SP ENERGY NETWORKS

East of Drymen | YW8

Changing the VIEW : Landscape Enhancement Proposals Workbook

Project Title: Changing the View : East Drymen Landscape Enhancement Proposals
Client: Scottish Power Energy Networks

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Project Background

1.1
LUC has been commissioned by ScottishPower Energy Networks (SPEN) to assess the visual impact of existing transmission infrastructure in the Loch Lomond and The Trossachs National Park, and identify areas suitable for potential mitigation in order to reduce identified visual impacts.

'Changing the VIEW' (Visual Impact of Existing Wirescape) is a project being driven by SPEN, to positively influence the visual impact of existing transmission infrastructure in some of Scotland's most sensitive and highly valued landscapes. The project presents a rare opportunity to reduce the landscape and visual impacts of infrastructure in specific areas within or near to National Parks and National Scenic Areas (NSAs). SPEN are keen to work collaboratively and in partnership with a range of stakeholders, to access a share of a £500 million OFGEM fund, to deliver the best possible outcome for the areas in which they operate.

1.2
SPEN greatly value the local expertise and knowledge of stakeholders in understanding the nature of landscape and visual impacts, the potential for mitigation, and importantly, the range of different interests which will influence the deliverability of any given project.

1.3
This stage builds on the work of our initial stakeholder consultation, overall review of existing landscape and visual impacts, and identification of potential projects to take forward

1.4
Stage 3 now builds on the work of our stakeholder consultation, overall review of existing landscape and visual impacts, and identification of potential projects to take forward. Each mitigation project will be developed in further detail, in conjunction with landowners and other stakeholders, to submit to OFGEM for consideration.

1.5
Stage 1 and 2 Findings
A landscape and visual impact assessment, undertaken by LUC, identified the key landscape and visual impacts associated with the existing overhead line in this section. In landscape terms the open plateau to the north of the A811 is better able to accommodate the line than the smaller scale, farmed landscape to the south, although the pylons detract from the wilder, more remote qualities of the landscape in the vicinity of Muir Park Reservoir. The line has a widespread visual influence in this section, with the network of roads and farm tracks providing some very close views, including from the Rob Roy Way, West Highland Way and National Cycle Route 7 (NCR7). From these popular routes some prolonged views will be available, particularly from Moor Park. The line is also visible from the A811, an important gateway into the National Park.

Introduction
1.6
The rolling farmland and moorland to the east / north-east of Drymen, in the south-east of the National Park, has been identified as an area which may benefit from mitigation. Through a process of stakeholder consultation and technical review, landscape enhancement was identified as the most appropriate form of mitigation.

1.7
The purpose of this workbook is to set out the reasons why the land east of Drymen would benefit from visual mitigation, and to present the options and ideas for landscape enhancement.

The Site

1.8
Site Description
The section of 275kV overhead transmission line identified for mitigation runs parallel to the south-eastern boundary of the National Park. In the south the line runs along the sides of a narrow, farmed and wooded valley; in the north it crosses Moor Park, an area of rolling moorland and conifer plantation. Forestry north of Moor Park is part of the extensive Loch Ard Forest, much of which is managed by the Forestry Commission. There are some farmsteads in proximity to the line eg at Upper Gartness and Drumhead. Woodland at Garadhban Forest is listed on the ancient woodland inventory.

The area around Drymen is a gateway to the National Park. The area is crossed by several long distance walking and cycling routes including the West Highland Way and John Muir Way in the south, and Rob Roy Way / National Cycle Route 7 in the north. There are also a number of core paths radiating out from Drymen. Moor Park forms

1.9
Other Projects and Initiatives
There are a number of ongoing projects and initiatives in the National Park.

The **Paths in the Park** project aims to support community groups in the National Park who wish to improve their community path networks. The project is led by the Loch Lomond and The Trossachs National Park Community Partnership, who work closely with the National Park Authority to provide information, training and guidance to enable path groups to develop community paths and identify methods to maintain them. One such project was undertaken in Drymen, to improve the surfacing of paths used by the local community.

1.10
The Whole Farm and Estate Plans is a pilot project which aims to help make farms and rural estates more economically and environmentally sustainable. The National Park Authority Land Use Team have been working with private land managers to produce long-term management plans which look at agriculture, forestry and sporting interests as well as conservation, renewable energy, tourism and recreation. The plans aim to achieve habitat improvements at a landscape scale.

1.11
The overhead line also falls within the project area for the **Strathard – a landscape to live, work & play project**. This is a project which aims to improve land, forest and water management decisions in Strathard using an ecosystems approach, which recognises that natural and human systems are connected.

Opportunities for Mitigation
1.12
Stakeholders identified this area as an important gateway into the National Park, where the line is visible to local communities and large numbers of visitors including those on popular long distance walking routes. Engineering options such as undergrounding or re-routeing were not thought to be cost-effective by stakeholders, and would result in similar landscape and visual effects as the existing line. Landscape enhancement, focused on reducing visibility from popular walking routes, was therefore identified as the most appropriate solution for further exploration. This received much stakeholder support as it was judged to be a cost effective means of delivering large scale change, which would benefit many users of the National Park.

1.13
The long-term aim of landscape enhancement in this area would be to improve the visual experience from the West Highland Way, John Muir Way, Rob Roy Way and National Cycle Route 7. This could be undertaken via diversions, new planting, or a combination of the two. New planting could take the form of small community woodlands, which could also provide opportunities for recreation as well as screening. National Cycle Route 7 was identified by stakeholders as being in relatively poor condition, and upgrading works to its surfacing could be undertaken in tandem.

1.14
There are opportunities to tie in landscape enhancement with a long-term forestry management plan for the area, which would ensure that woodland screening of the overhead line would be retained over time.

2 Site Appraisal

Context
2.1
This section of the line runs between Upper Gartness farm on the boundary of the National Park, in the south, and the rolling moorland between Green Hill (270 m AOD) and Bàt a' Charchel (230 m AOD), in the north. It is approximately 6.5 km in length. The line runs parallel to the National Park boundary, running briefly outside the National Park south of Muir Park Reservoir. The line crosses rolling farmland and narrow wooded valleys in the south, and open moorland in the north. There are some farmsteads in proximity to the line, and it crosses part of the West Highland Way and John Muir Way in the south, and Rob Roy Way / National Cycle Route 7 in the north.

Character/ landscape pattern
2.2
The line crosses two landscape character types; River Valley Farmland and Estates in the south and Plateau Moor and Forest in the north, with the A811 as the dividing line. South of the A811 (Old Military Road) the landscape is characterised by its rolling valley landform, farmed and settled nature and presence of small woodlands and broadleaf trees. North of the A811 the landscape is more undulating, with open grassland and heather moorland, fringed by forestry.

Visual amenity and Views
2.3
The line is highly visible in this section, particularly from the more elevated open moorland areas in the north. Roads and tracks provide some very close views of the line, including from the Rob Roy Way and West Highland Way. The area is a gateway to the National Park, and the line is visible from part of the A811, one of the main routes into the park.

Special qualities and Landscape Features
2.4
South of the A811 the farmland displays some of the Special Qualities of the National Park, with intact field patterns, roman roads and a fort at Drumquhassle. North of the A811 fewer Special Qualities are on display, except for some wetland/bog habitat.
There is some ancient woodland at Garadhban Forest.

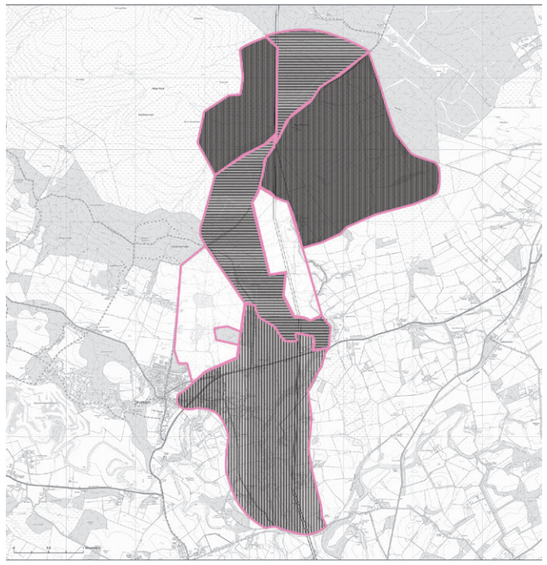
Mitigation Proposals
2.8
There is an opportunity to introduce planting to parts of the landscape in this section, to screen views from the most sensitive receptors, including users of the West Highland Way, John Muir Way, Rob Roy Way and National Cycle Route 7. This planting could take the form of small community woodlands, which could also provide opportunities for recreation as well as screening.

Landscape management
2.9
Woodland management for creating and maintaining continuous woodland cover along the route of the Rob Roy Way and NCR7. This also includes the removal of regenerating Sitka Spruce trees and Rhododendron, where applicable.

P1. Site Photographs


Images above illustrate the experience of the lines along this section of the Rob Roy Way and NCR7.


F2.1 Local Landscape Character Areas



Key

A Moorland Hill Fringe

B Moorland Hill Fringe with Forestry

C Rolling Farmland with Woodland Shelterbelts

D Rolling Farmland

F2.2 Existing Vegetation

Key

A Deforested

B Broadleaf Woodland along Altquhur

C Mixed Woodland

D Forestry Plantation (Coniferous)

E Upland Moorland Grassland

F Managed Farmland Pasture

F2.3 Visibility from Existing Routes and Views

Key

Very high visibility

High visibility with some screening & interveening tree planting

Medium visibility at a distance with no skylining

Some visibility intermittent screened tree planting

No Visibility

Long ranging views

Medium ranging views

360° medium ranging views

F2.4 Special Qualities and Landscape Features

Key

Historic/heritage

Altquhur burn

Muir Park Reservoir

Rob Roy Way

West Highland Way

NCR7

3 Precedent Projects and Guiding Principles

General

3.1
This first section of this chapter sets out precedent projects, the principles of which, inform the development of concept design for East Drymen.

This section is followed by the setting of guiding principles which have been developed to inform the design process for landscape enhancements for the mitigation of visual impacts of lines on the experience of the Rob Roy Way, West Highland Way, NCR7 and wider East Drymen area.

The guiding principles have been set out as a workthrough to demonstrate the following design elements which are to be taken into consideration during design development:

- Great Trossachs Forest and Scottish Natural Heritage Woodland Typologies;
- Materials;
- Woodland edge treatments;
- Woodland glade/ ride creation;
- Feathered woodland upland edge creation;
- Woodland establishment;
- Footpath creation; and
- Woodland planting structure.

