 'Gateway to the Highlands' by users of the A9 is also discussed in Chapter 11 (Visual) and Appendix A11.3 (View from the Road Impact Assessment).

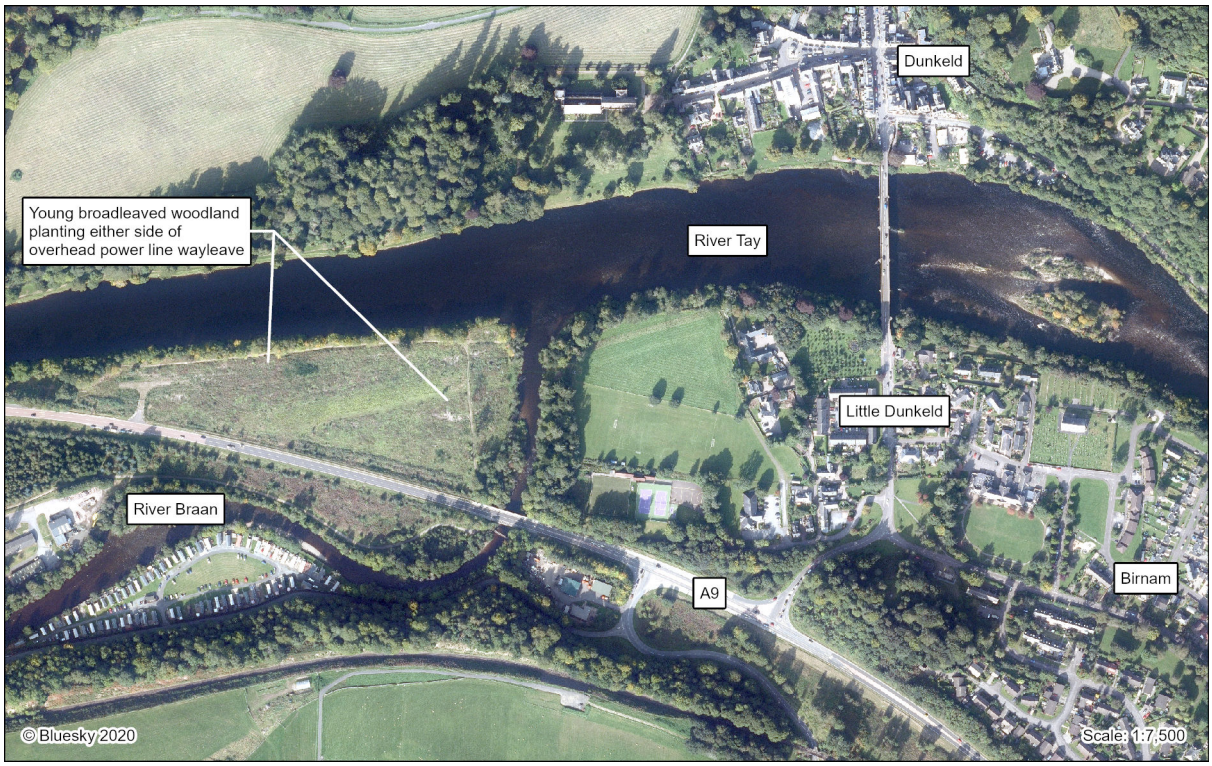

Image 10.1: Aerial photograph of Dunkeld, Dunkeld Bridge, Little Dunkeld, the River Braan crossing and A9 road corridor at the existing Dunkeld Junction

Murthly Castle GDL

10.3.14 The north-western extents of Murthly Castle GDL are located within the study area (Figure 10.1). The Highland Main Line railway and the existing A9 run through the GDL. The main entrance to the castle grounds is from the B9099 in the east, with another entrance from the existing A9 road corridor near Ringwood, providing access to a few private properties within the western part of the estate. Although the estate is privately owned, publicly accessible Core Paths are located throughout and towards the periphery of the designation, and there are fragmented views to the existing A9 from paths along the western side of the estate.

10.3.15 Murthly Castle GDL is renowned for its woodland and was originally part of Birnam Wood. The designation consists of over 162ha of amenity woodland including the Muir of Thorn in the south, which forms the setting of the central listed buildings. The garden between the Castle and the Chapel has a strong north-to-south axial design and some of the oldest trees in the estate are found in the east, along the banks of the River Tay. The extent of policy woodlands along the Tay Valley, and the range, age and size of trees within them make Murthly Castle GDL particularly notable for its scenic value.

10.3.16 The parkland was first set out in the 17th/18th century and is divided into two main parts by the castle and the lime and yew avenue (the Avenue) in an almost north/south division. Throughout the parkland several other avenues were created, some of which remain significant features, such as the oak avenue and what remains of the cedar avenue which runs along the Western Drive close to the existing A9 (Photograph 10.1). The castle is located on a knoll in the centre of the GDL and, although surrounded by woodland, long views can be obtained from it towards the foothills of the Highlands.

Photograph 10.1: Remaining section of the Western Drive Atlantic cedar avenue, Murthly Castle GDL

10.3.17 The current A9 is located within the western part of the policies, and cuts across several of the historic features of the GDL including the Western Drive cedar avenue (re-routed with a line of grand firs planted alongside during construction of the road – Photograph 10.2) and the Copper Beech Avenue from the former main carriage drive entrance now accessed via the B867. However, the existing A9 has a limited influence within the wider GDL as visibility to the existing road corridor is generally fully or partially screened by intervening woodland and roadside vegetation. From the GDL, views are dominated by the parkland and surrounding hills covered in woodland and plantation.

Photograph 10.2: Section of the West Drive diverted from its original alignment and planted with grand firs when the present A9 was constructed, Murthly Castle GDL

10.3.18 Further detail on the baseline and an assessment of the setting of the Murthly Castle GDL (Historic Landscape Type (HLT) 14) is provided in Chapter 9 (Cultural Heritage).

The Hermitage GDL

10.3.19 The Hermitage GDL is located on the River Braan, south-west of Dunkeld (Figure 10.1). This 18th century rugged picturesque landscape extends over 29ha and was built as part of the 'sublime' experience of the time. The Hermitage was originally designed as part of the Dunkeld Estate but is now separate from it.

10.3.20 The designation consists of buildings, paths, woodland and viewpoints within the dramatic Highland gorge. The Category A- and B-listed structures of Ossian's Hall, Hermitage Bridge and Ossian's Cave are set within woodland, which creates a great sense of seclusion and enclosure, and contains fine stands of Douglas firs, including of one Britain's tallest trees. In addition to

woodland within the designation, the afforested slopes of Craigvinean Forest and Birnam Wood also contribute to the setting of these features and the overall GDL.

10.3.21 The existing A9 is located towards the eastern edge of the GDL but has no effect on the key features of the designation, which are located towards the River Braan. Views are generally internal and those to Ossian's Hall, Hermitage Bridge and Ossian's Cave are accompanied by the sound of the Falls of Braan (Photograph 10.3) and dominate the experience along woodland walks. The scenic value afforded by the woodlands of the GDL to the wider landscape of the NSA, that it sits within, is visually restricted by its secluded valley setting.

Photograph 10.3: Falls of Braan at Ossian's Hall, The Hermitage GDL

10.3.22 Further detail on the baseline and an assessment of the setting of The Hermitage GDL (HLT 20) is provided in Chapter 9 (Cultural Heritage).

Dunkeld House GDL

10.3.23 Dunkeld House is an 18th century formal designed landscape, which was informalised in the 19th century. The GDL lies to the west of Dunkeld and is accessed from the A923 in the east as well as via National Cycle Network (NCN) Route 77 (NCR 77) and designated paths (Photograph 10.4), which run in a general east-west direction through the designation (Figure 10.3).

10.3.24 Listed and other architecturally notable buildings/structures are scattered across the GDL and include Dunkeld House (which is currently managed as a hotel), Dunkeld Cathedral, the Terraced Walled Garden and the East Grotto. Buildings are generally orientated to take advantage of views to the River Tay and the policies, with vantage points also found at Bishop's Hill and Stanley Hill. The GDL extends north and west to woodland including that on Craig a Barns and at King's Seat Wood. In addition to woodland, the River Tay is important to the setting of Dunkeld House, which is positioned to take advantage of views towards it. Some of the oldest larch trees in Britain are found within the woodland, and the policies also contain some fine parkland and other specimen trees.

Photograph 10.4: Cycle path/core path, Dunkeld House GDL

10.3.25 The existing A9 is located to the south and west of the GDL, and there are fragmented views to the road corridor from the western extents including from designated paths, although these would be reduced when trees are in leaf. Views from the GDL are generally of the policies and the River Tay and are dominated by the hills enclosing the Tay and Braan valleys.

10.3.26 Further detail on the baseline and an assessment of the setting of Dunkeld House GDL (HLT 19) is provided in Chapter 9 (Cultural Heritage).

Tay Forest Park

10.3.27 Craigvinean Forest, which forms part of the Tay Forest Park, lies immediately to the west of the existing A9 corridor and covers the hill slopes flanking Strath Tay. Craigvinean was one of the first 'Big Tree Country' forests in Perthshire; one of several planted by the Dukes of Atholl and one of Scotland's oldest managed forests. The forest includes numerous trails and some viewpoints overlooking Strath Tay.

10.3.28 Perthshire is known as 'Big Tree Country' by virtue of its woodlands which include *'more champion trees than anywhere else in the UK'* (Perthshire Big Tree Country, Perth and Kinross Countryside Trust webpage) and having some of the largest trees in Britain.

10.3.29 Within the study area, the Tay Forest Park extends from the Craigvinean Forest across The Hermitage GDL and south of the settlements of Inver and Little Dunkeld (Figure 10.1). The existing A9 is located within approximately 500 metres of the Tay Forest Park. Views to the forest park are currently restricted by dense woodland within the designation and intervening roadside vegetation and embankment, with more open views to wooded hill slopes at and on

approach to the Tay Crossing. Visibility of the existing A9 from the forest park is mainly limited to a few clearings within the forest, with most of the trails enclosed by woodland.

10.3.30 Considering the limited impact on woodland within the forest park as a whole, this designation is not considered further in this chapter.

Conservation Areas

10.3.31 Birnam and Dunkeld Conservation Areas (CAs) both lie within the study area. PKC has produced an appraisal for Dunkeld CA (Image 10.2) to act as supplementary guidance, but (at the time of assessment) had not yet published the appraisal for Birnam CA. The locations of both Conservation Areas are illustrated on Figure 10.1.

10.3.32 An assessment of the setting of the Birnam and Dunkeld Conservation Areas is provided in Chapter 9 (Cultural Heritage).

Dunkeld Conservation Area

10.3.33 The town of Dunkeld is sited in a bowl-shaped valley on the River Tay, to the north of the river and surrounded by the steep, wooded slopes of Craig a Barns, Crieff Hill, Newtyle Hill, Birnam Hill and Craig Vinean. Much of the town lies within the Dunkeld CA boundary.

10.3.34 The Dunkeld CA Appraisal states that, due to the town's historical importance as an early ecclesiastical centre of Scotland, the rich and varied townscape character, the A-listed buildings of Dunkeld Cathedral and Thomas Telford's Dunkeld Bridge, the Dunkeld House Garden and Designed Landscape and the magnificent setting comprising a natural amphitheatre of woodlands and forested hills, the CA is assessed as outstanding.

10.3.35 The River Tay separates the main area of the CA from the existing A9, which lies to the south and west. As the CA is set towards the river and due to dense intervening vegetation, views from the designation to the existing A9 are limited.

Image 10.2: Aerial photograph illustrating the extent of the Dunkeld Conservation Area

Birnam Conservation Area

10.3.36 Birnam is located on the southern bank of the River Tay to the south of Dunkeld and is backed by the steep Birnam Hill to the south and the hills of Craig a Barns, Crieff Hill and Newtyle Hill to the north. These hills and the banks of the River Tay are covered by dense mature woodland, and this scenic setting makes a significant contribution to the character and special qualities of the CA.

10.3.37 Birnam CA (Image 10.3) is bound to the north by the southern bank of the River Tay, to the east by the Birnam Caravan Park, to the south by Birnam Hill and to the west by the Inchewan Burn. The CA is bisected by the existing A9, the two sections of the CA being 'linked' by Birnam Glen. The CA incorporates many notable Victorian listed buildings, including Birnam House Hotel, St Mary's Episcopal Church and Dunkeld & Birnam Station, in addition to mature trees. Some of these trees are situated on either side of the existing A9.

10.3.38 From southern parts of the CA, the existing A9 and vehicles on it are visible, although these views will vary depending on when trees are/are not in leaf. From the northern section of the CA views of the existing A9 and associated traffic are limited due to intervening buildings and vegetation.

Image 10.3: Aerial photograph illustrating the extent of the Birnam Conservation Area

Tree Preservation Orders (TPOs)

10.3.39 There are no TPOs recorded within 1km of the existing A9 in the PKC area (PKC online data enquiry, January 2020). However, the Council does have the right to impose a TPO in order to protect trees within a conservation order if a tree, or trees, are considered by PKC to be of substantial merit to the conservation area.

Landscape Character

10.3.40 Four Local Landscape Character Areas (LLCAs) and four Landscape Character Types (LCTs) have been identified within the study area. Four of the LLCAs and one LCT contain elements of the proposed scheme. They are as follows:

- Lowland Hills – Tayside LCT;
- Lowland River Corridor: Strath Tay LLCA;
- Strath Tay: Lower Glen LLCA;
- Strath Tay: Dunkeld and Birnam LLCA (Settlement); and
- Strath Tay: Mid Glen LLCA.

10.3.41 A summary of the key features of the baseline conditions of these landscape character areas and type are provided below and an assessment of the impacts is provided in Section 10.4.

10.3.42 The proposed scheme would indirectly affect the three remaining character units (in this instance Landscape Character Types (LCTs)) comprising:

- Foothills - Tayside LCT;
- Mid Upland Glens LCT; and
- Transitional Moorland and Forest LCT.