Precedent Project

3.2
The following project has been identified as examples of the proposal that could be developed in East Drymen.

Strathfillan Community Woodland
The Strathfillan Community Development Trust have developed, planted and bought the 100 hectare Tyndrum Community Woodland, and co-manage the Crianlarich Community Woodland with the Forestry Commission. Tyndrum Community Woodland was set up with the long term aim of establishing new native woodland with community involvement as part of the Millennium Forest for Scotland. The site was previously a young conifer plantation; the SCDT replanted with Scots Pine and Downy Birch, and the woodland has a promoted ‘figure of eight’ walking route, which includes part of the West Highland Way. The Community Woodland has a Management Plan in which biodiversity, cultural heritage and recreation are the primary objectives.

P2. Precedent Project Photographs


Strathfillan Community Woodland: Images showing native woodland planting and regeneration

Strathfillan Community Woodland: Images showing woodland lined footpath/ cycleway

Planting

3.3
The following images display the proposed planting species and style, and materials palette which are proposed to be used in East Drymen.

3.4
The following is a list of native species which can be drawn on for woodland mixes. Many of these species are common to the National Park. **The Biodiversity Action Plan for the National Park** (Wild Park 2020) notes that expanding and restoring native woodland is one of the major goals for Forestry Commission land in the National Park.

Woodland mixes

Pinus sylvestris	Scots pine
Betula pendula	Silver birch
Betula pubescens	Downy birch
Alnus glutinosa	Alder
Populus tremulus	Aspen
Fraxinus excelsior	Ash
Fagus sylvatica	Beech
Carpinus betulus	Hornbeam
Quercus robur / Quercus petraea	Oak (Common / Sessile)
Sorbus aucuparia	Rowan
Sorbus intermedia	Whitebeam
Prunus avium	Wild cherry / Gean
Salix fragilis / alba / caprea / cinerea / aurita	Willow (Crack / White / Goat / Grey / Eared)
Ulmus glabra	Wych elm
Acer campestre	Field maple
Ilex Aquifolium	Holly
Juniperus communis	Common Juniper

Native Hedgerow / Shrubs / Understorey

Crataegus monogyna	Hawthorn
Prunus spinosa	Blackthorn
Acer campestre	Field maple
Corylus avellana	Hazel
Fagus sylvatica	Beech
Ilex Aquifolium	Holly
Lonicera periclymenum	Honeysuckle
Sambucus nigra	Elder
Rosa canina	Dog rose
Rosa rubiginosa	Sweet briar
Viburnum Opulus	Guelder rose
Ligustrum vulgare	Wild privet

P3. Indicative Planting Palette Photographs


Silver birch (Betula pendula)


Rowan (Sorbus acuparia)


Alder (Alnus glutinosa)


Hazel (Corylus avellana)


Beech (Fagus sylvatica)


Scot's pine (Pinus sylvestris)


Holly (Ilex aquifolium)


Dog rose (Rosa canina)


Birch and Willow (Betula spp. and Salix spp.)


Goat willow (Salix caprea)


Blackthorn (Prunus spinosa)


Hawthorn (Crataegus monogyna)


Juniper (Juniperus communis)


Common Oak (Quercus robur)


Downy birch (Betula pubescens)

Planting/ Woodland Typologies

A. Native pine woodland

Altitudinal range from sea level to over 600m on steeply sloping ground with dry to damp acidic soils. Occurs with upland oakwood, upland birchwood and wet woodland habitats and also in patches within non-native conifer plantations.

Woodland Layer (Primary) 85%
Pinus sylvestris (Scot's pine)
Woodland Layer (Secondary) 15%
Betula pendula (Silver birch)
Betula pubescens (Downy birch)
Sorbus acuparia (Rowan)
Alnus glutinosa (Alder)
Salix cinera (Grey willow)
Ilex aquifolium (Holly)
Corylus avellana (Hazel)
Shrub/ Understorey Layer
Salix aurita (Eared willow)
Juniperus communis (Juniper)

B. Upland birchwoods

Moderate/ steep slopes generally below 400m, with well drained soils, but can extend well above this, can also occur in mosaics with Upland oakwoods, upland mixed ashwoods and wet woodland habitats.

Woodland Layer Primary 85%
Betula pendula/ pubescens (Birch spp.)
Woodland Layer (Secondary) 15%
Pinus sylvestris (Scot's pine)
Shrub/ Understorey Layer
Juniper (Juniperus communis)
Eared willow (Salix aurita)
Aspen (Populus tremula)
Grey willow (Salix cinera)

C. Upland mixed ashwoods

Moderate/ steep slopes with moist soils below 300m, in association with upland oakwood, upland birchwood and wet woodland habitats. Is also found in scattered patches on steep crags up to about 500m.

Woodland Layer (Primary) 85%
Fraxinus excelsior (Common ash)
Ulmus glabra (Wych elm)
Woodland Layer (Secondary) 15%
Grey willow (Salix cinera)
Hazel (Corylus avellana)
Downy birch (Betula pubescens)
Elder (Sambucus nigra)
Sorbus acuparia (Rowan)
Shrub/ Understorey Layer
Blackthorn (Prunus spinosa)
Dog rose (Rosa canina)
Eared willow (Salix aurita)
Gorse (Ulex europaeus)

D. Atlantic oakwoods

Moderate/ steep slopes below 300m in with well drained soils. Can occur in mosaics with upland birchwoods, upland mixed ashwoods and wet woodland habitats. Oak forms >30% of the canopy cover.

Woodland Layer (Primary) 80%
Sessile Oak (Quercus patraea)
Common Oak (Quercus robur)
Woodland Layer (Secondary) 20%
Silver birch (Betula pendula)
Rowan (Sorbus acuparia)
Hazel (Corylus avellana)
Holly (Ilex aquifolium)
Shrub/ Understorey Layer
Juniperus communis (Juniper)
Bramble (Rubus fruticosus)
Dog rose (Rosa canina)
Gorse (Ulex europaeus)
Broom (Cytisus scoparius)

E. Wet woodland

Flushed slopes, wet hollows, valley floors and edges of wetlands, rivers streams and lochs in upland and lowland situations.

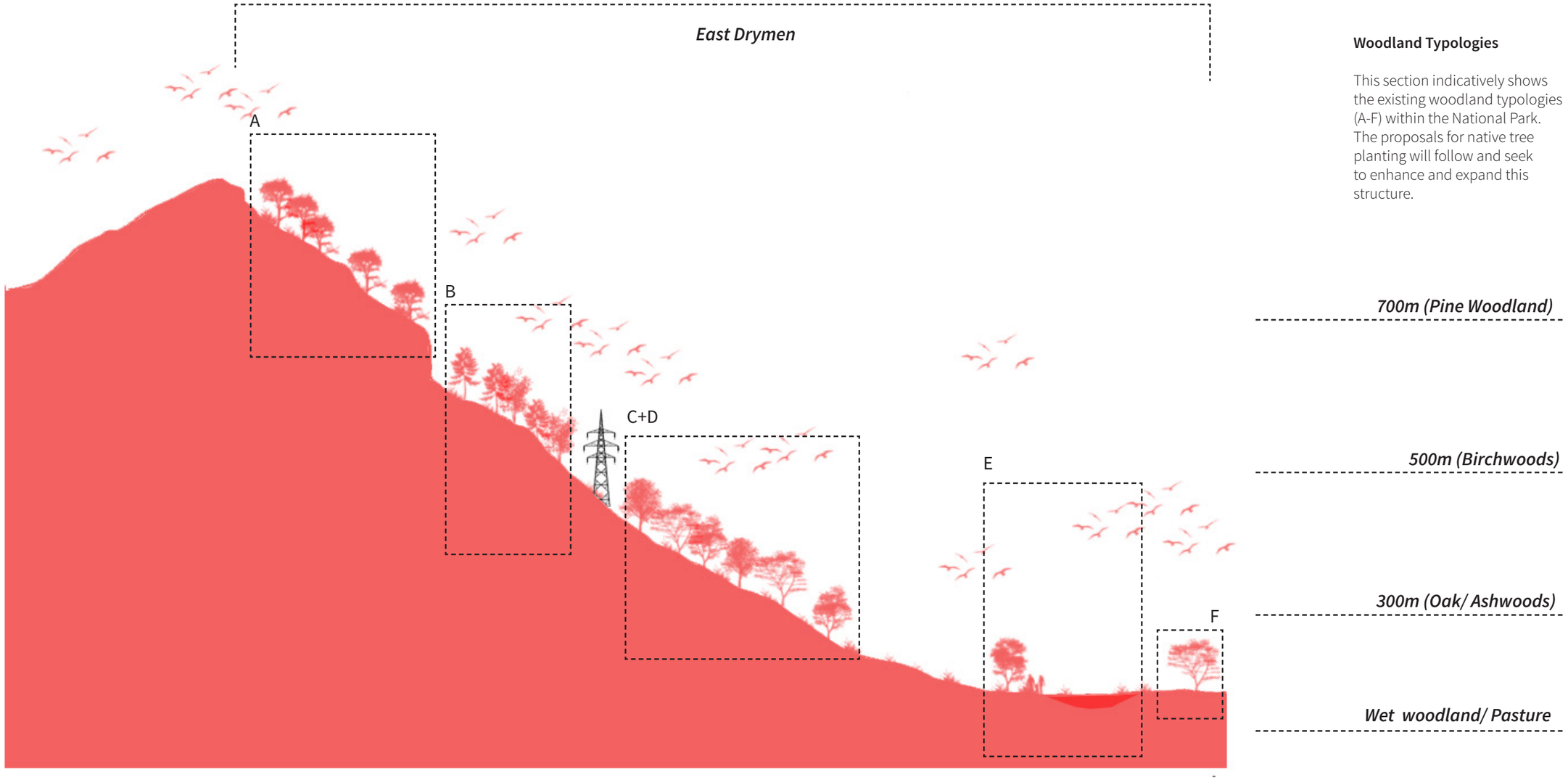
Woodland Layer (Primary) 100%
Grey willow (Salix cinera)
Goat willow (Salix caprea)
Downy Birch (Betula pubescens)
Alder (Alnus glutinosa)
Shrub/ Understorey Layer
Eared willow (Salix aurita)
Osier (Salix viminalis)
Hawthorn (Crataegus monogyna)

F. Wood-pasture and Parkland

Mostly below 300m in altitude in areas of native or plantation woodland or enclosed farmland. In upland areas most commonly associated with native woodland.

Tree Planting
Sessile Oak (Quercus patraea)
Common Oak (Quercus robur)
Ash (Fraxinus excelsior)
Alder (Alnus glutinosa)
Birch (Betula pendula/ pubescens)
Scot's pine (Pinus sylvestris)
Hazel (Corylus avellana)
Hawthorn (Crateagus monogyna)

F3.1 Indicative Section Woodland Typologies



Woodland Typologies

This section indicatively shows the existing woodland typologies (A-F) within the National Park. The proposals for native tree planting will follow and seek to enhance and expand this structure.