10.3.43 Detailed descriptions of the LLCAs and LCTs within the study area and details of the data sources used to define them are provided in Appendix A10.1 (Landscape Character) and their extents are shown on Figure 10.2.

10.3.44 An assessment of indirect impacts on the three LCTs which would not be physically affected by the proposed scheme is provided in Appendix A10.4 (Assessment of Residual Indirect Effects on Landscape Character).

Lowland Hills - Tayside LCT

10.3.45 Areas of mixed and broadleaved compensatory woodland planting are proposed at Muir of Thorn, which is located within the Lowland Hills -Tayside LCT.

10.3.46 The key features of the LCT are summarised below:

- low rounded ridges and hills separating lowland straths and adjoining the nearby uplands;
- composed of soft, red sandstones;
- transitional character with medium-scale pastures on lower slopes, giving way to rough grazing and even, open moorland higher up;
- extensive woodland, including conifer forests on less fertile soils;
- evidence of historic settlement and land use, with prehistoric standing stones, cairns, stone and hut circles, Roman forts roads and signal stations, and fortified houses and castles marking gateway points to the Highlands; and
- modern settlement limited to scattered farmsteads and hamlets, with some main roads and pylons.

Lowland River Corridor: Strath Tay LLCA

10.3.47 The southern section of the proposed scheme between ch-576 and ch850 lies within the westernmost end of the Lowland River Corridor: Strath Tay LLCA.

10.3.48 The key features of the LLCA are summarised below:

- the lower part of the Strath Tay corridor is primarily underlain by sandstones, and the river therefore becomes more meandering than in its upper reaches, occupying a wide, flat farmed floodplain near Murthly;
- igneous intrusions result in occasional falls and rapids, and these along with weirs and mills are found across the valley;
- woodland is an essential component of the LLCA, comprising a combination of semi-natural woodland, forestry, farm woodlands, field boundary trees and the policy woodlands surrounding Murthly Castle. Deciduous woodland is found on steep slopes of

the inner river valley, increasing the sense of enclosure, and limiting visibility of the river from the wider landscape; and

- a network of hedges and hedgerows form features in the landscape, extending the variety and texture of the strath towards the lowland hills.

10.3.49 South of the river, the existing A9 cuts through the western end of the Murthly policies, with the dense woodland on either side generally containing views. Visibility along the Old Military Road to the north of the river is also often constrained by woodland, with occasional more open aspects. When trees are not in leaf, there are fleeting views east towards fields backed by woodland and wooded slopes.

10.3.50 An illustrative view of the character of the LLCA is provided in Photograph 10.5.

Photograph 10.5: View within Murthly Castle GDL looking east, with the existing A9 behind the row of fir trees just out of frame to the right and the River Tay screened by trees to the left, illustrating the character of the Lowland River Corridor: Strath Tay LLCA

Strath Tay: Lower Glen LLCA

10.3.51 The majority of the existing A9 and the proposed scheme between ch850 and ch8280 is located within the Strath Tay: Lower Glen LLCA. The LLCA comprises a glaciated valley profile covered by extensive semi-natural and managed estate woodland. It surrounds the Strath Tay: Dunkeld and Birnam LLCA (Settlement).

10.3.52 The key features of the LLCA are summarised below:

- a classic lower highland glen with a narrow valley and steeply sloping wooded hill sides;
- extensive broad leaved and coniferous woodland dominates and emphasises the enclosed nature of the LLCA;
- a dramatic and attractive variety of farmland and mature woodland give a rich character;
- the river is frequently visible and gently meanders with glacial-fluvial deposits a feature, forming a relatively level floodplain; and
- well settled with a developed character due to the influence of farmland and large estates, which bring structure to the landscape.

10.3.53 Woodland is a key characteristic of the LLCA, and extensive managed areas are mainly associated with designed landscapes. Broad-leaf semi-natural woodland is found on steep slopes, with coniferous areas on valley slopes. The interplay of designed landscapes, farmland and woodland make up the rich character of the LLCA, in contrast to the adjoining lowland and upland landscapes. A network of hedges, hedgerow trees and stone walls add variety and texture to the patchwork of farmland on the valley floor, although in parts, these features are fragmented and replaced with less visible timber post-and-wire fencing.

10.3.54 39 A Category trees and five veteran trees (two European beech, two pedunculate oak and an Atlantic cedar) identified within the Arboricultural Assessment (Appendix A10.8) study area are located within the LLCA.

10.3.55 The LLCA is the most settled of the Highland glens, and historical communication routes to the Highlands can be found, including General Wade's Military Road. Roads and the Highland Main Line railway follow a similar course to these historical routes, including the existing A9. The existing A9 follows the lower slopes of the glen and woodland and roadside vegetation generally reduces visibility beyond the immediate road corridor, except south of the B898 junction where the road passes between agricultural fields and the River Tay crossing, where it appears as a prominent feature.

10.3.56 From within the study area, particularly from the edges of settlements and parallel designated paths and roads, there are views to vehicles on the existing A9, although these views are limited when intervening trees are in leaf. Due to the high speed of vehicles along this road, views are generally focused along the road corridor towards the Highlands and enclosed by dense woodland.

10.3.57 Within this LLCA the designed landscapes of Dunkeld House and The Hermitage are oriented to take advantage of views to the Rivers Tay and Braan. Waterfalls and tributaries of both rivers and elevated lochs drain towards the valley and are important features that connect designed landscapes to the surrounding natural and perceived natural landscape.

10.3.58 An illustrative view of the character of the LLCA is provided in Photograph 10.6.

Photograph 10.6: View looking north-west from the B867, illustrating the character of the Strath Tay: Lower Glen LLCA

Strath Tay: Dunkeld and Birnam LLCA (Settlement)

10.3.59 Between Birnam Junction (Ch2100) and the Braan Crossing (ch4300) the existing A9 and the proposed scheme follow the south-western edge of the Strath Tay: Dunkeld and Birnam LLCA (Settlement) and separate the railway station and a small residential pocket at Birnam Glen comprising detached villas set in mature landscaped grounds and surrounded by trees (also part of this LLCA) from the main settlement area of Birnam. This LLCA comprises the settlements of Dunkeld, Little Dunkeld and Birnam which lie on the northern and southern sides of the River Tay. The LLCA is surrounded by the hills of the Strath Tay: Lower Glen LLCA and the spectacular setting adds to the distinctive townscape character of the LLCA.

10.3.60 The key features of the LLCA are summarised below:

- Spectacular amphitheatre setting of the surrounding hills, with views framed by forest and mountains beyond.
- Settlements of Dunkeld, Little Dunkeld and Birnam, which straddle the banks of the River Tay.
- The area incorporates many fine examples of a Victorian Highland vernacular architecture and the stone built, Victorian townscapes are relatively unaltered since they were developed as Highland holiday resorts during the last half of the nineteenth century. Dunkeld is also architecturally one of the most complete 18th century country towns in Scotland.
- Mature gardens and riverside trees contribute significantly to the townscape experience.

10.3.61 The LLCA encompasses two Conservation Areas; Dunkeld Conservation Area and Birnam Conservation Area and the former lies adjacent to Dunkeld House GDL. It also lies within the River Tay (Dunkeld) NSA.

10.3.62 The existing A9 and the Highland Main Line railway run in parallel along the southern side of the valley to the south of Birnam and views to the road from most locations within the LLCA are screened by intervening roadside vegetation. Views from the road are generally focussed on the road corridor, with the adjoining and surrounding landform, roadside trees and woodland directing views along the road and to distant wooded slopes.

10.3.63 Six A Category trees identified within the Arboricultural Assessment (Appendix A10.8) study area are located within the LLCA.

10.3.64 An illustrative view of the character of the LLCA is provided in Photograph 10.7.

Photograph 10.7: View looking south along Station Road, Birnam, illustrating the character of the Strath Tay: Dunkeld and Birnam LLCA (Settlement)

10.3.65 Eleven townscape character areas (TCAs) have been identified within Dunkeld, Little Dunkeld, Birnam and Inver. Detailed descriptions of these TCAs, details of the data sources used to define them and an assessment of residual direct and indirect effects resulting from the proposed scheme are included in Appendix A10.2 (Townscape Character). The extents of the TCAs are shown on Figure 10.3.

Strath Tay: Mid Glen LLCA

10.3.66 The northern extents of the proposed scheme lie within the Strath Tay: Mid Glen LLCA, between ch8280 and ch8420.

10.3.67 The key features of the LLCA are summarised below:

- a flat-bottomed Highland strath which contains the impressive River Tay, meandering across a broad floodplain;
- enclosed by hills and generally self-contained, frequent open views across and along the glen with an attractive combination of farmland, mature woodland and heather moorland;
- agricultural use for much of the strath floor with relatively fertile farmland on the floodplain alluvium contained in large fields;
- extensive woodland with riparian trees, estate woodland and commercial forestry. The influence of large estates is often visible in the form of lines of trees giving the valley a well-wooded and structured appearance;
- settlement is spread across small villages, hamlets and farmsteads; and
- rail and road routes follow a historically important transport corridor with the experience of travelling through the open strath constrained by passes to the north and south a powerful narrative.

10.3.68 From the LLCA, the existing A9 is enclosed by landform, woodland and roadside trees and here, views from the road are focussed on the road corridor to distant wooded slopes, beyond the LLCA. When trees are not in leaf, there are fleeting views west, across the broad valley floodplain, towards wooded hills in this direction.

10.3.69 An illustrative view of the character of the LLCA is provided in Photograph 10.8.

Photograph 10.8: View from the B898 near Inchmagrannachan looking east across Strath Tay: Mid Glen LLCA

Future Baseline

10.3.70 DMRB LA 104 states that a description should be provided of the likely evolution of the current state of the environment without implementation of the project i.e. 'future baseline scenario', with reasonable effort based on the availability of environmental information and scientific knowledge.

10.3.71 Dunkeld and Birnam are identified together in TAYplan as a Tier 3 Principal Settlement, which means that they are expected to accommodate some growth in the near future. However, the potential for additional development is highly constrained such that development allocations are limited to additional employment sites at Tullymilly (LDP, 2019). There may also be scope for some small-scale infill residential development.

10.3.72 Based on ZTV analysis, the proposed scheme would theoretically be visible from an area around Tullymilly. However, it is not anticipated that this employment site development would be likely to increase the sensitivity of the landscape receptors in the study area or change the level of landscape effects resulting from the proposed scheme.

10.3.73 One of the priorities listed in Scotland's Forestry Strategy 2019–2029 is expanding the area of forests and woodlands. Forestry commitments include creating 3000–5000 ha of new native woodland per year and restoring approximately 10,000 ha of new native woodland into

satisfactory condition in partnership with private woodland owners through Deer Management Plans.

10.3.74 The local Perth & Kinross Forest & Woodland Strategy (2020) identifies several preferred locations which offer the greatest scope to accommodate future woodland expansion. These include large areas of Strath Tay and Strath Braan within the study area. As the woodland expansion is likely to be focussed on preferred areas it is anticipated that most of the study area will have woodland cover in the future, further limiting the visibility of the existing A9 as well as the proposed scheme.

10.3.75 However, some existing tree species are at risk nationally and within the study area due to plant pests and diseases including Phytophthora ramorum, which causes damage and mortality to larch trees, Chalara ash dieback and Dothistroma needle blight affecting conifers and particularly pine species.

10.3.76 Landscape mitigation proposals align with the likely evolution of the landscape in the study area by contributing to local increase in woodland cover. They also take cognisance of the biosecurity threats by avoiding species most affected by the currently prevalent pests and diseases whilst at the same time ensuring greater species diversity which would improve woodland resilience in case of new plant pests and diseases.

10.4 Potential Impacts

General

10.4.1 Mitigation of impacts on the landscape is predominantly achieved through alignment, earthworks, planting and seeding which are incorporated into the design as assessed and reported in this Environmental Impact Assessment Report (EIAR) and described in detail in Chapter 5 (Iterative Design Development) and Chapter 6 (The Proposed Scheme). Key mitigation measures, such as limiting the extent of the cutting slopes, minimising loss of woodland, and the screening it provides, or the selection of the bridge structures are all embedded in the design. It is therefore not practicable to undertake an assessment of the potential landscape impacts of the construction and operation of the proposed scheme in the absence of mitigation.

10.4.2 This section therefore summarises the types of impacts that could occur in the absence of mitigation during operation and sets out potential temporary impacts during construction. It should be noted however that online widening of the proposed scheme would limit potential negative impacts to some degree. Impacts that occur during construction associated with the loss of landscape elements such as woodland, but which would be permanent are also considered in the assessment of operational landscape impacts.

Construction

10.4.3 Construction activities associated with road schemes would generally result in temporary adverse landscape impacts. The proposed scheme is likely to result in impacts on the landscape resource during construction caused by:

- removal of roadside woodland and scrub vegetation;
- haulage routes and vehicles moving machinery and materials to and from the site;
- machinery, potentially including heavy excavators and earth moving plant;
- exposed bare earth over the extent of the proposed works;
- structures, earthworks, road surfacing and ancillary works;
- temporary soil storage heaps and stockpiles of construction materials;
- lighting associated with night-time working and site accommodation;
- temporary works associated with bridge construction operations; and
- traffic management measures.

10.4.4 In general terms the most significant adverse landscape and townscape impacts during the construction period would be likely to occur where major structures and junctions and associated earthworks are being constructed and where the scheme interfaces with the existing townscape. These features are shown on Figure 6.1 (Pass of Birnam to Tay Crossing Overview) and would include the following:

- The new western access road from the B867 to Murthly Estate and bridge with associated earthworks at Murthly Junction (ch900).
- The new grade-separated junctions and associated large-scale earthworks and structures at Birnam Junction (ch1800-2300) and Dalguise Junction (ch6300-7300).
- The section of new widened carriageway and structures (including underpass, bridge, retaining walls and temporary pedestrian footbridge accessing the station across the main carriageway) between Dunkeld & Birnam Station/Birnam Glen and Birnam south of the A9 (ch3350).
- The new at-grade, five-spur elongated roundabout at Dunkeld Junction (ch4100), realigned side roads and associated cuttings, embankments and retaining walls.
- The new bridge structures over watercourses, including the widened, elevated crossing over the River Braan where the existing bridge would also require demolition (ch4300-4350) and the River Tay Bridge (ch7400-7700) where a new bridge is proposed alongside the existing bridge crossing.