Materials

G. Fencing

To ensure successful establishment of the proposed native woodland planting area will require to be deer/ sheep fenced for protection from grazing animals. All new woodland will be fenced in accordance with Forestry Commission/ National Park technical guidance and specification.

Fence lines will be designed to be sympathetic to natural contours and integrate forest edges into the landscape, creating natural forest edges as detailed over the following pages.

All fencing shall be treated softwood timber with a durability of 40 years plus with combination of rectangular wire mesh and hexagonal wire mesh netting galvanised to BS EN 10244-2 to prevent deer and wild mammal species. Fencing shall be min. 1.8m in height, 300mm x 220mm max. mesh size with 1050mm wide rabbit/ hare proof hexagonal 31mm mesh netting to base to be turned back by 150mm and pinned.

Treated softwood timber stiles and gates will also be required to facilitate access for woodland management activities. There will also be a requirement to cross streams in some locations which will require appropriate design to prevent access.

All areas shall be assessed by a qualified ecologist to identify species requirements i.e. badgers etc. to ensure appropriate gates are installed.

H. New Footpaths

All new footpaths shall be designed in accordance with SNH/ National Park/ Upland Path Advisory Group technical guidance i.e. Upland Pathwork Construction Standards for Scotland/ Constructed tracks in the Scottish Uplands.

In general paths should be constructed using locally won aggregate where possible to a width varying between 600-1200mm and a minimum depth of 250mm. Minimum depths for path construction are as follows:

- 50mm of compacted surface material;
- 100mm of compacted base material; and
- 150mm of sub-base material.

Excavated material with turfs and boulders shall be used to define and contain the path edge, with the path surface sitting slightly higher than the ground at the path edge to avoid water collecting.

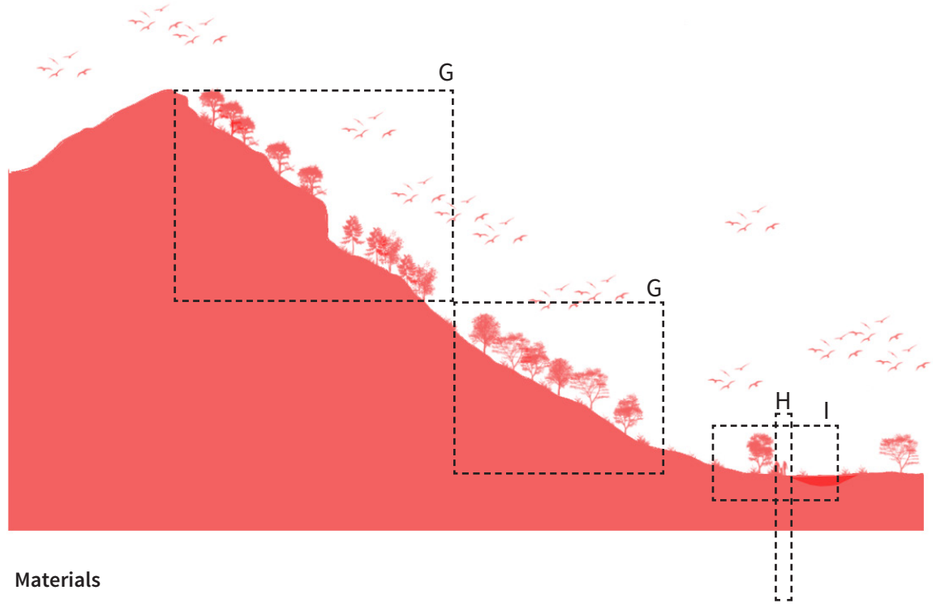
Localised site conditions will require independent assessment of suitable construction methods and materials i.e. in situations of peat/ waterlogged ground which may require matting/ geotextile use.

I. Wayfinding

The proposals involve the provision of alternative routes through the site area resulting in the requirement for creation new pathways which deviate from the existing routes. There is therefore a requirement to ensure these are adequately sign posted to ensure that these routes are adopted by users. To assist with this it is proposed that a wayfinding strategy is created to include implementation of the following:

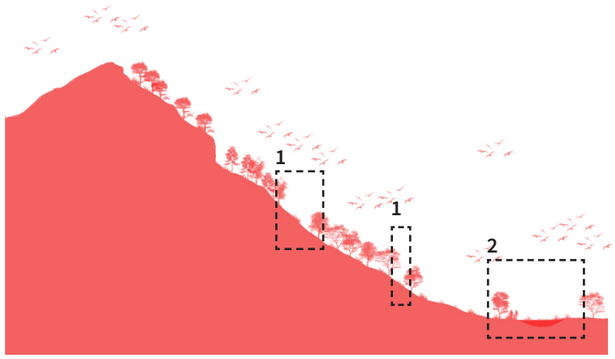
- Fingerpost directional signage;
- Waymarking posts; and
- Orientation panels.

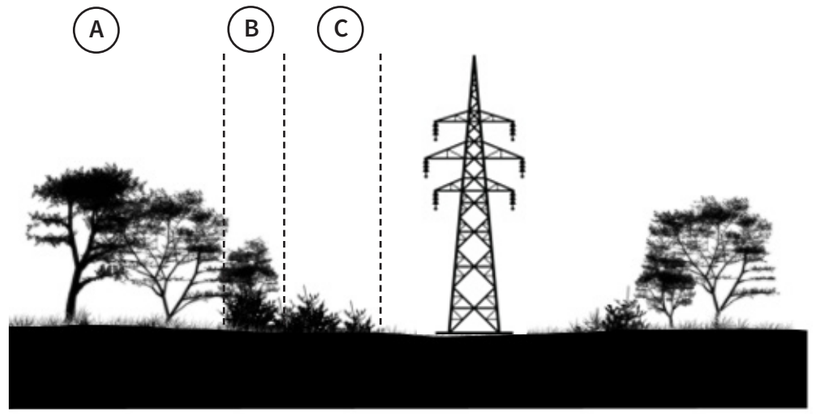
All signage and wayfinding elements are to be design sensitively to suit the surrounding setting and be appropriate in scale and location in accordance with National Park/ Signage Guidance for Outdoor Access guidance. Materials to be utilised shall be durable treated where appropriate to provide a long lifespan.



Materials

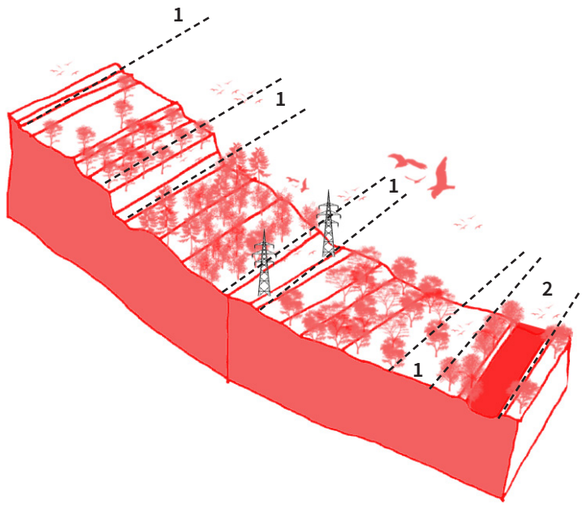
This section indicatively shows where proposed materials for fencing, footpaths and wayfinding will be deployed.

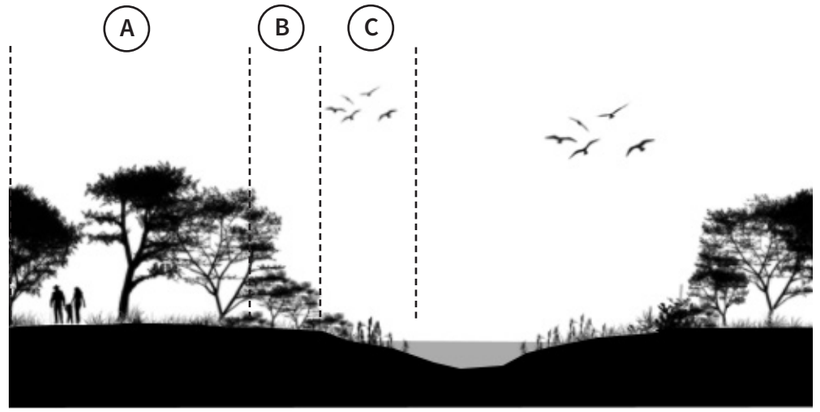




F3.2
Woodland Edge Treatment 1 indicative Section

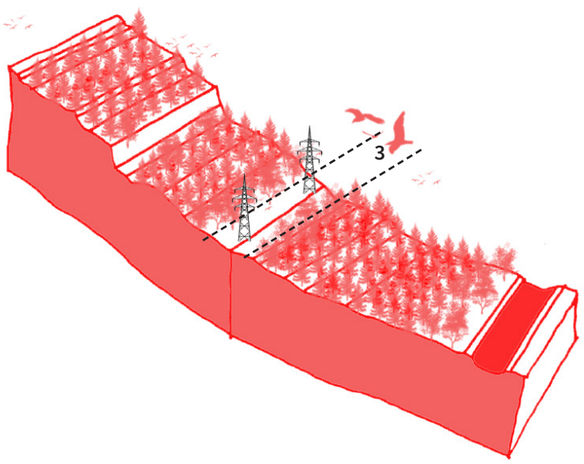
This treatment will be deployed in areas where new woodland is to be created along the wayleave and to all new woodland edges and glades.

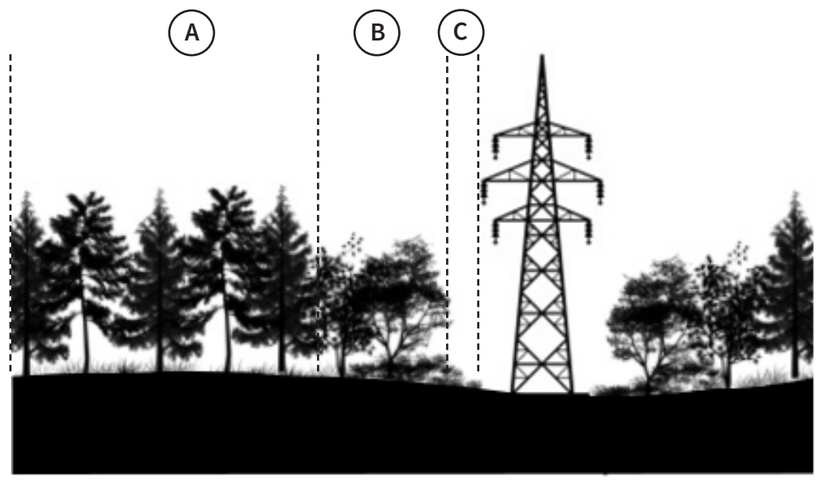




F3.3
Woodland Edge Treatment 2 Indicative Section

This treatment will be deployed in areas where new woodland is to be created along water edge/ riparian woodland.