Operation

10.4.5 Potential operational impacts on the landscape resource in the absence of mitigation would result from the following:

- Operation of the additional carriageways, junctions and side roads plus associated route infrastructure including structures, signage including Informatory Signs and CCTV cameras, barriers, mammal fencing, lighting (at Dunkeld Junction Roundabout, Dunkeld & Birnam Station Replacement Car Park and Pedestrian Underpass and the River Braan Bridge Underpass) and other road furniture.

- The change in the perception of landscape character, or on landscape/townscape settings, following physical and/or indirect impacts such as the loss of component parts of the landscape/townscape such as established woodland, introduction of new structures and perceived changes to existing views caused by the proposed scheme.
- Loss of woodland including AWI and NWSS woodland. Implications of loss of woodland in terms of ecology are provided in Chapter 12 (Biodiversity).
- The alteration of vegetation patterns and field patterns caused by tree loss, changes to field boundaries and stripping of groundcover vegetation and topsoil, followed by reinstatement and new planting.
- The changed appearance of the landform along the road corridor resulting from large-scale earthworks and/or rock cuttings and the potential requirement for reinforced slopes and/or retaining structures within the rural landscape.
- The presence of new bridge structures across watercourses including the new bridge crossings over Inchewan Burn (ch3450) the River Braan (ch4350) and the River Tay (ch7550).
- The presence of SuDS features and a compensatory flood storage area.
- Increased visual influence of traffic on the surrounding landscape due to widening and loss of screening elements.

10.4.6 A detailed description of the aspects/activities and associated impacts of the proposed scheme on the landscape resource is provided in Section 10.6 (Residual Effects).

10.5 Mitigation

10.5.1 This section refers to overarching standard measures applicable across A9 dualling projects ('SMC' mitigation item references), and to project-specific measures ('P02' mitigation item references). Those that specifically relate to landscape or townscape are assigned an 'LV' reference. Mitigation measures relating specifically to the effects on the cultural heritage of the proposed scheme on Murthly Castle GDL, the setting of Dunkeld and Birnam Station and Birnam and Dunkeld Conservation Areas are included in Chapter 9 (Cultural Heritage).

10.5.2 The landscape/townscape mitigation and enhancement measures that apply to all parts of the proposed scheme are described within the following paragraphs. Location specific measures are illustrated on Figure 10.6 and described along with the impacts in Section 10.7 (Residual Effects).

10.5.3 Landscape mitigation and enhancement is concerned primarily with mitigation of likely significant adverse effects.

10.5.4 Mitigation of these effects falls into three categories:

- prevention: avoidance of the loss of significant landscape/townscape elements through design of proposed scheme to achieve sensitive horizontal and vertical alignment;

- reduction: lessening of those adverse impacts that cannot be eliminated by prevention (e.g. roadside mounding and planting to integrate with surrounding landform and landscape); and
- offsetting: provision of alternative or compensatory measures where appropriate and feasible (e.g. replacing woodland where appropriate).

10.5.5 The design of the landscape mitigation proposals has been developed in accordance with Fitting Landscapes: Securing more Sustainable Landscapes (Transport Scotland, 2014), DMRB LA107 and Planning Advice Note (PAN) 1/2013: Environmental Impact Assessment Revision 1 (Scottish Government, 2017). In addition, programme-specific Strategic Environmental Design Principles contained in the A9 Dualling Programme SEA have been followed where possible.

10.5.6 Fitting Landscapes requires that project specific landscape design objectives are developed to deliver the four key policy aims:

- ensure high quality of design and place;
- enhance and protect natural heritage;
- use resources wisely; and
- build in adaptability to change.

10.5.7 The project specific landscape/townscape design objectives are detailed in Appendix A10.6 (Landscape Objectives). These have been developed taking cognisance of consultation with statutory consultees including NatureScot.

A9 Dualling Programme: Strategic Environmental Design Principles

10.5.8 Developed in collaboration with SEPA, NatureScot, Historic Environment Scotland and the Cairngorms National Park Authority, the Strategic Environmental Design Principles have been considered through all stages of the design process.

10.5.9 Details of how the design has been developed to respond to each of the Strategic Environmental Design Principles - Landscape (SEDPLs) are presented in Appendix A10.5 (Strategic Environmental Design Principles: Landscape). The full range of Strategic Environmental Design Principles relating to the proposed scheme is listed in Appendix A2.1.

10.5.10 In line with SEDPLs 1 and 2, the proposed scheme and mitigation measures have been designed to respect the qualities and key characteristics of each LCT/LLCA along the route, including tying in with and reflecting existing vegetation patterns and landform and the planting of species typical of the area. In line with SEDPL 7, the landscape design as part of the proposed scheme has been developed to require low maintenance and to provide 'flexibility' to accommodate future changes in circumstances, for example to take opportunities for wildlife habitat enhancement or management.

10.5.11 Although the landscape and visual assessments address impacts in summer after 15 years of operation, in line with DMRB guidance and SEDPL 5, the landscape mitigation has been designed to take account of the longer term (beyond 25 years), with species selected to continue to mature and provide mitigation. The planting mixes are designed to include a range

of understorey and edge species to ensure a balanced woodland structure, providing lower-level screening once canopy species have matured. They include long lived and native species which are expected to naturally regenerate, hence ensuring longevity of woodland and scrub planting areas.

Consideration of the Special Landscape Qualities of the River Tay (Dunkeld) National Scenic Area

10.5.12 An appraisal has been undertaken to inform the development of the mitigation proposals specifically in relation to the SLQs of the River Tay (Dunkeld) NSA relevant to the proposed scheme and these are included in Appendix A10.3 (Special Landscape Qualities of the River Tay (Dunkeld) National Scenic Area). The consideration of the SLQs of the NSA has informed the development of the Landscape Objectives set out in Appendix A10.6 (Landscape Objectives).

Woodland Planting

10.5.13 A series of Strategic Environmental Design Principles for woodland planting were developed as part of the SEA process. These comprise:

- Wd1 - avoid loss of woodland functionality (connectivity) at a landscape scale;
- Wd2 - avoid loss, damage, or fragmentation of ancient woodland inventory (AWI) sites;
- Wd3 - restrict woodland edge clearance and include woodland edge impacts in the calculation of compensatory habitat requirements;
- Wd4 - compensation for ancient woodland losses should be of a scale, nature and location which is capable of delivering the woodland functionality being lost;
- Wd5 - veteran trees and significant landscape trees should be identified and safeguarded, where possible; and
- Wd6 - avoid tree planting on road side verges to limit opportunities for shelter [for fauna including deer].

Standard Mitigation Measures

10.5.14 During the construction phase, Standard Mitigation Commitments (SMCs) will be applied to mitigate potential impacts on landscape (and visual) receptors (**Mitigation Items SMC-LV1 to SMC-LV7**). These commitments have been developed for adoption across the A9 Dualling Programme and will be implemented in addition to Pass of Birnam to Tay Crossing project specific mitigation measures detailed below (**Mitigation Items P02-LV8 to P02-LV28**). Details of **Mitigation Items SMC-LV1 to SMC-LV7** are provided in Table 10.8.

Table 10.8: Standard A9 mitigation for landscape and visual

Mitigation Item	Approximate Chainage/ Location	Timing of Measure	Responsible Party for implementation	Description	Mitigation Purpose/ Objective	Specific Consultation or Approval Required	Monitoring measure for the suggested mitigation
SMC-LV1	Throughout proposed scheme	Pre-Construction Construction	Main Contractor Advance Works Contractor	The construction programme will be kept to the minimum practicable time to reduce the duration of any landscape and visual impacts and areas will be cleared for construction as close as possible to works commencing and topsoiling, re-seeding and planting shall be undertaken as soon as practicable after sections of work are complete.	To reduce the duration of any landscape and visual impacts.	None required	None required
SMC-LV2	Throughout proposed scheme	Pre-Construction Construction	Main Contractor Advance Works Contractor	As far as practicable, construction plant and materials storage areas will be appropriately sited to minimise their landscape and visual impact.	To reduce landscape and visual impact of plant and material storage areas.	None required	None required
SMC-LV3	Throughout proposed scheme	Construction	Main Contractor	Construction sites will be kept tidy (e.g. free of litter and debris)	To reduce visual impact of construction sites.	None required	None required
SMC-LV4	Throughout proposed scheme	Construction	Main Contractor	Work during hours of darkness will be avoided as far as practicable, and where necessary, directed lighting will be used to minimise light pollution/glare. Lighting levels shall be kept to the minimum necessary for security and safety.	To reduce light pollution/glare during night-time working.	None required	None required
SMC-LV5	Throughout proposed scheme	Construction	Main Contractor	To protect soil quality for the purposes of landscape planting, the following measures will be implemented: Uncontaminated topsoil for re-use shall be stored in un-compacted mounds no more than 2m in height and stored separately from subsoil material. Topsoil stripped from areas designated as Ancient Woodland shall be stored separately to all other topsoil and sub-soil material, in un-compacted mounds no more than 2 m in height. Stripped topsoil shall be used in areas of the same proposed vegetation type to utilise the existing natural seed bank. Subsoil in planting areas shall be replaced after construction and ripped to a minimum of 450 mm prior to topsoiling and planting. Proposed planting areas in existing arable and pastureland, not subject to construction activity, shall be ripped to 600 mm to alleviate compaction.	To protect soil quality for the purposes of landscape planting.	None required	None required
SMC-LV6	Throughout proposed scheme	Construction	Main Contractor	The construction shall be managed such that the loss of any existing woodland, scrub, heath, mire, grassland vegetation, marshland, swamps and isolated trees and shrubs not affected by the permanent works is minimised.	To limit vegetation loss as far as practicable.	None required	None required
SMC-LV7	Throughout proposed scheme	Pre-Construction	Main Contractor	All existing trees and shrubs not affected by the construction of the permanent works shall be fenced off with a suitable type of temporary fencing in accordance with BS5837. Fencing shall extend to the drip line of the tree canopies (unless otherwise agreed by an arboricultural advisor) and shall be erected prior to any construction activities in that area and shall remain for the entire period of construction in that area.	To protect existing trees and shrubs unaffected by the proposed scheme.	None required	None required

Mitigation Item	Approximate Chainage/ Location	Timing of Measure	Responsible Party for implementation	Description	Mitigation Purpose/ Objective	Specific Consultation or Approval Required	Monitoring measure for the suggested mitigation
n/a (note)	*n/a*	*n/a*	*Main Contractor Advance Works Contractor*	*Further to the above, Mitigation items SMC-E7 and SMC-E8 (as detailed in Chapter 12: Biodiversity) will be implemented to protect vegetation which is identified to be retained.*	*To protect vegetation which is identified to be retained.*	*n/a*	*n/a*

10.5.15 Whilst these commitments will help to reduce impacts during the construction phase, it should be noted that construction impacts cannot be completely mitigated, due to the large scale and duration of construction works necessary.

Specific Mitigation Measures

10.5.16 Measures regarding prevention, reduction and offsetting of adverse landscape/ townscape and visual impacts were applied during the planning and design of the proposed scheme. This process resulted in specific mitigation measures which are described below and illustrated on Figure 10.6.

10.5.17 The measures have evolved from an iterative process between the environmental, landscape and design teams, with consideration given to design quality throughout the process.

10.5.18 Prevention measures include best fit of the proposed scheme with existing landform, avoiding loss or damage to landscape features such as water features or field systems and avoiding loss or damage to sites of ecological or archaeological interest, as described in Chapter 5 (Iterative Design Development). Specific mitigation measures designed to reduce and offset adverse landscape and visual impacts are summarised below in Table 10.9.

10.5.19 Details of where the mitigation measures have been applied within each LLCA directly impacted upon by the proposed scheme are set out in Section 10.6.

Table 10.9: Specific mitigation for landscape and visual

Mitigation Item	Approximate Chainage/ Location	Timing of Measure	Responsible Party for implementation	Description	Mitigation Purpose/ Objective	Specific Consultation or Approval Required	Monitoring measure for the suggested mitigation
P02-LV8	Throughout proposed scheme	Construction	Main Contractor	<u>Earthworks</u> Earthworks proposals will aim to minimise the impact of cuttings and embankment slopes and to allow integration of the road with surrounding land through: ▪ use of retaining walls or engineered slopes with native climbing plants where appropriate to avoid extensive cuttings into hill slopes or large embankments that 'chase the slope' and increase the disturbance of the landscape; ▪ where soil nailed cutting slopes are required on soft-faced slopes, slopes will be fully vegetated to reduce visual impacts. The soil nail heads will be recessed with mesh and nail heads/plates concealed from view. The design will include for sufficient topsoil depths to support the proposed planting and seeding, which will establish to cover the nail heads and any mesh that may be required; ▪ where rock cuttings are required, create rock formations with irregular faces of varied height, angle and form to reflect the structure of the local bedrock; ▪ sensitive grading and profiling of all earthworks where possible to improve integration with the surrounding landform, modifying embankment and cutting slopes to reflect and tie smoothly into existing natural landform and to allow land to be returned to its previous use where appropriate; ▪ softening changes in slope at junctions and bridges by smoothing out transitions; ▪ rounding off top and bottom of cuttings and embankments; ▪ varying gradients along and across the length of the slopes; and ▪ modification of earthworks around SuDS features to improve integration with surrounding landform.	To reduce the impact of cuttings and embankment slopes and to allow integration of the proposed scheme with surrounding land. To minimise impacts on The Special Landscape Qualities of the River Tay (Dunkeld) National Scenic Area).	Consultation with NatureScot, and Historic Environment Scotland (for works within Murthly Castle GDL)	None required
P02-LV9	Throughout proposed scheme	Pre-Construction Construction	Main Contractor Advance Works Contractor	<u>SuDS Features: Ponds, Wetlands, Basins, Swales and Geo-Cellular Storage Areas</u> The initial design of the SuDS has been developed by drainage engineers in collaboration with landscape architects, ecologists, and hydrologists to take advantage of opportunities for improved amenity and biodiversity in addition to meeting the requirements for attenuation and treatment of runoff. The proposed SuDS features include ponds, basins and swales (as shown indicatively on Figure 10.6). The design will be refined further to integrate them into the landscape and maximise their amenity and biodiversity value at each specific location. As necessary to meet runoff treatment and water quality requirements, and where SuDS features are likely to be visible at close range, and where it is considered that they would fit well with the surrounding landscape and provide benefits to wildlife, ponds/basins have been proposed. In other locations, where ponds/basins would be out of character or unlikely to offer opportunities to enhance visual amenity or biodiversity or where ponds/basins are not required for runoff treatment requirements, swales are proposed. SuDS features required as part of the drainage system of the proposed scheme, provide the opportunity to create new beneficial features within the landscape and habitat for wildlife.	To mitigate visual impact of SuDS features and to enhance their visual amenity and wildlife value. To minimise impacts on The Special Landscape Qualities of the River Tay (Dunkeld) National Scenic Area.	Consultation with NatureScot	Planting will be monitored for a minimum of five years after construction with annual replacement of any failed planting with stock of a suitable age to achieve full establishment and the required level of mitigation/impact reduction by summer 15 years after opening.