F3.4
Woodland Edge Treatment 3 Indicative Section

This treatment will be deployed in areas where new woodland is to be created to existing plantation wayleave.

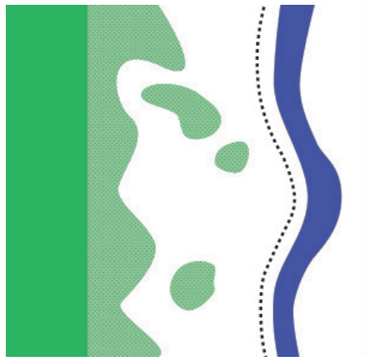
A. Woodland zone
B. Shrub zone
This is the transition zone between trees and the open area of the wayleave/ open space.
C. Herb zone
This is the transition zone between trees and the open area of the wayleave/ open space.

F3.5
Woodland Edge Treatments
indicative Plan DIagrams

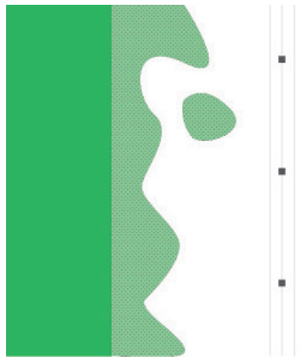
The following plan diagrams illustrate the proposed edge treatment in situations likely to arise during the design development and implementation of native woodland planting. These are intended to act as a guide for edge treatments in the scenarios likely to be encountered.

Treatments all propose naturalistic design of the permanent woodland and woodland edge through creation of glades, rides, scalloped edges, habitat islands and feathered edges to upland slope sides through sensitive following of natural hollows and depressions within the existing landform.

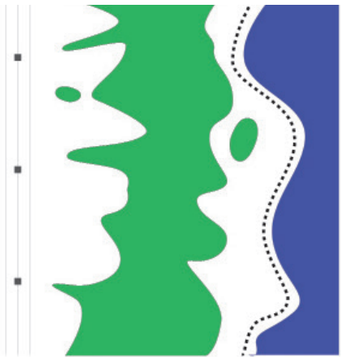
Native woodland edge to existing forestry and open space



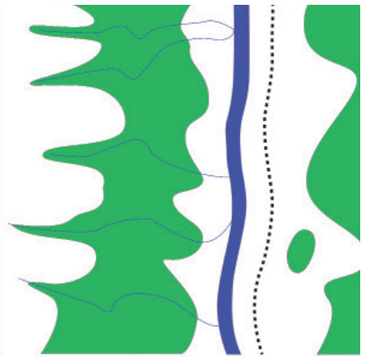
Native woodland edge to wayleave



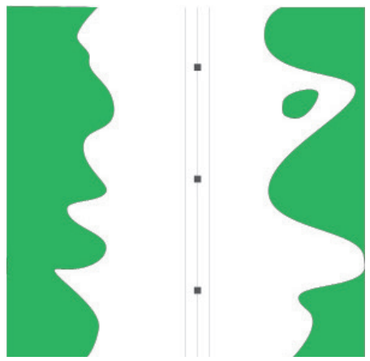
Native woodland on lower slopes between waters edge and wayleave



Native woodland on steep slopes with tributaries



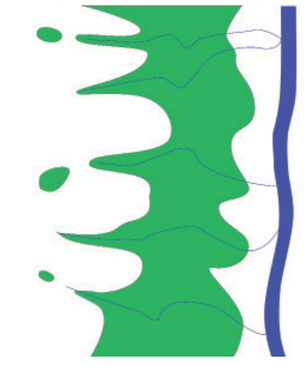
New native woodland edge to wayleave



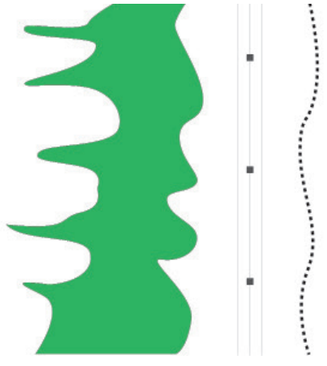
Riparian/ wet woodland corridor along rivers/ streams

Native woodland edge to river/ stream and footpath

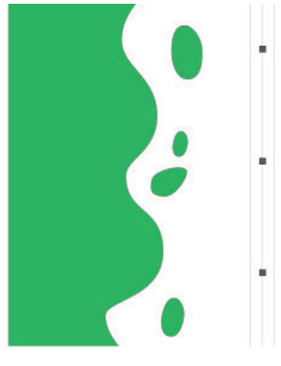
Native woodland planting edge to upland glen



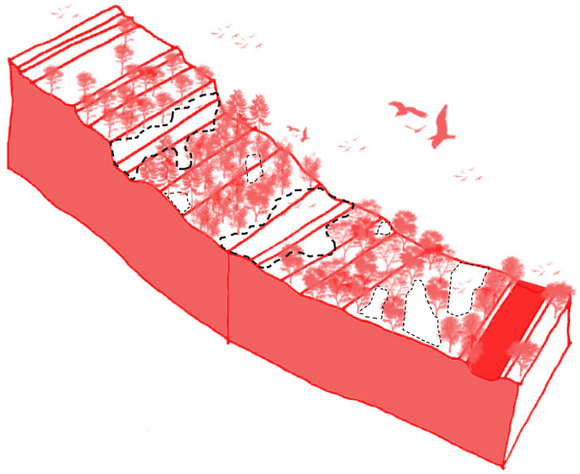
Native woodland planting to lower slopes and wayleave edge



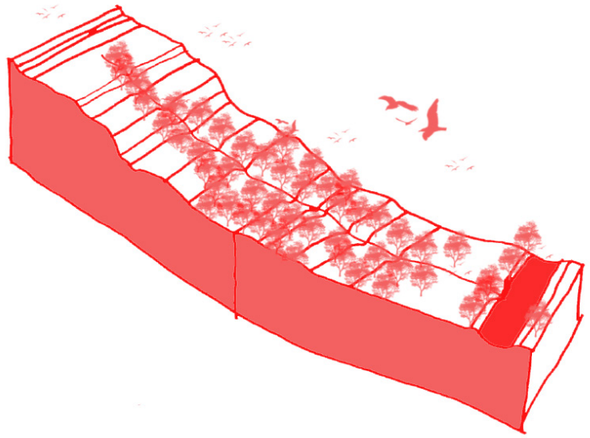
Native woodland edge to wayleave

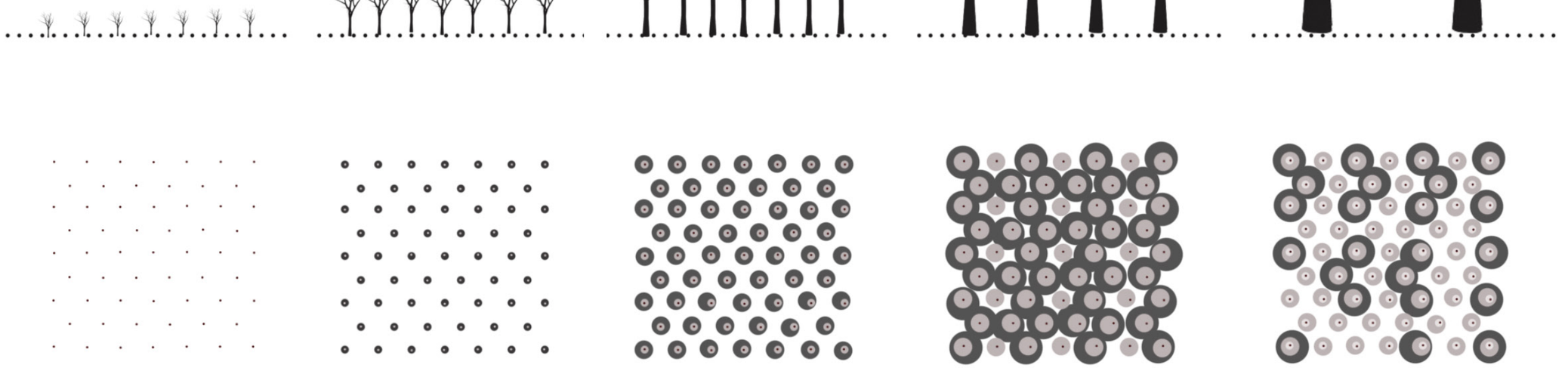


F3.6 Woodland Glade/ Ride Creation



F3.7 Feathered Woodland Upland Edge Creation





F3.8
Woodland Establishment Diagrams

1 year old
Whips at 0.5m-1.0m height and 15cm wide; trunk 2cm wide

Age: 1 year
Canopy: 15cm
Height: 0.5m-1.0m
Girth: 2cm

5 years old
Growth 2.0m-3.5m height and 0.6m wide; trunk 8-10cm wide

Age: 5 years
Canopy: 0.6m
Height: 2.0-3.5m
Girth: 8-10cm

10 years old
6.0-7.5m height and 1.2m wide; trunk 15-20cm wide

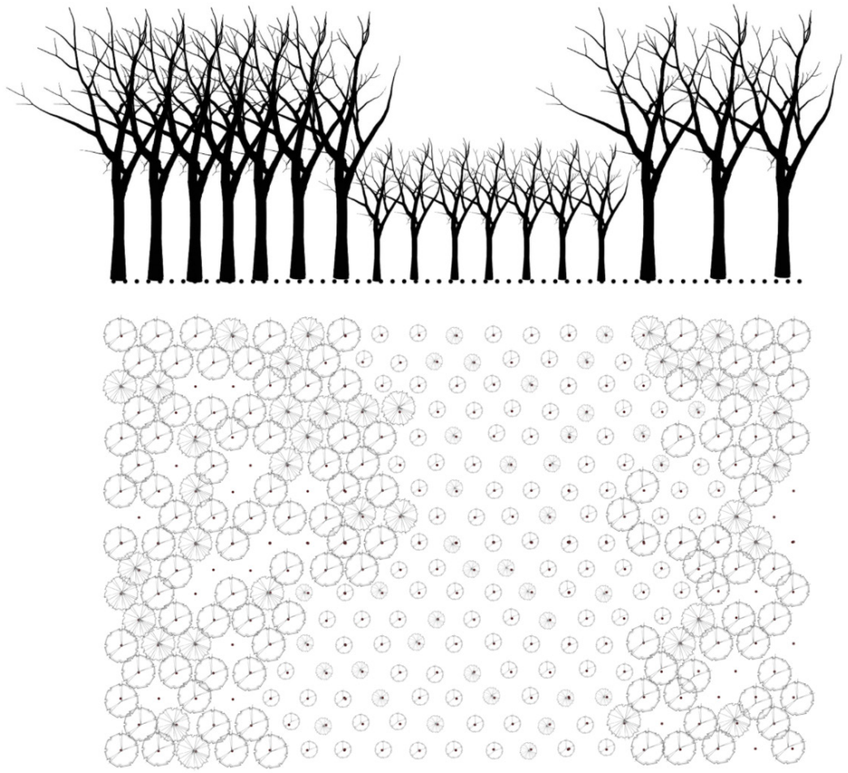
Age: 10 years
Canopy: 1.2m
Height: 60-7.5m
Girth: 15-20cm
Thinning: every 5-10 years