				Their design should comply with Appendix A10.7 (SuDS Design Principles) and include the following: ▪ where practicable they are sited within naturally low areas and designed to look as natural as possible; ▪ permanently wet 'scrapes' will be incorporated into SuDS basins to enhance their visual amenity and biodiversity value; ▪ their earthworks will be designed to integrate naturalistically with the surrounding landform. Abrupt changes in slope, sharp angles and steep side slopes will generally be avoided; ▪ boundary fencing, where required around SuDS, will be designed to be as unobtrusive as possible; ▪ planting of native tree and shrub species will help screen proposed fencing, outfall and inlet structures, enhance wildlife habitat and provide visual interest; ▪ open ground in the areas around proposed SuDS features will be seeded with native grasses and wildflowers or heathland vegetation, as appropriate, to provide added wildlife habitat and visual interest; and ▪ the margins of SuDS ponds/wetlands and base of SuDS basins will be planted with native emergent and marginal plant species (e.g. greater bird's-foot trefoil, yellow iris, white water-lily, purple-loosestrife and meadowsweet) to help integrate them with the surrounding landscape and enhance their visual amenity and wildlife value. Further details of the approach to the design of SuDS features together with examples are provided in Appendix A10.7 (SuDS Design Principles).			
P02-LV10	Throughout proposed scheme	Construction	Main Contractor	<u>Compensatory Flood Storage Areas</u> Compensatory Flood Storage Areas have the potential to be visually intrusive and alter the character of the landscape. Where practicable they will be returned to their former land cover/land use so that they blend in with the surrounding landscape. The use of retaining walls and 'hard' structures will be avoided and earthwork slopes slackened where practicable, to integrate with the surrounding landform.	To reduce impacts on both landscape and visual receptors (including impacts on The Special Landscape Qualities of the River Tay (Dunkeld) National Scenic Area).	Consultation with NatureScot	None required
P02-LV11	Throughout proposed scheme	Construction	Main Contractor	<u>Noise Barriers</u> Noise barriers have the potential to be visually intrusive when viewed from the existing A9 and surrounding properties. Where possible, earth bunding will be used to provide noise attenuation to reduce potential impacts on landscape character and visual amenity. The location of the proposed noise barrier (ch1240 - ch1340) is shown on Figure 10.6. Under the Design and Build type contract for the proposed scheme, the detailed design of the noise mitigation measures will be undertaken by the Contractor responsible for the works.	To reduce impacts on both landscape and visual receptors (including impacts on The Special Landscape Qualities of the River Tay (Dunkeld) National Scenic Area).	Consultation with NatureScot	None required
P02-LV12	Throughout proposed scheme	Construction	Main Contractor	<u>Structures</u> The design of structures, such as bridges along the length of the proposed scheme and aspects of the landscape design, has been informed by specialist aesthetic advice and design meetings to reduce impacts on both landscape and visual receptors. Mitigation will include measures such as natural stone cladding, patterned or relief finish to sections of retaining wall and for bridges, carefully integrated abutments and/or refinement of the design process to achieve slender, elegant and well-proportioned structures.	To reduce impacts on both landscape and visual receptors (including impacts on The Special Landscape Qualities of the River Tay (Dunkeld) National Scenic Area and Murthly Castle GDL).	Consultation with NatureScot	None required

				<u>Signage</u> The location, size and design of variable message, advanced direction and tourist information signs along the length of the proposed scheme and just beyond its extents, is largely dictated by road design standards. However, in some instances there may be scope to adjust the location to reduce their impact on the surrounding landscape. This will be undertaken at the detailed design stage and where practicable proposed new signs will be sited in areas of cutting and adjoining woodland to screen them from the surrounding landscape. Where practicable, the use of lattice supports to the signage will be avoided.			
P02-LV13	Throughout proposed scheme	Pre-Construction Construction	Main Contractor Advance Works Contractor	Retention of existing trees and vegetation wherever possible and incorporation with new planting proposals.	To retain existing trees and vegetation wherever possible. To minimise impacts on The Special Landscape Qualities of the River Tay (Dunkeld) National Scenic Area.	Consultation with NatureScot	None required
P02-LV14	Throughout proposed scheme	Construction	Main Contractor	Planting to replace trees lost during construction, particularly in areas designated as ancient woodland.	To replace trees lost during construction and mitigate impacts on landscape character. To mitigate impacts on visual receptors. To reduce impacts on The Special Landscape Qualities of the River Tay (Dunkeld) National Scenic Area.	Consultation with NatureScot	Planting will be monitored for a minimum of five years after construction with annual replacement of any failed planting with stock of a suitable age so as to achieve full establishment and the required level of mitigation/impact reduction by summer 15 years after opening.
P02-LV15	Throughout proposed scheme	Construction	Main Contractor	Enhancement of biodiversity through use of native species, providing new wildlife habitats and complementing existing adjacent habitats. Planting proposals have been developed in consultation with ecology specialists. Refer to Chapter 12 (Biodiversity). In addition to following the general objective of enhancing biodiversity through the landscape mitigation, more detailed habitat creation proposals are provided in Chapter 12 (Biodiversity).	To provide new wildlife habitats, connectivity with existing woodland and complement existing adjacent habitats.	Consultation with NatureScot	Refer to P02-LV14
P02-LV16	Throughout proposed scheme	Construction	Main Contractor	Planting of woodland at junctions and bridges to help assimilate these elements into the surrounding landscape.	To help assimilate these elements into the surrounding landscape.	Consultation with NatureScot	Refer to P02-LV14

					To reduce impacts on The Special Landscape Qualities of the River Tay (Dunkeld) National Scenic Area.		
P02-LV17	Throughout proposed scheme	Construction	Main Contractor	Planting and, where space is limited, woven wattle fencing with native climbing plants to provide screening to reduce visual impacts of the road, structures and vehicle headlights.	To provide visual screening and to reduce impacts on The Special Landscape Qualities of the River Tay (Dunkeld) National Scenic Area.	Consultation with NatureScot	Refer to P02-LV14
P02-LV18	Throughout proposed scheme	Construction	Main Contractor	Use of severed field corners and landlocked areas for new planting as appropriate.	To replace trees lost during construction, and to improve landscape integration.	Consultation with NatureScot	Refer to P02-LV14
P02-LV19	Throughout proposed scheme	Construction	Main Contractor	Proposed planting mixes will be based on native species, proven by established presence within the local area and adapted to local conditions. The planting will be monitored for a minimum of five years after construction with annual replacement of any failed planting with stock of a suitable age to achieve full establishment and the required level of mitigation/impact reduction by summer 15 years after opening. National Vegetation Classification (NVC), which is used to describe and categorise the vegetation covering land in Great Britain, will inform the selection of plant species. The following NVC woodland types have been identified as being appropriate for the proposed scheme: ▪ W4 birch woodland with purple moor-grass; ▪ W6 alder woodland with common nettle; ▪ W7 alder – ash woodland with yellow pimpernel; ▪ W8 lowland mixed broadleaved woodland with dog's mercury; ▪ W9 upland mixed broadleaved woodland with dog's mercury; ▪ W11 upland oak – birch woodland with bluebell/wild hyacinth; ▪ W17 upland oak – birch woodland with blaeberry; and ▪ W18 Scots pine woodland with heather. Localised variations of these communities, and appropriate sub-communities, will be required to fit with specific site conditions. Appropriate understorey and ground-cover planting will be included with the woodland. Young stock is generally easier to establish and will therefore be predominant in mixes, with a smaller proportion of woodland mixes (typically 5-10%) comprising feathered trees. An increased percentage of feathered trees will be used for initial effect in specific locations, for example close to visual receptors where early screening is required and at locations where there is a need to help integrate structures into the landscape. Planting will also assist integration with the local landscape character by using species mixes and planting patterns typical of the local landscape. This will also enhance the experience of travelling along the proposed scheme by creating views of a variety of woodland types. Details of the typical planting structure are shown on Figure 10.8. This takes account of aspects such as natural woodland characteristics typical in the locality, designed landscape features and other requirements such as avoiding creation of tree	To assist integration with the local landscape character. To reduce impacts on The Special Landscape Qualities of the River Tay (Dunkeld) National Scenic Area by using species mixes and planting patterns identified within the NSA.	Consultation with NatureScot and Historic Environment Scotland (for works within Murthly Castle GDL)	Refer to P02-LV14

				canopies close to the road. Tailored mixes of woodland with commitment to long term maintenance will be required to enable the overarching vision for any woodland proposed as part of the mitigation of effects on the NSA Special Landscape Qualities to be realised more effectively in the short to medium term. A commitment to consult with NatureScot on the contract documents, including planting design, will help to achieve this. More specific details for each type of planting are specified below. In total, it is estimated that approximately 42.78ha of woodland (of which 29.02ha is verified AWI woodland) will be lost during construction of the proposed scheme. 51.18ha of new woodland planting is proposed (of which 34.58ha will be for AWI woodland compensation). *Broadleaved Woodland Planting* Proposed broadleaved woodland planting will comprise of a mix of sizes of plants such as feathered trees, whips and transplants to create a multi-layered woodland that will be dominated by native broadleaved trees, with oak/ash as the principal climax community. This reflects surrounding broadleaved woodlands. Broadleaved woodland planting proposals are derived from canopy compositions of NVC dry-land woodlands. These woodlands are generally classified based on the acidity of the soil, with oak/birch woodland on acidic and mesotrophic soils (neither very acidic nor very alkaline) and mixed broadleaved woodland on more base-rich (calcium-rich) and free-draining soils. The NVC classification for these types of woodland is often derived from differences in the ground and shrub layer rather than the canopy composition, therefore the planting proposals are designed to develop into broad types of broadleaved woodland, rather than distinct NVC communities. A typical species mix to be used for broadleaved woodland would include pedunculate oak (20%) and silver birch (15%) with smaller proportions of alder, wych elm, rowan, aspen, crab apple, holly, elder, wild cherry and guelder-rose. *Mixed Woodland Planting* Proposed Mixed Woodland planting for visual screening purposes, will comprise plants which range in size from feathered trees to whips and transplants. This will aim to create multi-layered woodland with a balanced mix of native deciduous and coniferous trees, including understorey. The balance between deciduous and evergreen species will be varied to achieve year-round screening and reflect existing woodland local to the various sections of the proposed scheme. The coniferous species within the mixed woodland will be predominantly Scots pine, with smaller proportions of yew and juniper, reflecting surrounding woodlands and providing a strong evergreen framework and a habitat for red squirrels. A typical species mix to be used for Mixed Woodland will include Scots pine, downy birch and pedunculate oak with smaller proportions of sessile oak, alder, wych elm, holly, aspen, silver birch, grey willow, hazel, blackthorn, bird cherry and rowan. *Riparian Woodland Planting* Riparian Woodland is to be planted adjacent to watercourses and proposed SuDS features and in other areas along flood plains. It will comprise a mix of sizes of plants such as feathered trees, whips and transplants using wetland species such as birch, willow and alder.			

				A typical species mix to be used for Riparian Woodland would include downy birch, aspen and hazel with smaller proportions of alder, white willow, eared willow, goat willow and grey willow. *Scrub Planting* Proposed scrub planting will comprise native species of local provenance creating a dense medium height canopy. This mix will be used in areas where a lower height plant cover is more appropriate than the taller woodland mixes. A typical species mix to be used for scrub will include hawthorn, blackthorn, juniper and wild cherry with smaller proportions of blaeberry, heather, bell heather, guelder-rose, dog-rose and elder. *Individual Standard Trees* Groups of individual trees and tree lines will comprise appropriately sized trees in informal or formal groupings to reflect the character of existing landscapes, mitigate for lost landscape features, maintain habitat connectivity and provide screening or to filter views of the proposed scheme. Typical species to be used will include Scots pine, silver birch, rowan, wych elm and pedunculate oak. *Planting within Murthly Castle GDL* Proposed trees and shrubs to be planted within/ adjoining Murthly Castle GDL may include non-native species to integrate with the character of the historic landscape and will be developed in consultation with HES and NatureScot.			
P02-LV20	Throughout proposed scheme	Construction	Main Contractor	<u>Grass and Wildflower Seeding</u> For all disturbed soft areas and road verges, different seed mixes will be used, dependent on location and use, as suggested below: ▪ Species-rich Visibility Splay Mix: suited for use in road verges and other areas where grass needs to be kept short for forward visibility, being low-maintenance, fast-establishing and tolerant of traffic and salt spray. ▪ Species-rich Grassland Mix: suited for use in all other areas disturbed by construction works, consisting of a mixture of native, non-invasive grasses and wildflower species to reflect locally occurring semi-natural flora. As well as enhancing biodiversity and visual interest along the proposed scheme, this type of grassland will require minimal maintenance. Example wildflower species of local provenance, which will provide an added benefit of a nectar rich plant source, include common bird's-foot trefoil, greater bird's-foot trefoil, devil's-bit scabious, wild thyme, meadow buttercup and oxeye daisy. Appropriate mixes could be neutral, calcareous, dry, wet, highland or lowland and should be developed further for the specific location and conditions at detailed design stage. ▪ Species Rich Central Reserve Herbaceous Mix: 100% wildflower mix tolerant of traffic and salt spray comprising low-growing native species such as common bird's-foot trefoil, wild thyme, common rock-rose, selfheal, and kidney vetch to be sown within widened sections of the central reserve. ▪ Wetland Grassland Mix: suited for use in SuDS and areas around culverts that are likely to experience wet conditions. Example species of local provenance, which would have the added benefit of providing an invertebrate food or structural plant and will be selected appropriate to local conditions at detailed design stage, may	To ensure seed mixes are appropriate and suited to locations. To assist integration with the local landscape character. To reduce impacts on The Special Landscape Qualities of the River Tay (Dunkeld) National Scenic Area.	Consultation with NatureScot	Species composition of species-rich grassland areas will be monitored for a minimum of five years after construction.

				include greater bird's-foot trefoil, common knapweed, devil's-bit scabious, sneezewort, meadowsweet and lesser spearwort. ▪ Woodland Species Rich Grassland Mix: a low-maintenance wildflower and grass mix suited for establishment in newly planted woodland areas to help suppress weed growth and develop diverse woodland ground flora. Example species include ransoms, bluebell, germander speedwell, wood sage, common dog-violet and wood meadow grass.			
P02-LV21	Throughout proposed scheme	Construction	Main Contractor	<u>Proposed Planting relating to Road Users</u> Planting will be applied within the road corridor to enhance the experience of travelling along the proposed scheme by maintaining important open views and creating views to a variety of woodland types. The species composition of such planting will take account of aspects such as natural woodland characteristics typical in the locality and designed landscape features.	To enhance road users' experience of travelling along the proposed scheme. To reduce impacts on The Special Landscape Qualities of the River Tay (Dunkeld) National Scenic Area.	Consultation with NatureScot	Refer to P02-LV14
P02-LV22	Throughout proposed scheme	Construction	Main Contractor	<u>Lighting</u> Lighting would be required for safety reasons at the proposed new Dunkeld Junction Roundabout, the Dunkeld & Birnam Station Replacement Car Park and Pedestrian Underpass and the River Braan Bridge Underpass. The proposed scheme will avoid excessive and obtrusive lighting through the appropriate selection, location and arrangement of lighting elements to achieve the necessary safety standards of useful light, while minimising intrusiveness in the form of spillage, glare and reflection. Refer to Chapter 11 (Visual) for further details of mitigation measures necessary to reduce the landscape and visual impacts of the proposed lighting.	To reduce the landscape and visual impacts of the proposed lighting.	Consultation with NatureScot	None required
P02-LV23	Murthly Castle GDL approximate ch200-450	Construction	Main Contractor	<u>Murthly Estate Western Drive structural reinforcement</u> Realignment of the Murthly Estate Western Drive and planting of new avenue of heavy standard trees within a widened verge to provide a continuation of the remaining section of historic cedar avenue, reinforce the historic landscape pattern and strengthen the landscape structure of the Murthly Estate.	To reduce the landscape impacts on Murthly Castle GDL.	Consultation with HES and NatureScot.	Refer to P02-LV14
P02-LV24	Birnam Junction approximate ch1700-2350	Construction	Main Contractor	<u>Birnam Junction Landscape and Bridge Design</u> Design of the new B867 bridge under the A9 and associated exposed rock cuttings to form a welcoming and dramatic 'gateway' to Birnam. The bridge will be designed with quarter-height abutments and with raking piers to minimise the depth of the bridge beams. The slopes beneath the bridge will comprise natural rock outcrops where possible, supplemented as necessary with naturalistic constructed rock clad slopes. Areas of native mixed woodland will be planted around the new junction to help integrate the roads and bridge into the surrounding landscape. The SuDS wetland south of the new junction will be designed (in accordance with Mitigation Item P02-LV9) to appear as a visually attractive natural waterbody with the surrounding earthwork slopes graded out to integrate with the surrounding landform. Views to the SuDS from the A9, junction slip and link roads, realigned B897 and active travel routes will be framed by areas of mixed, broadleaved and riparian woodland planting.	To reduce impacts on The Special Landscape Qualities of the River Tay (Dunkeld) National Scenic Area and Murthly Castle GDL and enhance arrival/gateway to the Highlands/ Birnam and Dunkeld for road and active travel route users.	Consultation with NatureScot and HES.	Refer to P02-LV14

P02-LV25	Dunkeld & Birnam Station and environs, approximate ch3230-3450	Contract preparation Construction	Main Contractor	<u>Architectural and Townscape Design of new Dunkeld & Birnam Station Access, Dunkeld & Birnam Station Replacement Car Park and associated Structures</u> *Contract Documents* The main contract documents will include general arrangement drawings and specifications for all architectural elements and structures associated with the station, underpass and carpark. *Detailed Architectural Design* A conservation architect (as a minimum Accredited by the Royal Incorporation of Architects in Scotland as competent in working in the historic built environment) will be employed to contribute to and inform the detailed architectural design of all alterations and new built elements associated with the category A-listed Dunkeld & Birnam Station including built elements adjoining the station car park, the station underpass, and lift shaft buildings on the station platforms. *Dunkeld & Birnam Station Replacement Car Park* High quality paving materials and street furniture to complement Birnam Conservation Area will be used in the replacement car park. The areas beneath the entrance canopy and the adjacent footway will be paved with high quality paving material to be agreed with consultees. Lighting will be designed to complement the street lighting within Birnam Conservation Area, while minimising intrusiveness in the form of spillage, glare and reflection. The replacement car park will be designed to incorporate tree planting areas where practicable and sloped tree and shrub planting areas will extend from the carpark footway to meet the eastern and western sections of the retaining wall. The replacement car park will incorporate a totem, circa 5m high incorporating a British Rail logo, visible from the northern end of Station Road. *Retaining Walls and Station Underpass Entrance Canopy* The retaining wall on the north side of the replacement car park will be kept to the minimum practicable height and finished to match the retaining wall at the A9 verge (detailed below). A retaining wall with a parapet extending 2m above A9 verge level clad in natural whinstone rubble with a precast concrete cope with curved profile and lime mortar pointing, all in keeping with the masonry of Dunkeld & Birnam Station. The wall and parapet will be constructed between approximate mainline ch3280 and ch3380. A dressed ashlar band aligned with the top of the cantilevered canopy will be incorporated into the face of the retaining wall to the west of the station canopy with the words DUNKELD AND BIRNAM carved in letters in a font/style to Network Rail's approval.	To ensure delivery of a specific design solution agreed with stakeholders. To reduce townscape and visual impacts of the proposed scheme and integrate it into the Birnam Conservation Area. To strengthen the physical connection between Dunkeld & Birnam Station and Birnam. To screen traffic on the A9 from Birnam, whilst allowing the station building to be from along Station Road. To strengthen the visual connection between Dunkeld & Birnam Station and Birnam. To reduce the visual impact of traffic on the A9 and provide a transition between the eastern and western ends of the retaining wall and the A9 roadside planting. To reduce the visual and townscape impact of the new station carpark and vehicles. To assist in the maintaining the future occupation/use and hence the long term preservation of Dunkeld & Birnam Station Category A Listed Building.	Consultation with HES, PKC, Network Rail, rail operators, NatureScot and community group(s). Samples/ technical details of finishing materials to be submitted to HES and PKC for approval.	Refer to P02-LV14

				The area outside the entrance to the new underpass and either side of the underpass will include a mono pitched canopy cantilevered approximately 3.4m from the face of the retaining wall and with a minimum soffit height of 2.7m, extending west to be clearly visible from Station Road an Murthly Terrace, and east to approximate mainline ch3340.The pitch angle of the canopy will be the same as that of the existing station's platform canopy, except where the front edge of the canopy will be curved up to form a shallow arch 'eyebrow' at the underpass entrance, to match with the vaulted form of the underpass. The canopy will be supported by stainless steel columns and finished in standing seam zinc and downpipes will be concealed internally above the roof soffit and directed vertically to the below ground drainage within a 'chased' section of the retaining wall stonework. *Pedestrian Underpass* A generous and welcoming underpass will provide access from the replacement station car park to the station platforms. The underpass to platform 1 will have a with a minimum width of 5m and height of 3m and the continuation to platform 2 a minimum width of 2.5m and height of 2.5m. The underpass will contain no blind corners. The ceiling of the underpass will be vaulted/curved, light in colour and with high quality concealed LED uplighting to wash the ceiling with light and reduce the sense of enclosure. The underpass walls will be generally clad in a large format through-coloured sandstone effect porcelain tiles with a series of large integrated interpretive/artistic elements, (appropriate to the Dunkeld/Birnam area) to enhance the experience of walking through the underpass. *Lift/Stair Cores* The lift/stair core to Platform 1 will have a minimum plan dimension of approximately 7.5m x 9.5m and will be sited a minimum of 4m from the platform edge. The above platform enclosure housing the lift/ stair core will have a roof pitched at approximately 40 degrees with scale sufficient to enclose the lift overrun. The massing of the pitched roof will reflect the geometry and scale of the existing station's gabled elements. The above platform enclosure housing the lift/stair core to Platform 2 will utilise a similar basic layout and lift as for Platform 1, but with an east-west orientated roof with a split pitch, facilitating a clerestory window to the south. The minimum plan dimension of the lift/stair core will be approximately 7.5m x 9.5m orientated to minimise intrusion into the steep bank and woodland south of the station. The massing of the enclosure will reflect the geometry and scale of the existing station and signal box. The design of both lift/stair core buildings will maximise daylight entering the underpass below, whilst seeking to minimise the overall area of glazing. Aesthetically, the massing, materials selections and forms must directly reference the existing A Listed Station building, canopy and signal box.		

				The envelope for both buildings will be formed principally in natural whinstone rubble. With further areas in lightweight panels, exposed steelwork and glazed elements where required. The roof finish will be zinc standing seam, incorporating a concealed gutters to the perimeter. *Station Vehicular Access and Parking* Provision of vehicular access and parking spaces at Birnam Glen close to the Station building. *Shrub Planting* Native shrub planting to replace the existing shrub planting that would be removed as a result of the proposed temporary construction haul route associated with the construction of the Pedestrian Underpass.			
P02-LV26	Dunkeld Junction Roundabout	Construction	Main Contractor	<u>Dunkeld Junction Gateway to the Highlands Feature Landscape</u> Gateway to the Highlands landscape design incorporating land art and native tree and ground cover planting within Dunkeld Junction Roundabout, designed to frame views north towards the hills to the north.	To enhance arrival at Dunkeld and Birnam/gateway to the Highlands for road users.	Consultation with TS, NatureScot, PKC	Refer to P02-LV14
P02-LV27	River Braan Flood Relief Culverts ch4450-4580	Construction	Main Contractor	<u>Design of River Braan Flood Relief Culverts</u> Riparian woodland, species rich grassland, scattered scrub, individual trees and hedgerow west of River Braan crossing to include planting to screen flood culverts where possible.	To screen views of the flood culverts and reduce impacts on visual amenity.	Consultation with NatureScot	Refer to P02-LV14

10.6 Residual Effects

10.6.1 Residual effects are those that remain once the described mitigation measures have been implemented.

Landscape Character Areas (Direct Impacts)

General

10.6.2 The following section provides an assessment of the residual effects on the following LLCAs and LCT resulting from direct, physical impacts on their defining elements and features caused by the proposed scheme:

- Lowland Hills – Tayside LCT
- Lowland River Corridor: Strath Tay LLCA (ch-577 to ch850);
- Strath Tay: Lower Glen LLCA (ch850 to ch8280);
- Strath Tay: Dunkeld and Birnam LLCA (Settlement) (ch2070 to ch4300); and
- Strath Tay: Mid Glen LLCA (ch8280 to ch8420).

10.6.3 A detailed description of the impacts on these LLCAs and LCT is provided below. The sensitivity to change associated with the proposed scheme for each LLCA and LCT is provided in Appendix A10.1 (Landscape Character).

10.6.4 Proposed planting and seeding and the indicative profile of the landform are provided in the mitigation plans in Figure 10.6, cross-sections in Figure 10.7 and typical planting structure in Figure 10.8.

10.6.5 Photomontages providing indicative views of the proposed scheme during the winter of the year of opening and summer after 15 years once mitigation planting and seeding has become established are provided in Figures 11.6 to 11.14.

Lowland Hills – Tayside LCT

10.6.6 A detailed description of the elements and features which define the LCT is set out in Appendix A10.1 (Landscape Character). Impacts on the defining elements and features of the LCT would result from the removal of an area of existing Sitka spruce plantation and the introduction of proposed areas of native mixed and broadleaved compensatory woodland planting required as ecological mitigation at Muir of Thorn (**Mitigation Items P02-LV14** and **P02-LV19**).

10.6.7 The sensitivity of the LCT to change associated with the proposed scheme has been determined as being Low/Medium. The rationale to this rating is set out in Appendix A10.1 (Landscape Character).