25 years old
10-15m height and 7m wide; trunk 25cm wide

Age: 25 years
Canopy: 7m
Height: 10-15m
Girth: 25cm
Thinning: every 5-10 years

40 years old
20-30m height and 10-15m wide; trunk 30-40cm wide

Age: 40 years
Canopy: 10-15m
Height: 20-30m
Girth: 30-40cm
Thinning: every 5-10 years



F3.9
Mixed Age Woodland
Establishment Diagram

25 and 10 year old
Planting carried out at 15 year intervals to ensure diversity of age of woodland for ecological benefits.
Above shows indicative woodland at 25 and 10 years of age.

F3.10
Footpath Creation Treatment 1
Indicative Section

A. Wayleave
B. Wet Woodland/ Riparian zone
This is the transition zone between trees and the open area of the wayleave/ open space.
C. Footpath on water's edge on valley/ glen floor

This treatment will be deployed in areas where footpaths are proposed directly adjacent to the water's edge.

F3.11
Footpath Creation Treatment 2
Indicative Section

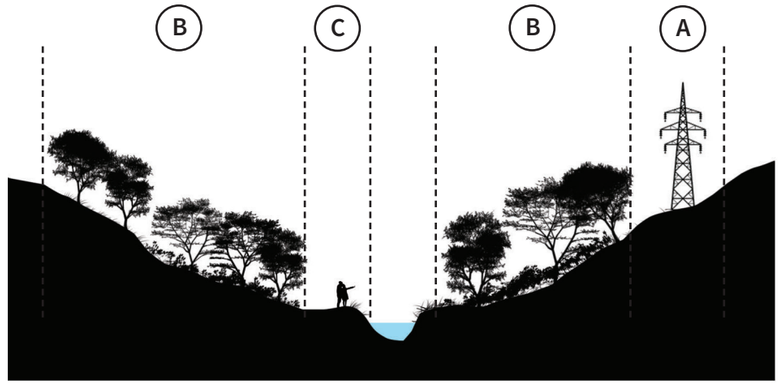
A. Wayleave
B. Wet Woodland/ Riparian zone
This is the transition zone between trees and the open area of the wayleave/ open space.
C. Footpath away from water's edge on lower slope sides
D. Herb/ Wetland zone

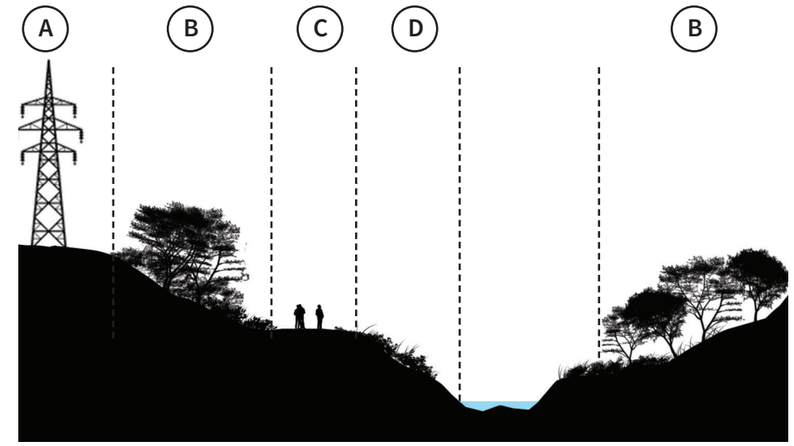
This treatment will be deployed in areas where footpaths are proposed to lower slope sides in close proximity to water's edge.

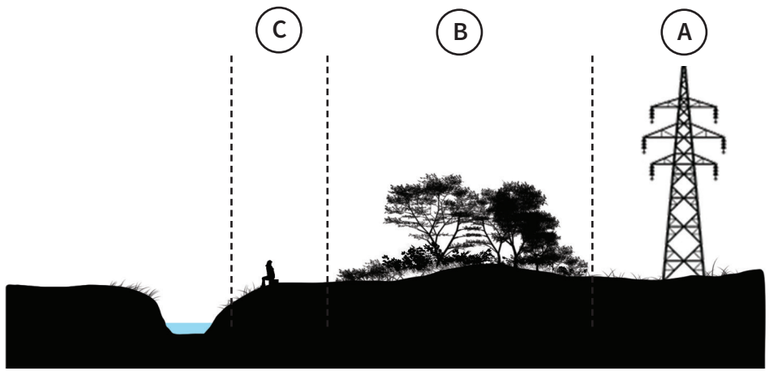
F3.12
Footpath Creation Treatment 3
Indicative Section

A. Wayleave
B. Wet Woodland/ Riparian zone
This is the transition zone between trees and the open area of the wayleave/ open space.
C. Footpath away from water's edge on lower slope sides

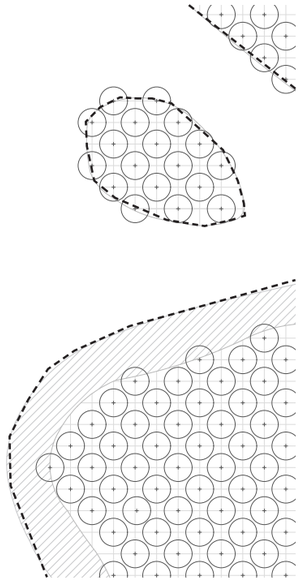
This treatment will be deployed in areas where footpaths and viewpoints are proposed to open space/ open water.



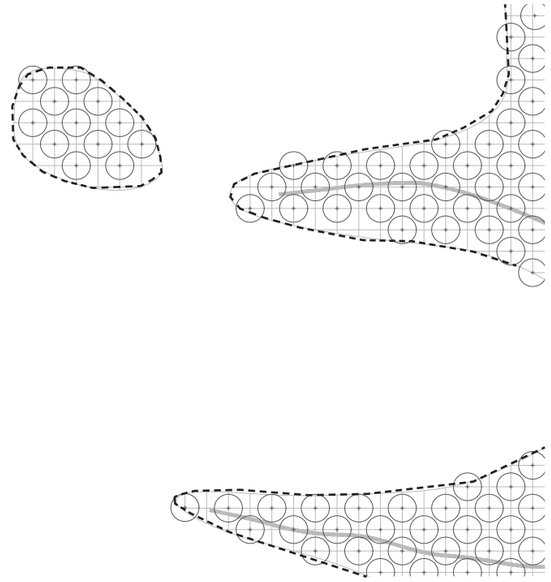




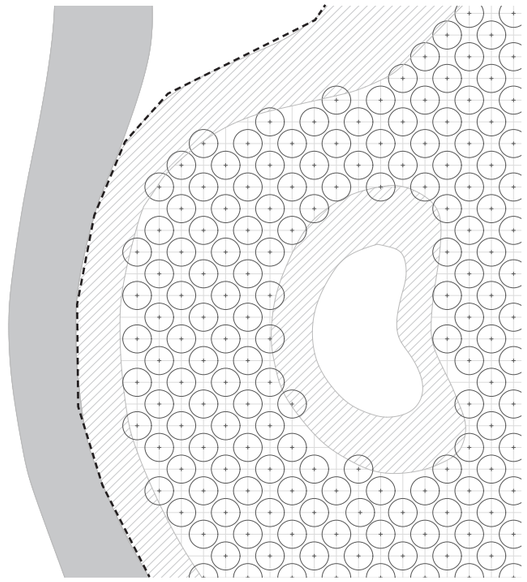
F3.13
Woodland Edge Indicative Planting Structure



A. Wayleave with habitat island
Woodland planting to interior. Dashed black line indicates extents of area to be fenced during establishment. The hatched area illustrates area not to be planted but to allow for natural regenration to form shrub zone.

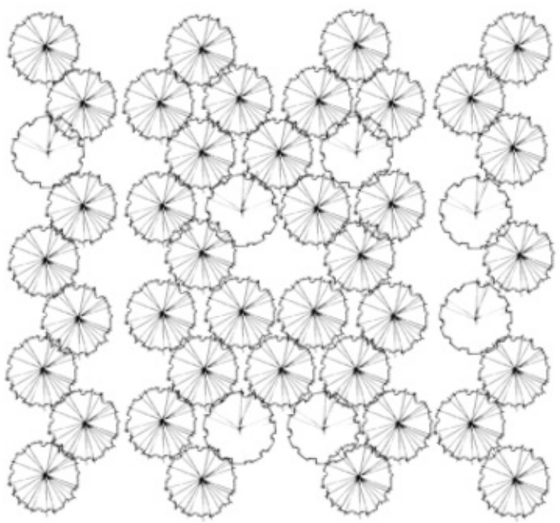


B. Upland slope with tributaties and habitat island
Woodland planting to upland edge to follow natural hollows and depressions. Dashed black line indicates extents of area to be fenced during establishment.

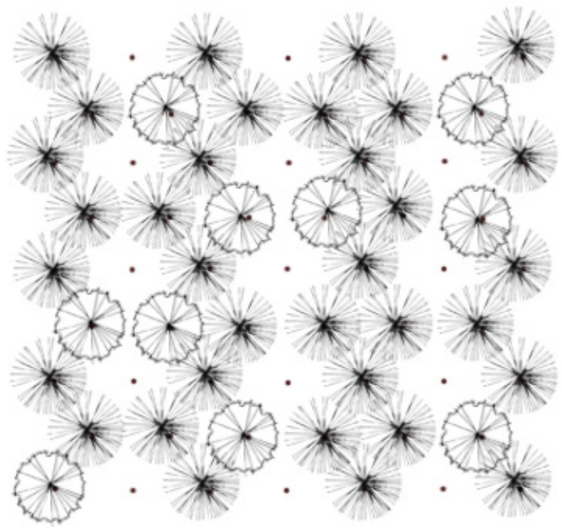


C. Water edge with woodland glade
Woodland planting to interior with areas left unplanted to form glades within the woodland mosaic. Dashed black line indicates extents of area to be fenced during establishment. The hatched area illustrates area not to be planted but to allow for natural regenration to form shrub zone.