10.6.8 In the winter of the year of opening, the proposed scheme would result in a Slight beneficial residual effect on the Lowland Hills – Tayside LCT. This level of residual effect would result from the Minor magnitude of impact associated with the removal of an area of existing sitka

spruce plantation and the introduction of proposed areas of mixed and broadleaved compensatory woodland planting at Muir of Thorn

10.6.9 On establishment of the proposed areas of mixed and broadleaved compensatory woodland planting at Muir of Thorn by summer 15 years after opening, it is predicted that the magnitude of impact to the LCT associated with the proposed scheme would change from Minor to Moderate. This change in the magnitude of impact would result in a **Moderate** beneficial residual effect on the Lowland Hills – Tayside LCT.

Lowland River Corridor: Strath Tay LLCA

10.6.10 The southern section of the proposed scheme between ch-577 and ch850 lies within the western end of the Lowland River Corridor: Strath Tay LLCA. A detailed description of the elements and features which define the LLCA is set out in Appendix A10.1 (Landscape Character). The impacts on the defining elements and features of the LLCA would result from an increased prominence of road infrastructure in the landscape caused by the following aspects associated with the proposed scheme:

- Widening of the existing A9 and associated new cuttings and embankments resulting in the loss of existing roadside trees and woodland, including AWI and NWSS woodland and a formal line of tall fir trees alongside the Western Drive of Murthly Castle GDL (planted after the access road was realigned to accommodate the current A9 alignment).
- New northbound and southbound lay-bys and associated cuttings and embankments between ch-577 and ch0, resulting in the loss of existing roadside woodland including AWI and NWSS.
- Introduction of a SuDS feature and associated earthworks and access track at ch800, affecting local landform and resulting in the loss of an area of existing roadside coniferous AWI and NWSS woodland.
- Introduction of signage along the road corridor, resulting in an increase in visible road infrastructure.

10.6.11 The sensitivity of the LLCA to change associated with the proposed scheme has been determined as being Medium. The rationale to this rating is set out in Appendix A10.1 (Landscape Character).

10.6.12 In the winter of the year of opening, the proposed scheme would result in a **Moderate** residual effect on the Lowland River Corridor: Strath Tay LLCA. This level of residual effect would result from the Moderate magnitude of impact associated with the loss of defining features of the LLCA including roadside trees and woodland at the western end of the Murthly Castle GDL policies and localised alterations to natural landform as a result of the new carriageway. While most of the physical impacts to the features within the LLCA would be limited to a relatively short, narrow corridor closely associated with the existing A9, the proposed scheme in the winter of the year of opening would constitute a more prominent feature within the LLCA.

10.6.13 This impact on the LLCA would be mitigated by implementation of the proposed mitigation measures which include:

- Grading out of the proposed earthworks where possible to improve integration with the existing landform and achieve a more natural appearance (**Mitigation Item P02-LV8**).
- Realignment of the Murthly Estate Western Drive and planting of a new avenue of oak trees. (**Mitigation Item P02-LV23**).
- Slackening of the embankment slope between the Murthly Estate Western Drive (realigned) to provide improved conditions for the establishment of new roadside woodland screen planting (**Mitigation Item P02-LV8**).
- A 'naturalistic' design approach to SuDS features with the grading of earthworks and implementation of riparian woodland (**Mitigation Item P02-LV9**) to improve integration of the proposed SuDS feature into the receiving landscape at ch800.
- Retention and protection of existing woodland and other landscape features (**Mitigation Item P02- LV13**) as far as practicable.
- Reinstatement of woodland by replacement planting, the species composition reflecting lost areas of woodland whilst enhancing biodiversity (**Mitigation Item P02-LV14**).
- Planting of location-specific woodland, the species mix proposed for areas of woodland reflecting the species composition of neighbouring woodland whilst enhancing biodiversity (**Mitigation Item P02-LV19**).
- The use of a species-rich grassland mix consisting of a mixture of native, non-invasive grasses and wildflower species to reflect locally occurring flora along the length of the proposed scheme (**Mitigation Item P02-LV20**).

10.6.14 On establishment of the proposed mitigation measures by summer 15 years after opening, particularly the maturation of the proposed woodland planting, it is predicted that the magnitude of impact to the LLCA associated with the proposed scheme would be reduced from Moderate to Minor. This reduction in the magnitude of impact would result in a Slight residual effect on the Lowland River Corridor: Strath Tay LLCA.

Strath Tay: Lower Glen LLCA

10.6.15 The majority of the existing A9 and the proposed scheme between ch850 and ch8280 is located within the Strath Tay: Lower Glen LLCA. The LLCA comprises a glaciated valley profile covered by extensive semi-natural and managed estate woodland. It surrounds the Strath Tay: Dunkeld and Birnam LLCA (Settlement). A detailed description of the elements and features which define the LLCA is set out in Appendix A10.1 (Landscape Character). The impacts on the defining elements and features of the LLCA would result from an increased prominence of road infrastructure in the landscape caused by the following aspects associated with the proposed scheme:

ch850 to ch1600

- The new Murthly Estate Western Drive from the B867 to Murthly Estate and Murthly Estate Bridge with associated earthworks, resulting in the loss of an area of existing mature coniferous plantation woodland.

- Online widening of the A9, associated earthworks and the resultant loss of woodland along the road corridor, opening the enclosed, heavily wooded character of the existing A9 and locally altering landform.
- Offline routing of the A9 between ch1200 and ch1600, associated cuttings and the resultant loss of existing woodland (including mixed roadside planting, large mature beech avenue trees (remnants of the Copper Beech Avenue along the former main carriage drive to Murthly Estate from what is now the B867), northbound ch1350 to ch1550) and coniferous forestry plantation).
- Introduction of signage along the road corridor, resulting in an increase in visible road infrastructure.

ch1600 to ch2400

- The new Birnam Junction, realigned Perth Road/B867, Birnam Junction Bridge and associated earthworks, including rock cutting, altering the landform and resulting in the loss of an area of broadleaved woodland (including three A Category trees – two European beech (ca. ch1800) and a pedunculate oak (ca. ch2130)) and a change in landform immediately north of the underbridge, removing an area of rock outcrop at the existing junction, that together would open up the enclosed, heavily wooded character of the existing A9 corridor. The road infrastructure and earthworks would become more prominent and visible from the surrounding landscape including the River Tay corridor to the north which currently benefits from screening afforded by woodland planting and topography.
- Introduction of the proposed SuDS feature and access track on the northbound side (ch1800) which would further alter the local landform at the junction.
- Introduction of signage along the road corridor, resulting in an increase in visible road infrastructure.

ch2400 to ch4300

- The proposed scheme follows the boundary between the Strath Tay: Lower Glen and Dunkeld and Birnam (Settlement) LLCAs from ch2400 to ch3150 and from ch3450 to 4300. Widening of the A9 on both sides of the carriageway and associated embankments along with the emergency vehicle access to Dunkeld and Birnam Station that would result in the loss of mature roadside trees and woodland planting and open up the enclosed, wooded character of the existing A9 corridor at this location.
- Road widening and new retaining wall plus cuttings for the northbound carriageway on the approach to the new Dunkeld Junction Roundabout, opening the enclosed, wooded character of the A9 corridor, creating additional views of the railway and altering the character of the road corridor.
- The new at grade Dunked Junction Roundabout (straddling the boundary between the Strath Tay: Dunkeld and Birnam (Settlement) and Lower Glen LLCAs) with associated removal of mature trees would open up the semi-enclosed character of the road corridor, increasing the hard surfaced area and the width of the road corridor. New road lighting would introduce additional vertical elements, increase the influence of the road at night and have an ‘urbanising’ influence. A small area of woodland (including two A Category

trees – a European beech (ca. ch4250) and a pedunculate oak (ca. ch4300)) and a builder's supply yard/garden space would be removed to accommodate the proposed SuDS feature and associated earthworks adjacent to the northbound carriageway between ch4100 and ch4300.

- Introduction of signage along the road corridor, resulting in an increase in visible road infrastructure.

ch4300 to ch6000 (including TCA I1 – Inver Village)

- The proposed widened and elevated River Braan Bridge (ch4350), associated embankments and the resultant localised change in landform and loss of existing riparian woodland and scrub vegetation. The introduction of a compensatory flood storage area (and 14 flood relief culverts between ch4450 and ch4580) would result in the loss of existing woodland and scrub vegetation.
- New northbound and southbound lay-bys and associated embankments between ch4500 and ch4850 resulting in the loss of existing roadside trees, scrub vegetation and two A Category pedunculate oaks (ca. ch4520 and ch4830).
- Encroachment of proposed earthworks and a proposed new structure (ch4900 to ch5000) into the root protection area of three veteran trees (a European beech ca. ch4680, a pedunculate oak ca. ch4780 and an Atlantic cedar ca. ch4960) would result in their removal.
- The introduction of three flood relief culverts and associated earthworks adjacent to Inver Mill Lade would result in the loss of existing riparian woodland at approx. ch4900.
- From Inver (approx. ch4950) to ch6000, the proposed widening to the southbound side of the existing A9, associated new cuttings and embankments on both sides of the widened mainline and the resultant loss of existing mature roadside trees (including AWI/NWSS woodland), three A Category trees (two European beech (ca. ch5050) and a pedunculate oak (ca. ch5270)) and agricultural land. The new alignment of the A9 would be slightly closer to the north-east corner of Inver Village (TCA I1) but further from the north west corner of the village than the existing carriageway.
- Introduction of the proposed SuDS feature and the resultant alteration of natural landform and loss of an area of scrub and mature woodland adjacent to the northbound carriageway between ch4750 and ch4900.
- Widening with cutting and large-scale embankment to the southbound side between ch5000 and ch5500, encroaching into pasture fields, affecting local landform and resulting in the loss of roadside woodland, increasing the prominence of road infrastructure along the river corridor, including close to Niel Gow's Oak, located along the river bank to the north at ch5300.
- Introduction of the proposed SuDS feature on the southbound side (ch5600), resulting in alteration to local landform and loss of existing roadside AWI/NWSS mixed species woodland (including three A Category grand fir trees (ca. ch5520 and ch5600).
- Introduction of signage along the road corridor, resulting in an increase in visible road infrastructure.

ch6000 to ch8280

- From ch6000 to Inver Wood (ch6800), off-line realignment to the west, with the introduction of extensive cuttings into the wooded hillside including exposed rock, altering the character of the road corridor landscape and resulting in the loss of mature dense coniferous woodland (potentially increasing risk of windthrow in remaining areas).

- The proposed widening and increased vertical alignment of the mainline and associated large-scale, visually prominent cuttings on the northbound side and embankments on the southbound side (ch6200 to ch6850), resulting in the road corridor and associated traffic becoming considerably more prominent in the landscape. However, visibility of the route from the wider landscape would remain limited by existing intervening woodland and topography.

- North of Inver Wood the re-aligned A9, the new Dalguise Junction and realigned B898 plus associated earthworks, resulting in the loss of large areas of mature, dense coniferous AWI/NWSS woodland and an existing agricultural field. The road infrastructure would become more prominent in this area, with the widened A9, junction slip roads, the realigned B898, pump station and the new underbridge.

- Introduction of a proposed SuDS feature and associated earthworks, resulting in the loss of an area of pasture and three A Category pedunculate oaks (ca. ch7050), and altering natural landform adjacent to the southbound carriageway at ch7100.

- The new/extended railway bridge (ch7130 to ch7350) would potentially be more visually prominent in the landscape than the existing structure due to the more skewed angle at which the route would cross it and the larger retaining structure required.

- Widening from ch7200 to ch7900 on the southbound side, including the new River Tay Bridge with associated embankments, resulting in increased prominence of the road infrastructure along the river corridor and loss of some roadside and mature AWI/NWSS riparian woodland and two A Category trees (a sycamore ca. ch7320 and a pedunculate oak ca. ch7580). The increased depth of the bridge deck beam required in order to avoid bridge piers within the River Tay SAC would be a noticeable localised change.

- North of the River Tay crossing, the temporary Tay Bridge launching platform would result in the loss of an area of scrub woodland, three A Category trees (a European beech and two conifers ca. ch7750) and the introduction of associated earthworks.

- The introduction of a proposed SuDS feature and associated earthworks, resulting in the loss of an area of riparian woodland and two veteran trees (a European beech and a pedunculate oak) adjacent to the northbound carriageway at ch7900.

- Widening of the carriageway and associated cuttings on the southbound side from ch7900 to ch8280, resulting in the loss of an area of low-lying scrub and a number of mature trees.

- Introduction of signage along the road corridor, resulting in an increase in visible road infrastructure.

10.6.16 The sensitivity of the LLCA to change associated with the proposed scheme has been determined as being High. The rationale to this rating is set out in Appendix A10.1 (Landscape Character). The sensitivity of TCA I1 - Inver Village has been determined as Medium/High.

10.6.17 In the winter of the year of opening, the proposed scheme would result in a **Large** residual effect on the Strath Tay: Lower Glen LLCA. This level of effect would be incurred as a result of the Moderate magnitude of impact associated with the loss of defining features of the LLCA including roadside trees, woodland and farmland, and localised alterations to natural landform as a result of the new carriageway. While most of the physical impacts to the features within the LLCA would be limited to a relatively narrow corridor closely associated with the existing A9, the proposed scheme would in the winter of the year of opening constitute a prominent feature within the LLCA.

10.6.18 In the winter of the year of opening, the proposed scheme would result in a Slight residual effect for TCA I1 - Inver Village.

10.6.19 This effect on the LLCA and TCA I1 would be mitigated by implementation of the proposed mitigation measures which include:

- Grading out of the proposed earthworks along the length of the proposed scheme where possible within the LLCA to improve integration with the existing landform and achieve a more natural appearance (**Mitigation Item P02-LV8**).
- A 'naturalistic' design approach to SuDS features with the grading of earthworks and implementation of broadleaved, mixed and riparian woodland (**Mitigation Item P02-LV9**) to improve integration of the proposed SuDS features into the receiving landscape at ch1800, ch4800, ch5600, ch7100 and ch7900.
- A 'naturalistic' design approach to screen and assimilate the proposed River Braan Flood Relief Culverts at ch4450 - ch4580 into the surrounding landscape, including planting of riparian woodland, species rich grassland, scattered scrub, hedgerow and individual riparian trees (**Mitigation Item P02-LV27**).
- Particular attention to be focussed on aesthetics in the detailed design of the new widened bridge crossings over the River Braan and over the River Tay (**Mitigation Item P02-LV12).**
- Retention and protection of existing woodland and other landscape features (**Mitigation Item P02- LV13**) as far as practicable along the length of the proposed scheme within the LLCA.
- Reinstatement of woodland by replacement planting, the species composition reflecting lost areas of woodland along the length of the proposed scheme within the LLCA (**Mitigation Item P02-LV14**).
- Planting of woodland at the Murthly Estate Bridge, Birnam Junction and Dalguise Junction and adjacent to the widened River Tay Bridge to help assimilate these elements into the surrounding landscape (**Mitigation Items P02-LV16 & P02-LV24**).

- Planting of location-specific woodland, the species mix proposed for areas of woodland reflecting the species composition of neighbouring woodland along the length of the proposed scheme within the LLCA (**Mitigation Item P02-LV19**).

- The use of a species-rich grassland mix consisting of a mixture of native, non-invasive grasses and wildflower species to reflect locally occurring flora along the length of the proposed scheme (**Mitigation Item P02-LV20**).

10.6.20 On establishment of the proposed mitigation measures by summer 15 years after opening, particularly the maturation of the proposed woodland planting, it is predicted that the magnitude of impact to the LLCA associated with the proposed scheme would be reduced from Moderate to Minor. This reduction in the magnitude of impact would result in a **Moderate** residual effect on the Strath Tay: Lower Glen LLCA. Beyond 15 years, the level of effect is likely to continue to reduce further as woodland planting matures, particularly in areas such as the Birnam Junction and Dalguise Junction.

10.6.21 In the summer 15 years after opening after establishment of screen woodland planting, the proposed scheme would result in a Slight residual effect for TCA I1- Inver village.

Strath Tay: Dunkeld and Birnam LLCA (Settlement)

10.6.22 The proposed scheme follows the southwestern edge of the Strath Tay: Dunkeld and Birnam LLCA (Settlement) from ch1940 to ch3150 and ch3450 to ch4300. The widened road from ch3150 to ch3450 would separate the section of this LLCA south of the A9, incorporating Dunkeld and Birnam Station and the nearby residential area, from the main settlement. Detailed descriptions of the elements and features which define the LLCA and Townscape Character Areas (TCAs) within it are set out in Appendix A10.1 (Landscape Character) and Appendix A10.2 (Townscape Character). The impacts on the defining elements and features of the LLCA and TCAs within it would result from an increased prominence of road infrastructure in the landscape/ townscape caused by the following aspects associated with the proposed scheme:

Ch1940 to ch2400 (including TCA B4 – Southeast Corner of Birnam)

- The proposed realignment and connection of the B867 (and NCR 77) with Perth Road at the south of Birnam via a new bridge at ch2200, with associated large new cuttings on both sides of the realigned Perth Road altering local landform and resulting in the loss of an area of broadleaved woodland (including some AWI trees and three A Category trees – a pedunculate oak (ca. ch2130) and two sweet chestnuts (ca. ch2400)).

- The realignment of Perth Road opening up views to the new Birnam Junction Bridge from the southern part of TCA B4, which together with widening of the A9 and associated earthworks and resultant loss of mature roadside trees on the southbound side would increase the influence of A9 infrastructure and traffic on the townscape of the residential area.

- The new access road and associated earthworks between Perth Road and the Sewage Works, resulting in impacts on natural valley floor landform and the loss of broadleaved AWI woodland.

ch2400 to ch2900 (TCA B4 – Southeast Corner of Birnam and B3 – Erigmore Leisure Park)

- Online widening with the formation of new embankments that would alter the existing landform and lead to the removal of mature roadside trees. New steepened embankment slopes on the southbound side from ch2450 to ch2880 would result in a more open character and traffic would be more prominent in views from the northeast, increasing the influence of A9 infrastructure and traffic on the townscape of the residential area.
- Introduction of a SuDS feature and associated earthworks and fencing (remote from the carriageway, approximately 230m northeast of the widened mainline at ch2800) at the western edge of an open agricultural field, altering natural landform to the immediate east of Erigmore Leisure Park and altering views from its perimeter, however, the introduction of the SuDS would not significantly alter the essential townscape character of the neighbouring TCA B3.

ch2900 to ch4000 (TCAs B3 – Erigmore Leisure Park, B2 – Birnam Conservation Area (south of existing A9), B1 – Birnam Conservation Area (north of existing A9), LD2 – Stell Park Road Telford Gardens and King Duncan's Place and LD1 – North of Perth Road, Birnam Highland Games Park and War Memorial)

- Widening and new embankments along both sides of the road alongside Birnam, resulting in the loss of roadside trees and increased prominence of the road and traffic within TCAs B2, B1, LD2 and LD1.
- The road widening and lengthening of the minor road underpass at Birnam Glen (also Core Path DUNK/11/5 and NCR 77, and running alongside Inchewan Burn), that together would increase the sense of separation between the two areas of Birnam either side of the A9 and between the main part of the village and the countryside. The new Birnam Glen and Inchewan Burn Bridge would result in loss of woodland and increase the prominence of road infrastructure within TCAs B2 and B1.
- Construction of the Dunkeld & Birnam Station Replacement Car Park, locally changing townscape character of TCA B2 as a result of the removal of modern business unit buildings and existing trees, opening views of the dualled A9 from along Station Road (within TCA B2) and the adjacent residential area and increasing the area of hard surfacing.
- The road widening between Dunkeld and Birnam Station within TCA B1 and the main part of Birnam to the north in TCA B2, which would affect the landscape setting of the station bringing the road and traffic closer to it and increase the sense of separation/ severance of the station from the town, though removal of roadside trees on both sides of the A9 would open up views to the station building and footbridge, albeit with A9 traffic in the foreground, which would alter the character of TCA B2.
- The new pedestrian underpass structure providing access to Dunkeld & Birnam Station (TCAs B1 and B2) which would have a localised urbanising impact on townscape character on both sides of the A9 and lifts and/or ramps to provide access to platform level would alter the character of the station.
- Introduction of the proposed SuDS feature in the form of geocellular storage and associated earthworks to the southeast of the new station carpark, resulting in the loss of an area of existing mature woodland adjacent to the southbound carriageway at ch3250 and introduction of a flat grassed area at this location.

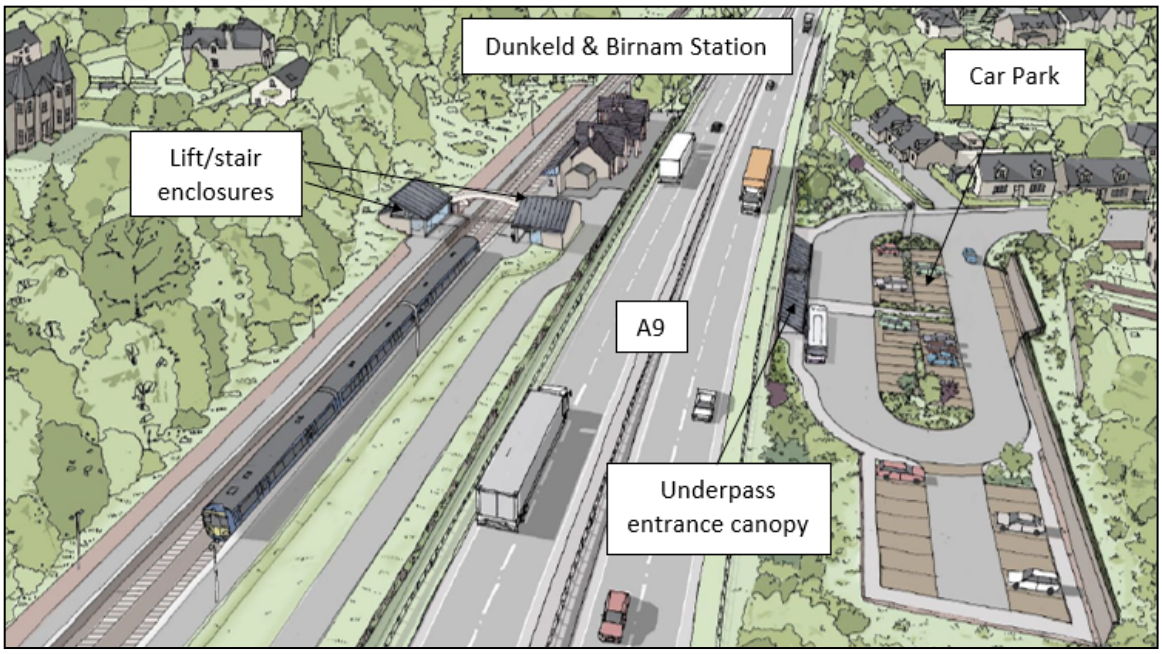

Image 10.4 – Artist's impression showing indicative view west across the proposed scheme including new lift/stair enclosures on platforms 1 and 2 and Dunkeld & Birnam Station Replacement Car Park

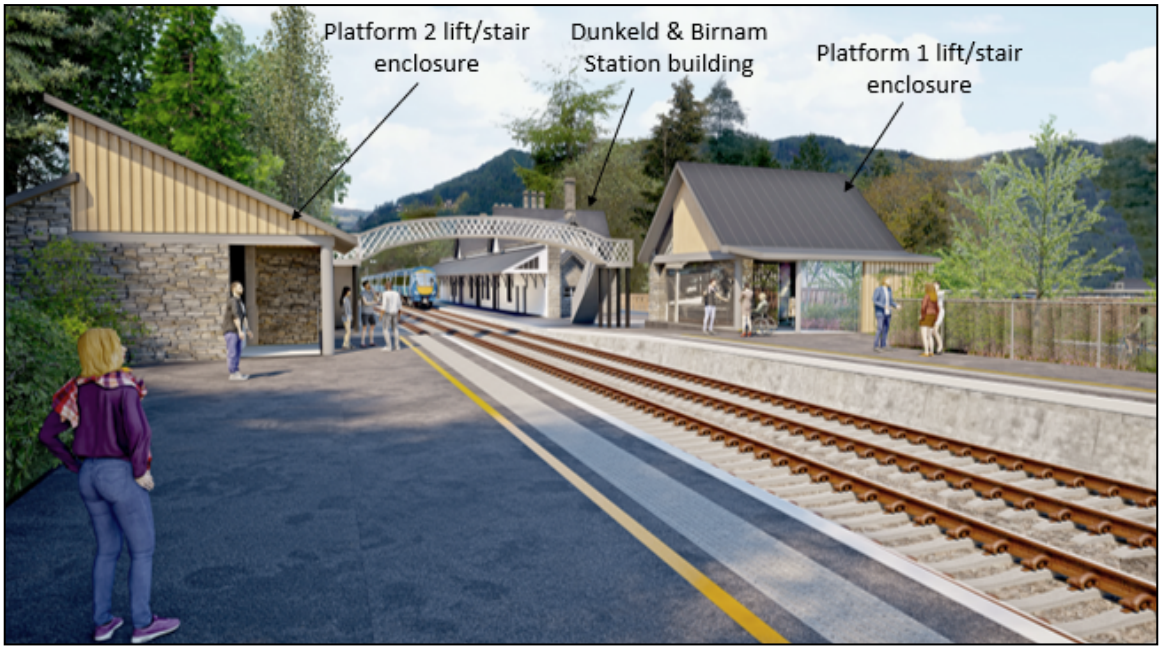

Image 10.5 – Artist's impression showing indicative view west from platform 2 towards new lift/stair enclosures on platforms 1 and 2 and the existing Dunkeld & Birnam Station building

Image 10.6 – Artist's impression showing indicative view south across the proposed Dunkeld & Birnam Station Replacement Car Park to the new Pedestrian Underpass

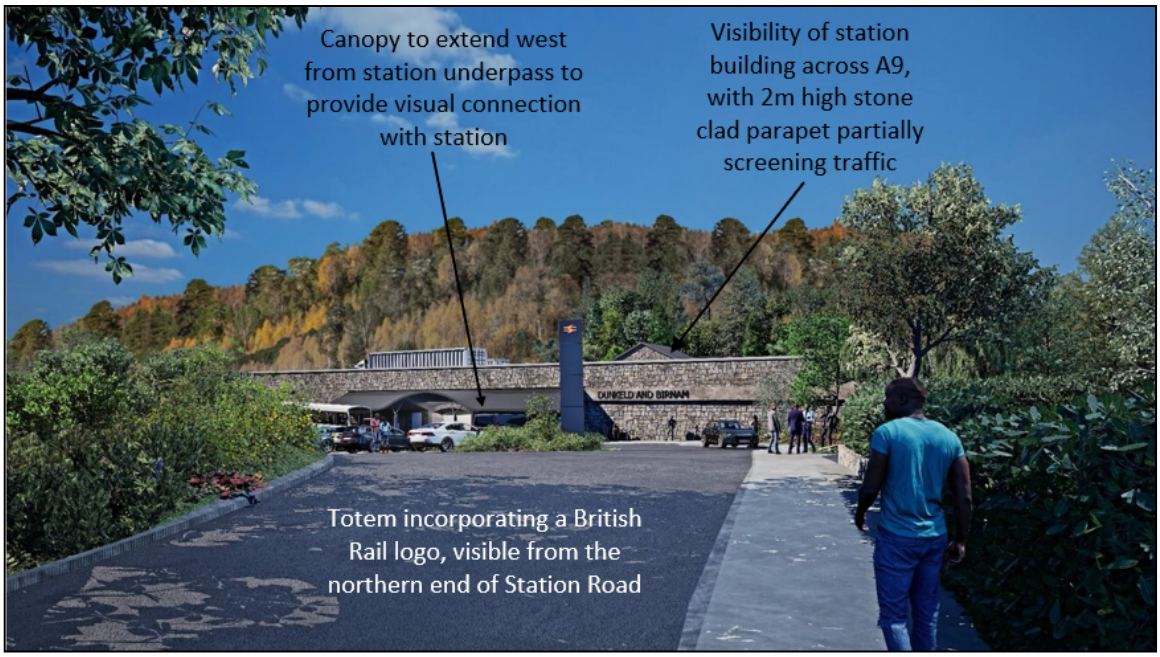

Image 10.7 – Artist's impression showing indicative view south along Station Road

ch4000 to ch4300 (TCA LD1 – North of Perth Road, Birnam Highland Games Park and War Memorial)

- The new at-grade, five-spur Dunkeld Junction Roundabout (ch4100, straddling the boundary between the Strath Tay: Dunkeld and Birnam (Settlement) and Lower Glen LLCAs), realigned side roads and associated cuttings and embankments and construction of retaining walls, altering landform and resulting in the loss of existing woodland and roadside trees and opening up the enclosed, wooded character of the existing A9 corridor and increasing the prominence of road infrastructure within TCA LD1. The realignment of

the A923 would open up views to traffic on the new roundabout from within TCA LD1, which together with views of proposed road lighting at the roundabout would have an 'urbanising' influence within the southern part of the TCA.