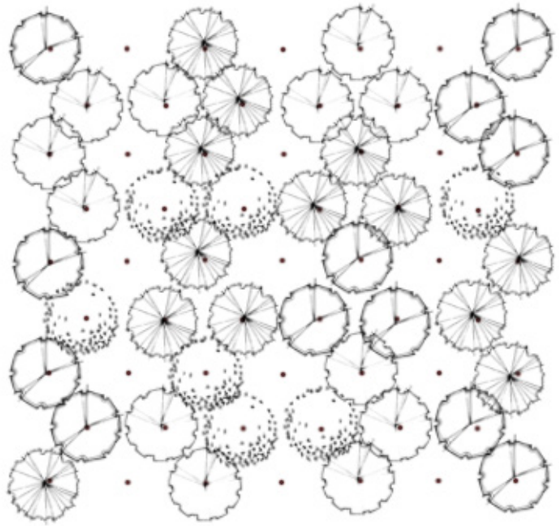
F3.14
Indicative Woodland Structure (25 years old)



A. Native Birch/ Ash/ Oakwoods



B. Native Pinewood



C. Wet Woodland

General

4.1
The findings from the site appraisal have been taken forward to inform the development of the overall concept for landscape enhancement proposals. Due to the size of the area and the complexities of the landscape, a series of options were developed which provide different solutions for mitigation of the visual impact of the line within the East Drymen area, and associated Rob Roy Way, West Highland Way paths and NCR7, which provide popular long distance walks and access to the open countryside.

4.2
Three potential options have been developed and are set out in this chapter. Analysis of each option has also been carried out, to ascertain strengths and weaknesses, and assist in determining the most suitable option to take forward and develop further to outline design stage.

4.3
Option 1
This option explores retaining the current route of the West Highland Way and NCR7 along Gartness Road, with improvements made to the existing fragmented hedgerow which follows alongside the road. Improvements are proposed in the form of new hedgerow planting and planting of hedgerow trees at regular intervals where sightlines allow. Supplementary to this a narrow belt of native tree planting in proposed along the field boundary with the road.

The proposed landscape enhancement measures in the form of tree and woodland planting will assist in providing intermittent screening of the line from the West Highland Way along Gartness Road. However, it is likely the line will still be clearly visible due to the elevation of the route relative to the line; on opposite sides of the Altequhur Burn.

This option also proposes field boundary planting to the section of the West Highland Way and NCR7 to the north of the A811 and south of the Garadhban Forest. This is proposed, to screen views of the line to the east of this open section of the route.

Native woodland planting is also proposed along the exposed and open section of the Rob Roy Way and NCR7 on the Old Military Road, which runs perpendicular to the line. This will provide enhanced screening to this section of the route and supplement existing woodland and forestry planting within the wider area.

An alternative route for the Rob Roy Way has also been proposed around Muir Park Reservoir. This would provide further screening of the line from the route due to proposed native tree planting and change in aspect of view.

4.4
Option 2
This option explores creating an alternate route for users of the West Highland Way and NCR7, which runs from Gartness Road along the base of the Altequhur Burn valley before traversing the valley side to join the existing route along an already screened section. This will be supplemented by native woodland planting to the Altequhur Burn valley base to assist with screening views of the line and enhance the existing riparian habitat along the burn.

The proposed new route and associated landscape enhancement native woodland planting will assist in providing enhanced screening of the line due to location within the valley providing oblique views of the line. The top of the pylons will still be visible from the new route however; an enhanced user experience with largely screened views will be created.

This option also proposes woodland planting to the section of the West Highland Way to the north of the A811 and south of the Garadhban Forest. This is proposed, to screen views of the line to the east of this open section of the route.

Extensive native woodland planting is also proposed along the exposed and open section of the Rob Roy Way and NCR7 on the Old Military Road, which runs perpendicular to the line. This will provide enhanced screening to this section of the route and supplement existing woodland and forestry planting within the wider area.

An alternative route for the Rob Roy Way has also been proposed around Muir Park Reservoir. This would provide further screening of the line from the route due to proposed native tree planting and change in aspect of view.

This proposal also identifies potential viewpoint/ intervention sites located on the Rob Roy Way, West Highland Way and NCR7, which have been proposed to assist with directing views away from the line.

4.5
Option 3
This option explores creating an alternate route for users of the West Highland Way and NCR7, which runs from Gartness Road along the base of the Altequhur Burn valley to the A811 before re-joining the route. This will be supplemented by extensive native woodland planting to the Altequhur Burn valley base to assist with screening views of the line and enhance the existing riparian habitat along the burn.

This option also proposes woodland planting to the section of the West Highland Way to the north of the A811 and south of the Garadhban Forest. This is proposed, to screen views of the line to the east of this open section of the route.

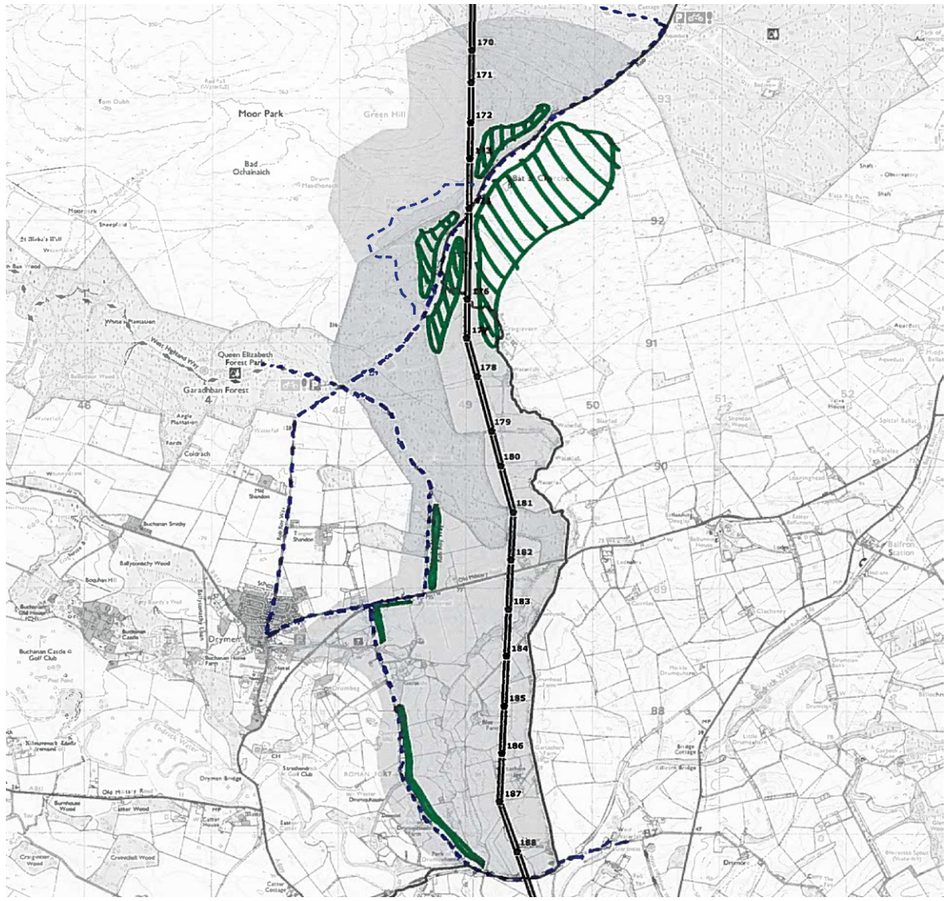
Extensive native woodland planting is also proposed along the exposed and open section of the Rob Roy Way and NCR7 on the Old Military Road, which runs perpendicular to the line. This will provide enhanced screening to this section of the route and supplement existing woodland and forestry planting within the wider area.

An alternative route for the Rob Roy Way has also been proposed around Muir Park Reservoir. This would provide further screening of the line from the route due to proposed native tree planting and change in aspect of view.

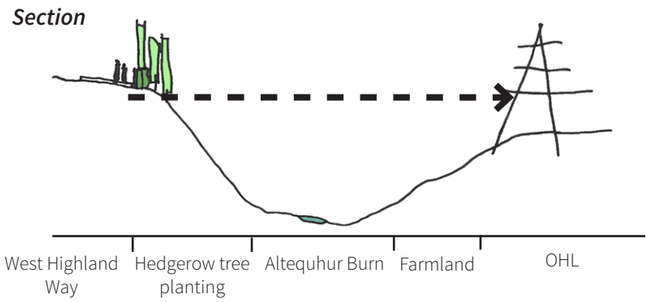
This proposal also identifies a potential viewpoint/ intervention site located on the Rob Roy Way and NCR7, which has been proposed to assist with directing views away from the line.

Option 1

Plan



Section

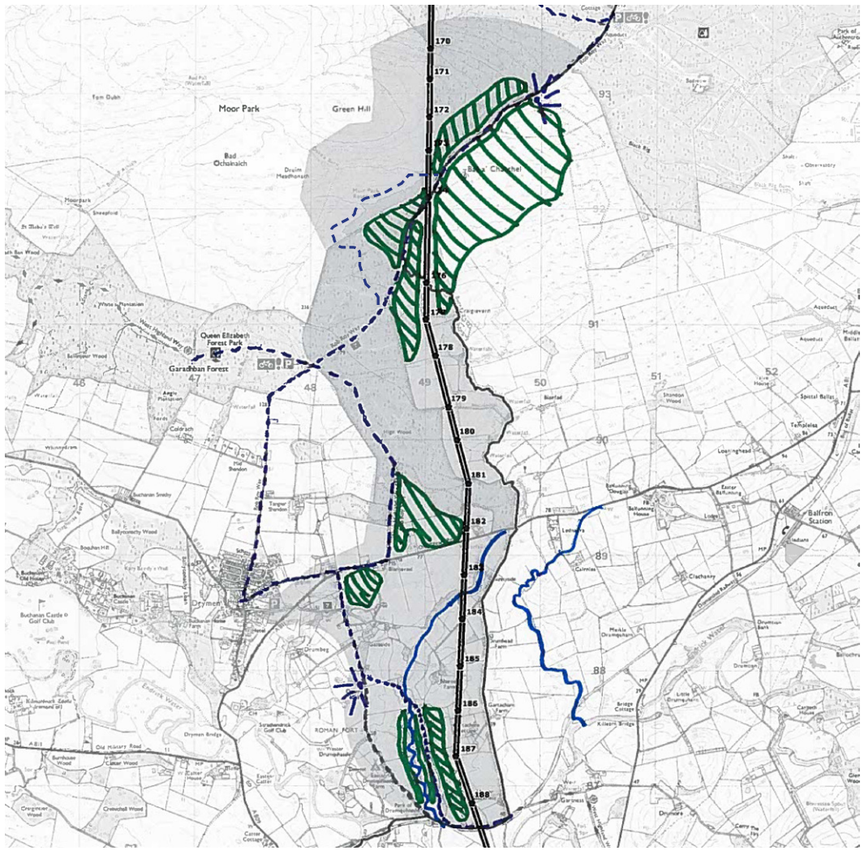


Section showing retention of the track along the existing route with new hedgerow planting to road side.