Ch4300 to ch4700 (TCAs D2 - Cathedral Street, The Cross, High Street and Stanley Hill, D3 - Bridge Street & Atholl Street and D4 - Upland Area & Spoutwells)

- Sections of the proposed scheme on embankment west of the River Braan Bridge would be visible from TCAs D2, D3, and D4 slightly altering perception of their setting.

10.6.23 The sensitivity of the LLCA to change associated with the proposed scheme has been determined as being Medium/High. The rationale to this rating is set out in Appendix A10.1 (Landscape Character).

10.6.24 The sensitivity of the TCAs within the LLCA to change associated with the proposed scheme has been determined as:

- TCA D1 - Cathedral and Environs: High sensitivity
- TCA D2 - Cathedral Street, The Cross, High Street and Stanley Hill: High sensitivity
- TCA D3 – Bridge Street & Atholl Street: High sensitivity
- TCA D4 – Upland Area & Spoutwells: High sensitivity
- TCA LD1 – North of Perth Road, Birnam Highland Games Park and War Memorial: Medium/High sensitivity
- TCA LD2 – Stell Park Road, Telford Gardens and King Duncan's Place: Medium sensitivity
- TCA B1 - Birnam Conservation Area (north of existing A9): High sensitivity
- TCA B2 – Birnam Conservation Area (south of existing A9): Medium/High sensitivity
- TCA B3 – Erigmore Leisure Park: Medium sensitivity
- TCA B4– South-East Corner of Birnam: Medium sensitivity

10.6.25 The rationale to this rating is set out in Appendix A10.2 (Townscape Character).

10.6.26 In the winter of the year of opening, the proposed scheme would result in a **Moderate** residual effect on the Strath Tay: Dunkeld and Birnam LLCA (Settlement). This level of residual effect would be incurred as a result of the Moderate magnitude of impact associated with the loss of defining features of the LLCA including roadside trees, and woodland, localised alterations to natural landform as a result of the new carriageway and alterations to the townscape around Dunked & Birnam Station resulting from the increased visual prominence of road infrastructure and traffic and widening the road corridor between the station and the main part of Birnam to the north. While most of the physical impacts to the features within the LLCA would be limited to a relatively narrow corridor closely associated with the existing A9, the proposed scheme would in the winter of the year of opening constitute a locally prominent feature within the LLCA.

10.6.27 In the winter of the year of opening, the proposed scheme would result in **Moderate** residual effects for TCA D1 – Cathedral & Environs, TCA LD1 – North of Perth Road, Birnam Highland Games Park and War Memorial, TCA B1 – Birnam Conservation Area (north of existing A9) and TCA B2 - Birnam Conservation Area (south of existing A9).

10.6.28 In the winter of the year of opening, the proposed scheme would result in Slight residual effects for D2 – Cathedral Street, The Cross, High Street and Stanley Hill, TCA D3 – Bridge Street & Atholl Street, TCA D4 – Upland Area & Spoutwells, TCA B3 – Erigmore Estate Leisure Park and TCA B4 – South-East Corner of Birnam, TCA.

10.6.29 The impact on the LLCA and TCAs would be mitigated by implementation of the proposed mitigation measures which include:

- The use of retaining walls or engineered slopes where appropriate to avoid extensive cuttings into hill slopes or large embankments that 'chase the slope' and increase the disturbance of the landscape (**Mitigation Item P02-LV8**).
- A proposed 2m high woven wattle fence along the back of the southbound verge between ch2430 and ch2900 and the back of the northbound verge alongside Dunkeld and Birnam Station between ch3205 and ch3420 to provide visual screening from traffic (**Mitigation Item P02-LV17**).
- Softening changes in slope associated with the realigned Perth Road/B867 by smoothing out transitions and rounding off top and bottom of cuttings (**Mitigation Item P02-LV8**).
- A 'naturalistic' design approach to SuDS features with the grading of earthworks and implementation of mixed and riparian woodland (**Mitigation Item P02-LV9**) to improve integration of the proposed SuDS features into the receiving landscape at ch2800 and ch4100.
- Retention of existing trees and vegetation wherever possible and incorporation with new planting proposals (**Mitigation Item P02-LV13**).
- Reinstatement of woodland by replacement planting, the species composition reflecting lost areas of woodland along the length of the proposed scheme within the LLCA (**Mitigation Item P02-LV14**).
- Special attention given to the townscape and place-making aspects of the proposed Dunkeld & Birnam Station Car Park (**Mitigation Item P02-LV25)**.
- Attention to be focussed on aesthetics in the detailed design of the new underpass structure providing access to Dunkeld & Birnam Station, such that the underpass appears as a new entrance to the station, taking visual cues from the station architecture (**Mitigation Item P02-LV25)**
- Natural stone-faced retaining wall at the end of Station Road with a stone parapet 2m above the level of the A9 to screen traffic in views from Station Road and adjoining residential properties; to include a mono pitched zinc roof to provide shelter and a visual connection to the station and its new (underpass) entrance (**Mitigation Item P02-LV25)**.

- Lighting at the Dunkeld & Birnam Station Replacement Car Park and Pedestrian Underpass will be designed to complement the street lighting within Birnam Conservation Area, while minimising intrusiveness in the form of spillage, glare and reflection (**Mitigation Item P02-LV25**).
- Special attention to the detailing and finishes of the proposed retaining wall along the northbound carriageway (ch3500 to ch3840) on the approach to the new Dunkeld Junction Roundabout (**Mitigation Item P02-LV12**).
- The proposed roundabout at Dunkeld has potential to incorporate planting as a gateway feature to add visual interest for road users and create a sense of place at this location (**Mitigation Item P02-LV26)**.
- Road lighting at Dunkeld Junction will be designed to minimise landscape impacts, using optimum spacing of columns to minimise visual clutter, while providing directional lighting and minimising light spillage (**Mitigation Item P02-LV22)**.
- Woodland planting to screen views of the proposed scheme west of the River Braan Bridge from TCAs (**Mitigation Item P02-LV17**).

Photograph 10.9: Example of wattle screen fencing (Mitigation Item P02-LV17)

10.6.30 On establishment of the proposed mitigation measures by summer 15 years after opening, particularly the maturation of the proposed woodland planting, it is predicted that the magnitude of impact to the LLCA associated with the proposed scheme would be reduced from Moderate to Minor. This reduction in the magnitude of change would result in a Slight residual effect on the Strath Tay: Dunkeld and Birnam LLCA (Settlement).

10.6.31 By summer 15 years after opening, it is predicted that the significance of residual effects on all the affected TCAs would reduce to Slight or Neutral.

10.6.32 A full description of the nearby settlements and a townscape assessment is provided in Appendix A10.2.

Strath Tay: Mid Glen LLCA

10.6.33 The northern extents of the proposed scheme lie within the Strath Tay: Mid Glen LLCA, between ch8280 and ch8420. A detailed description of the elements and features which define the LLCA is set out in Appendix A10.1 (Landscape Character). The impacts on the defining elements and features of the LLCA would result from an increased prominence of road infrastructure in the landscape caused by widening of the carriageway and associated cuttings on the southbound side, resulting in the loss of an area of low-lying scrub and a number of roadside trees.

10.6.34 The sensitivity of the LLCA to change associated with the proposed scheme has been determined as being Medium/High. The rationale to this rating is set out in Appendix A10.1 (Landscape Character).

10.6.35 In the winter of the year of opening, the proposed scheme would result in a Slight residual effect on the Strath Tay: Mid Glen LLCA. This level of effect would be incurred as a result of the Minor magnitude of impact associated with the loss of defining features of the LLCA including roadside trees and localised alterations to natural landform as a result of the new carriageway. The physical impacts to the features within the LLCA would be limited to a relatively narrow corridor closely associated with the existing A9.

10.6.36 This impact on the LLCA would be mitigated by implementation of the proposed mitigation measures of native scrub and species-rich grassland planting on the new cutting slopes to assist integration with the local landscape character (**Mitigation Items P02-LV19** and **P02-LV20**).

10.6.37 On establishment of the proposed mitigation measures by summer 15 years after opening, particularly the maturation of the proposed woodland planting, it is predicted that the magnitude of impact to the LLCA associated with the proposed scheme would be reduced from Minor to Negligible. This reduction in the magnitude of change would result in a Neutral residual effect on the Strath Tay: Mid Glen LLCA.

Landscape and Landscape Related Designations

River Tay (Dunkeld) National Scenic Area

10.6.38 A full description of each of the individual SLQs of the NSA and a detailed assessment of the predicted effects on each SLQ is provided in Appendix A10.3 (Special Landscape Qualities of the River Tay (Dunkeld) National Scenic Area).

10.7 Compliance Against Plans and Policy

10.7.1 DMRB LA 104, Environmental Assessment and Monitoring (National Highways et al., 2020b), states that environmental assessment, reporting and monitoring shall meet the requirements of the national planning policy for each relevant overseeing organisation.

10.7.2 Appendix A3.1 (Assessment of Policy Compliance) provides a review of national and local policy documents which are of relevance to the assessment undertaken and reported in this chapter in accordance with DMRB guidance. The compliance assessment undertaken in Appendix 3.1 focuses principally on the long-term effects of the proposed scheme rather than the short term, temporary effect from construction.

10.7.3 National policy objectives of relevance to this assessment are provided in the National Planning Framework 4 (Scottish Government, 2023). In addition, the Perth & Kinross Local Development Plan 2 (PKC, 2019) Policies 1 (Placemaking), 29 (Gardens and Designed Landscapes), 39 (Landscape), 40 (Forestry, Woodland and Trees), and 42 (Green Infrastructure) are of relevance along with guidance contained in Perth & Kinross Council Landscape Supplementary Guidance (PKC, 2020b), Forest & Woodland Strategy Supplementary Guidance (PKC, 2020a), and Placemaking Supplementary Guidance (PKC, 2020c).

Summary of Policy Compliance

10.7.4 It is considered that, due to the scale and nature of the development, the proposed scheme has the potential to conflict with policy which aims to assess proposals to the extent to which they are compatible with landscape character. However, it should be balanced against the existence of the current road and its relationship to the landscape and overall need for the scheme. The design has sought to reduce effects on landscape character and the mitigation identified would lessen the magnitude and significance of the road widening. It is therefore considered that the proposed scheme does, as far as possible, contribute to managing the future landscape and on balance complies with policy which seeks to reduce effects on the existing landscape. A full policy compliance assessment can be found in Table A3.1-3 in Appendix A3.1 (Assessment of Policy Compliance).

10.8 Statement of Significance

10.8.1 The alignment of the proposed scheme along the much of existing A9 and implementation of mitigation measures, including the integration of earthworks into the surrounding landscape and woodland planting, would help to limit the magnitude of change and significance of impact of the road widening.

Landscape/ Townscape Character

10.8.2 During the winter of the year of opening, the residual effects on the Strath Tay: Lower Glen LLCA would be significant (**Large**). In the summer 15 years after opening, following establishment of the mitigation planting, residual effects on this LLCA would reduce, but would remain significant (**Moderate**) due largely to the effects of the Birnam and Dalguise

grade separated junctions and cumulative losses of established woodland along the route corridor. Beyond 15 years, the level of effect is likely to continue to reduce further as woodland planting matures, particularly in areas such as the Birnam Junction and Dalguise Junction.

10.8.3 During the winter of the year of opening, the residual effects on the Lowland River Corridor: Strath Tay LLCA and Strath Tay: Dunkeld and Birnam LLCA (Settlement) (including TCAs D1, LD1, B1 and B2) would be significant (**Moderate**). However, in the summer 15 years after opening, following establishment of the mitigation planting, residual effects on these LLCAs (and TCAs) would reduce to not significant (Slight).

10.8.4 During the winter of the year of opening, Slight beneficial direct residual effects are predicted on the Lowland Hills -Tayside LCT due to the introduction of areas of mixed and broadleaved compensatory woodland planting at Muir of Thorn**.** However, in the summer 15 years after opening, following the establishment of these areas of compensatory woodland planting, **Moderate** beneficial residual effects are predicted on the Lowland Hills -Tayside LCT.

10.8.5 There would be no significant residual effects on the Strath Tay: Mid Glen LLCA, Highland Foothills LCA, Highland Glens LCA Highland Summits and Plateaux LCA and Lowland Hills LCA.

Landscape and Landscape Related Designations

10.8.6 There would be no significant risk to the integrity of the River Tay (Dunkeld) NSA. There would be **Moderate** residual effects during the winter of the year of opening on SLQs 1, 2, 3, 4, 5, 7 and 8. However, in the summer 15 years after opening, following establishment of the mitigation planting, residual effects on these SLQs would reduce to not significant (Slight).

10.8.7 There would be no significant landscape residual effects on Tay Forest Park.

10.9 References

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