It is anticipated this option will afford enhanced screening, compared with the existing open aspect. However, there will be intermittent views of the transmission line given elevation of route and OH.

Option 2

Plan



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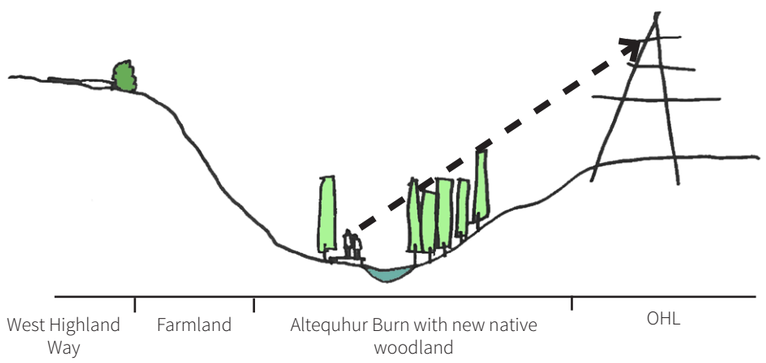
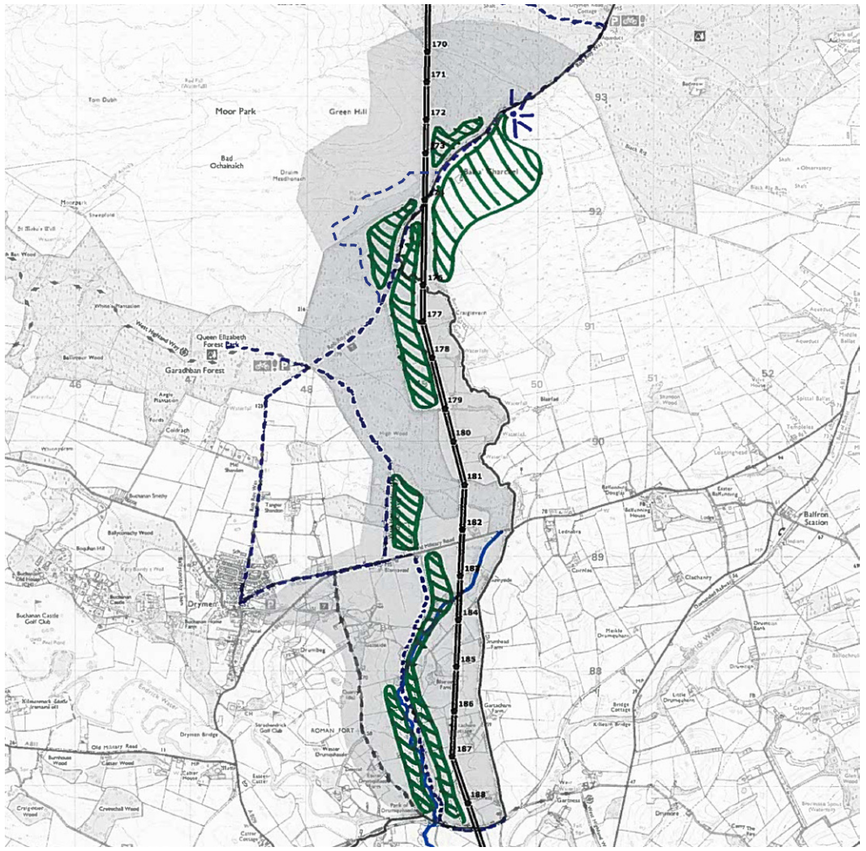


Section showing new alternate route of the West Highland Way along Altequhur Burn with associated new native woodland planting.

Views of the line from the new route would be largely screened from view by new woodland planting with the lowered elevation resulting in only the tips of the pylons would be visible.

Option 3

Plan



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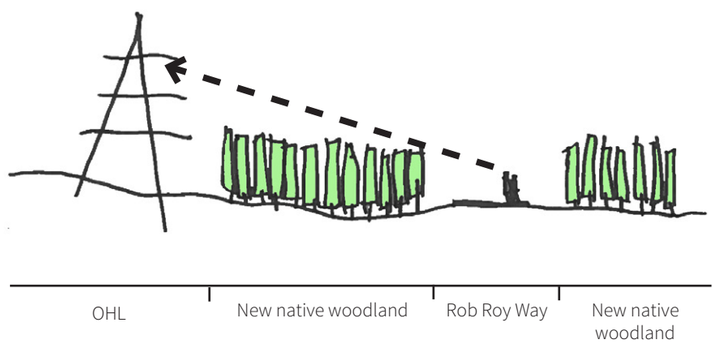


Section showing proposed new woodland planting along the Old Military Road section of the Rob Roy Way.

Views of the line would be partially screened from view with only the upper half of the pylons visible due to the relatively flat topography within this section of the route.

New woodland planting would assist in directing views along the route further assisting with lessening views of the line.

Options Analysis

4.6 ***Option 1***

Strengths

- Utilises existing West Highland Way route negating requirement for new footpath;
- Partial screening of the line from West Highland Way and Rob Roy Way;
- Limited landtake required; and
- Creation of native woodland and associated habitats.

Weaknesses

- Limited opportunity to screen views of lines over far reaching views from West Highland Way with lines still clearly visible.

Opportunities

- Increased native woodland creation and associated biodiversity benefits; and
- Restructuring of eroded hedgerows and planting of new hedgerow trees preserving this threatened landscape element.

4.7 **Option 2**

Strengths

- Enhanced screening afforded to the West Highland Way along new route;
- Introduction of visually diverting viewpoints/ interventions;
- Improved experiential connection with Altequhur Burn;
- Creation of new non-trafficked route; and
- Creation of native woodland and riparian woodland, and associated habitats.

Weaknesses

- Construction of new route required with associated costs; and
- Increased landtake required to facilitate new path.

Opportunities

- Visual diversion and enhanced user experience through viewpoints/ intervention features; and
- Increased native woodland creation and associated biodiversity benefits.

4.8 **Option 3**

Strengths

- Enhanced screening afforded to the West Highland Way, Rob Roy Way and NCR7 along new route;
- Introduction of visually diverting viewpoint/ intervention;
- Reduced section of the West Highland Way route along busy A811;
- Improved experiential connection with Altequhur Burn;
- Creation of new non-trafficked route;
- Creation of native woodland and riparian woodland, and associated habitats.

Weaknesses

- Construction of new route required with associated costs; and
- Increased landtake required to facilitate new path.

Opportunities

- Visual diversion and enhanced user experience through viewpoint/ intervention feature; and
- Increased native woodland creation and associated biodiversity benefits.

4.9

Following on from the options analysis the option taken forward for development to outline design stage is option 3.

Option 3 is to be taken forward as it is affords the most beneficial levels of screening from the West Highland Way, Rob Roy Way and NCR7, which are deemed to be of **High** visual sensitivity to the line.

5 Outline Proposals

General

5.1
The proposals have been developed taking into consideration landscape and visual factors, whilst building upon the fundamental elements, guiding principles and concept proposals to fulfil the key objective of reducing the existing visual impact of the transmission line on receptors using the routes of the Rob Roy Way, West Highland Way and NCR7 in the East Drymen area.

The proposals focus on distinct sections of these promoted tourist/recreational routes, and seek to improve the user experience from these routes, with a primary focus on reducing the perceptibility and visibility of the transmission line from key sections.

The southern extent of the proposals focuses on the route of the West Highland Way and offers an alternative route for receptors following the route of the Altequhur Burn valley south of the A811, passing through existing native woodland along the corridor of the burn. The alternative route provides an improved experience for receptors, with reduced visibility of the transmission line. To further assist in diverting attention from the transmission line the proposal also develops upon the concept of providing associated viewpoint/ interventions, presented during the optioneering stage set out in the accompanying workbook.

The introduction of native mixed woodland and the enhancement of the existing woodland structure north and south of the A811 along the route of the West Highland Way will further reduce visibility of the transmission line either side of this busy A-road.

The northern extent of the proposals focuses on the route of the Rob Roy Way and National Cycle Route 7 (NCR7), to the north-east of the existing Garadhban Forest. The route of these popular recreational routes follows the former military road across the open moorland of Muir Park through an area of recently felled forestry. The introduction of extensive mixed native woodland will seek to screen and filter views of the transmission line from the minor road, whilst a minor alternative footpath route west of Muir Park reservoir will offer an improved experience for receptors. A potential viewpoint/ intervention to the east of the transmission line on the route of the Rob Roy Way will focus receptors towards long distance views north, north-eastwards across the Trossachs.

The outline proposals includes the following mitigation measures for reducing the existing visual impact of the transmission line on users of the West Highland Way, Rob Roy Way and NCR7:

- Provision of an alternative route for users of the West Highland Way along the Altequhur Burn valley to take receptors/ people away from the transmission line and along wooded valley of the burn;
- Localised native woodland planting and enhancement of existing woodland along the valley floor to improve the experience and setting of the route, create native woodland habitat and supplement the riparian habitat along the burn, and provide enhanced screening transmission line;
- Localised native woodland planting to the West Highland Way to tie into the Garadhban Forest and screening views over open sections of the route;
- Wide scale native woodland planting to the open section of the Rob Roy Way and NCR7 where they cross Muir Park, sensitively designed to respond to existing topography and landscape pattern, and tie into existing woodland and forestry within the area, creating further woodland habitat and affording screening and filtering of the transmission line; and
- Creation of visually diverting focal points in the form of viewpoints/ interventions along the West Highland Way, Rob Roy Way and NCR7 to divert receptors/ people's attention away from the transmission line.

Key Benefits

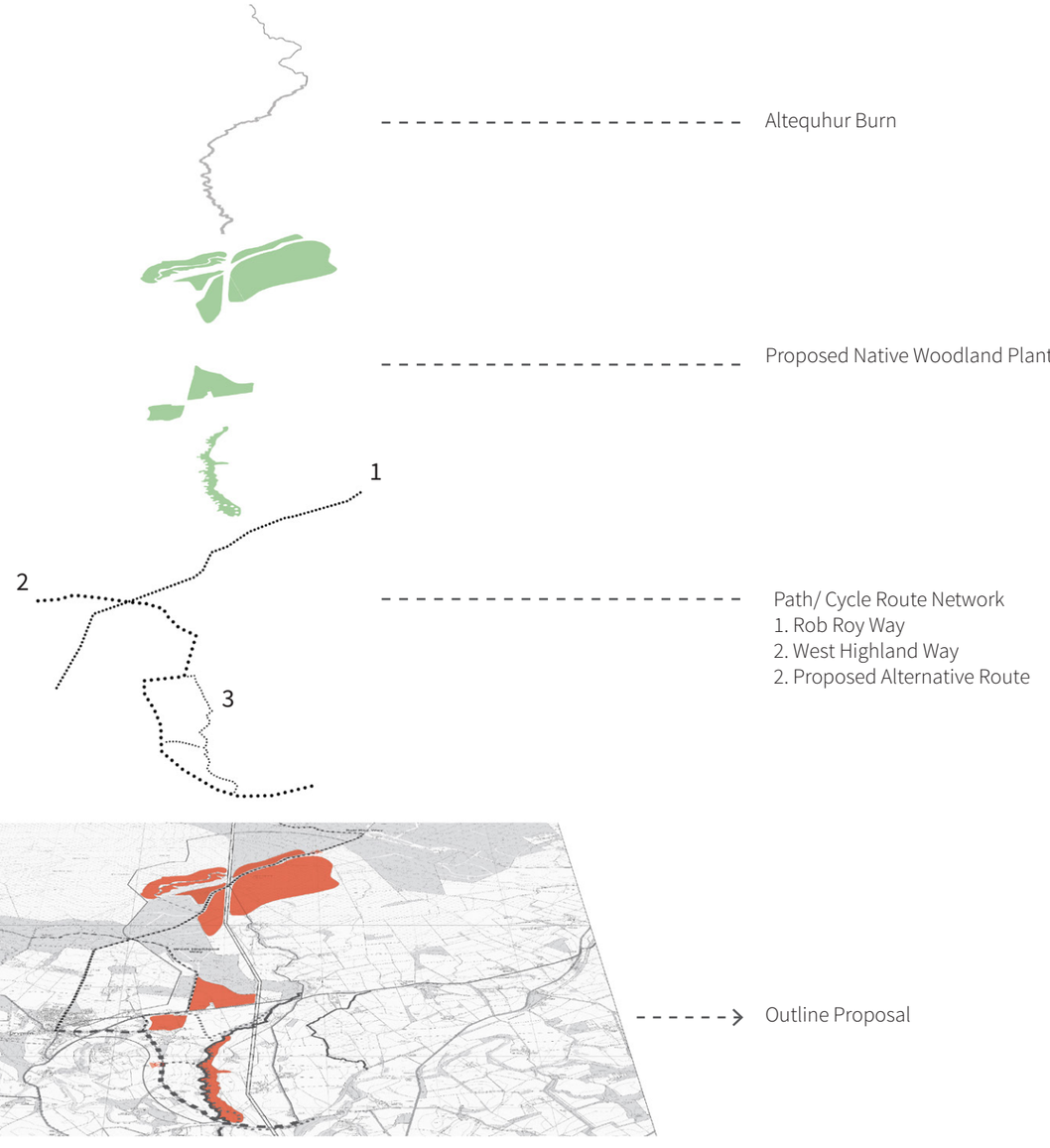
5.2
- Enhanced screening of transmission line afforded from the West Highland Way, Rob Roy Way and NCR7;
- Introduction of visually diverting viewpoint/ interventions to focus views away from the transmission line;
- Improved user experience along the existing and alternative routes of the West Highland Way and Rob Roy Way, including diversion of section of the West Highland Way route which runs alongside the busy A811;
- Improved experiential connection with Altequhur Burn for users of the West Highland Way south of the A811; and
- Creation and enhancement of native woodland and riparian woodland, and associated habitats.

Key Challenges

5.3
- Construction of new route required with associated costs;
- Land take required to facilitate new path and woodland planting;
- Consideration of flood risk and access requirements along the Altequhur Burn valley;
- Limited opportunity to screen views of transmission lines in longer distance views from West Highland Way with lines still clearly visible.

5.4
The introduction of extensive native woodland will be implemented in line the **Biodiversity Action Plan for the National Park (Wild Park 2020)**. Appropriate woodland mixes of native species of trees and lower growing vegetation will be developed sympathetically, with reference to the geographical location, elevation, topography, soil type, hydrology and biodiversity of the specific area.

F5.1 Proposal Component Diagram



F5.2 Outline Proposals Plan

SP ENERGY NETWORKS

LUC

Key

- Proposed Native Mixed Woodland Planting
- Proposed New Route
- Proposed Viewpoint/ Intervention
- Existing Woodland
- OHL
- West Highland Way/ NCR7
- Rob Roy Way/ NCR7
- West Highland Way

F 5.3 Consult Following Figure as Numbered

F5.3 Indicative Sketch Situation 3
Upland Plateau Native Planting

Analysis
Highlighting ridge lines, depressions, hollows and features within the existing landform in white dashed line.

Proposed
Native coniferous and broadleaf woodland planting to the plateau surrounding the upper section of the Rob Roy Way and NCR7 which responds to the natural topography and provides intermittent screening of the line from the existing section of

Visibility
Sketch showing native woodland creation along Rob Roy Way and impact on visibility of the lines. Whilst the line is still visible, planting in the foreground and middle ground detracts the eye and lessens the visual effects of the line.

Woodland Composition by Typology
A. Native pinewood
B. Birch/ ash/ oakwoods
C. Combined Mosaic

Implementation

6.1

The following is a brief summary of the key tasks that would be required to implement a project of the nature described.

- **Screening -** EIA 'unlikely' to be required;
- **Scoping and consultation** – identify key user groups, legal and good practice requirements, requirements for EIA / discussion with local authority, setting of management objectives;
- **Survey** – detailed site survey (e.g. legal, physical, biodiversity, historic environment, recreation, landscape, timber production, people, management of grazing animals; species selection);
- **Analysis** – identify site constraints and opportunities, landscape character and landform analysis, potential NVC woodland types, historic environment;
- **Synthesis** – development of a design concept, followed by sketch designs then detailed designs for new areas of woodland and path diversion;
- **Implementation** – felling (if required), ground preparation, establishment of new planting (through natural regeneration, seeding or planting), path construction and improvements; and
- **Monitoring and review**– against management objectives, making changes if necessary.

It is anticipated that the works described above could be undertaken in a 5-10 year period.

Management and Maintenance

6.2

Detailed site survey will help to establish the maintenance requirements of the site. The following elements are likely to be a key consideration:

- Fencing of new areas of tree planting to protect from grazing;
- Management of regeneration of non-natives; and
- Maintenance of path surfacing and signage/ way markers.

Benefits to Landowners

6.3

Converting non-native conifers to native mixed woodland

The large scale conversion of non-native conifer woodland back to native woodland has been a Forestry Commission policy aim for many years. Some of the benefits (and drawbacks) are outlined below; these are summarised from the Forestry Commission Research Note 'Converting planted non-native conifer to native woodlands: a review of the benefits, drawbacks and experience in Britain' (August 2016):

- Broadleaved woodland allows more light to pen etrate the forest floor, resulting in warmer soils and faster rates of nutrient cycling;
- More light to the forest floor can also improve the growth of ground vegetation (although these species can require higher levels of nutrients and soil water);
- More abundant shrub and herb layers are likely to increase nesting opportunities for woodland birds and favour insectivorous bats (although conifer plantations with a closed canopy are better for red squirrels);
- Species abundance and diversity can increase substantially, depending on site conditions;
- Public perception favours variations in tree height and space, rather than 'unnatural' symmetrical edges and low light penetration;
- Native woodlands provide a better habitat for natural enemies of insect pests;
- Diversification of timber can respond to new markets and extend economic opportunities;
- Opportunity to establish species which are better suited to site conditions (now and in the future) and more resilient to fire, pests and diseases.

Converting grassland or moorland to native woodland

- Increase in nesting opportunities for birds and bats;
- Can provide habitat for rare plant and animal species;
- Can create links between scattered areas of woodland habitat, which may be important for the movement of some plant and animal species;
- Can be used to promote community involve ment, from consultation to active management;
- Increase in soil water retention / reduced flooding and erosion;
- Can provide shelter for arable land or grazing animals.

New footpath

- Enhanced routes with reducedvisual impacts from lines;
- Increased opportunities for recreation, likely to attract more visitors; and
- Easier access across estate.

Costs of Creating and Managing Woodland

6.4
Forestry Commission Scotland provide extensive guidance and information about the creation, implementation and management of woodland, including the relative costs. The costs of creating and managing woodland varies, depending on the size of the proposed scheme, trees planted, and the purpose of woodland.

Factors to consider:

- Future access;
- Deer and rabbits;
- Environmental impact;
- Creation costs;
- Maintenance costs;
- Potential requirement for an Environmental Impact Assessment (EIA) for larger schemes;
- The character and views of the site will look like in the short-term and long-term; and
- Tree planting is usually carried out between October and March, avoiding frost and snow.

Things to consider when considering the cost of new woodland:

- Design costs: e.g. consultancy fees;
- Machinery costs;
- Site/ground preparation: ripping or mounding, establishment of low vigour grassy turf;
- Planting costs;
- Cost of material (seedlings etc.): trees from nurseries;
- Tree protection: spiral shelter, tube and stake and tie;
- Fencing: post and wire, post and rail, rabbit proof, deer proof;
- Labour; and
- Maintenance and upkeep: e.g. weed-free areas around the trees, replacements for failed trees, deer and rabbit control.

Planting

ITEM	QUANTITY	UNIT	RATE	COST
Tree planting (including shelter)	2329250	m^2	£3.50	£8,152,375
			Total	***£8,152,357***

Materials

ITEM	QUANTITY	UNIT	RATE	COST
Deer and stock fencing	20152	lin/m	£20.75	£418,154
Footpath	4567	lin/m	£30.00	£137,010
Footbridge	4	lin/m	£1500.00	£6,000
Stiles	10	each	£125.00	£1,250
Waymarker post	10	each	£30.00	£300
Fingerpost	10	each	£60.00	£600
Interpretation board	2	each	£1200.00	£2400
			Total	***£565,714***

Total Outline Project Cost **£8,718,071**