Appendix 6.1

Note on Mitigation Planting Mixes

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1 Introduction

1.1.1 The various species and sizes of trees and shrubs incorporated into the proposed mitigation design will be arranged in such a way that they create natural woodland characteristics typical of a locality, or form a designed landscape feature. The planting will be based predominantly on native species that have an established presence within the local area. In some instances however; non-native species would be used in order to reinforce local landscape character (such as policy woodlands) where agreed with Scottish Natural Heritage.

1.1.2 Typically, young plant stock will be used as they are generally easier and more successful to establish; however, larger plants will be used for initial impact in specific locations, for example where screening is required. A percentage of feathered trees would be included within the Native Woodland/ Woodland Edge/ Wet Woodland areas of approximately 15% of the tree species included within each habitat type. The planted Native Woodland/ Woodland Edge/ Shrub/ Wet Woodland areas will also be seeded to provide an understorey of wildflowers and grasses based upon a Scotia Seeds Woodland Mix.

1.1.3 This Appendix should be read in conjunction with **Chapters 12**, **13 and 14** in **Volume 1**, and the **Chapter 6 Environmental Mitigation Drawings 6.1 to 6.11** found in **Volume 3** of this report.

1.2 Native Woodland Planting ~ 11.45 Ha

1.2.1 Proposed 'Native Woodland' planting, which requires both broad-leaved and coniferous woodland, 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 native evergreen understorey.

1.2.2 The balance between deciduous and evergreen species will be varied to achieve year-round cover and reflect existing woodland local to the various sections of the road. Scots pine reflecting surrounding woodlands, providing a strong evergreen framework and habitat for red squirrel.

1.2.3 The proposed woodland planting is intended to resemble naturally occurring planting, featuring clumps and glades. Areas towards the edges of woodland areas will be planted with native trees and shrubs with a high percentage of small trees, shrubs and climbers, but no large trees.

1.2.4 A typical species mix to be used for native woodland is:

- Scots pine - *Pinus sylvestris*
- Downy birch - *Betula pubescens*
- Sessile oak - *Quercus petraea*
- Aspen - *Populus tremula*
- Rowan - *Sorbus aucuparia*
- Alder - *Alnus glutinosa*
- Silver birch - *Betula pendula*
- Holly - *Ilex aquifolium*
- Goat willow - *Salix caprea*

1.2.5 To be planted at 1 plant per $2m^2$ (approx. 1.5 m centres).

1.2.6 Areas for Winter Resilience to be planted at 1 plant per m^2.

1.3 Native Woodland Edge ~ 4.77 Ha

1.3.1 Proposed 'Native Woodland Edge' planting, including both broad-leaved and coniferous woodland, will restore/ re-create a natural canopy profile comprising tree and shrub plants which range in size from feathered trees to shrub species of whips and transplants. The percentage mix will be determined during detailed design in consultation with SNH and CNPA; however, the minority of plants will be tree species, with predominantly shrub species towards the outer perimeter of the planted area.

1.3.2 The proposed woodland edge planting is intended to resemble naturally occurring woodland/ scrub habitat, featuring clumps and glades. Areas towards the edges of woodland areas will be planted with native trees and shrubs, but with a high percentage of small shrubs, which tolerate both dry and wet ground conditions.

1.3.3 A typical species mix to be used for native woodland edge is:

- Scots pine - *Pinus sylvestris*
- Downy birch - *Betula pubescens*
- Rowan - *Sorbus aucuparia*
- Alder - *Alnus glutinosa*
- Silver birch - *Betula pendula*
- Goat willow - *Salix caprea*
- Hazel - *Corylus avellana*

1.3.4 To be planted at 1 plant per $2m^2$ (approx. 1.5 m centres).

1.4 Scrub/ Shrub Planting ~ 4.57 Ha

1.4.1 These areas are intended to mature as a mix of native shrubs such as goat willow, hawthorn, hazel and juniper. The scrub planting is intended to resemble naturally occurring planting, with a dense, low to medium height canopy featuring clumps and glades, with species mixes reflecting locally occurring native vegetation:

- Goat willow - *Salix caprea*
- Hazel - *Corylus avellana*
- Hawthorn - *Crataegus monogyna*
- Cross leaved heath - *Erica tetralix*
- Juniper - *Juniperus communis*

1.4.2 To be planted at 1 plant per $2m^2$ (approx. 1.5 m centres).

1.5 Wet Woodland Planting ~ 5.58 Ha

1.5.1 This should replicate the existing natural regeneration adjoining the River Truim and some of the smaller watercourses, where grazing is restricted. Riparian woodland will be planted adjacent to watercourses, some SuDS ponds where appropriate, and in other areas across flood plains. It will comprise a mix of sizes of plants such as feathered trees, whips and transplants using wetland species such as willow, birch and alder:

- Alder - *Alnus glutinosa*
- Goat willow - *Salix caprea*
- Silver birch - *Betula pendula*
- Rowan - *Sorbus aucuparia*
- Grey willow - *Salix cinerea*

1.5.2 To be planted at 1 plant per $2m^2$ (approx. 1.5 m centres).

1.6 Specimen Tree Planting ~ 830 - 835 No

1.6.1 Specimen trees will be planted as Light Standard size with tree stakes and tree guard protection in locations that would benefit from accents and advance growth foliage, such as around lay-bys, car parks, and key gateway areas. These trees will be planted in groups of 3-5 specimens; the spacing will increase further away from other planted areas. Appropriate native upland species would include:

- Silver birch – *Betula pendula*
- Sessile oak – *Quercus petrea*
- Scots pine – *Pinus sylvestris*
- Mountain ash – *Sorbus aucuparia*

1.7 Wet Heath ~ 26.09 Ha

1.7.1 Wet heath is sub-shrub community extensive in the east-central Highlands, occurring in poorly drained moist soils between 200m and 600m altitude, and alternates in close proximity with dry heath habitat, depending on local soil type and saturation levels. It is dominated by two key plant species:

- Cross leaved heather - *Erica tetralix*
- Heather - *Calluna vulgaris*

1.7.2 Wet heath will be established in sections of the Proposed Scheme, where it will be held in check by local climatic conditions (in the absence of burning and grazing). Wet heath species will be based upon a Scotia Seeds Highland Grassland Mix, as in **Tables 1 and 2**:

Table 1: Scotia Seeds Highland Grassland Mix

Species	Common Name	% by weight	Species	Common Name	% by weight
Wildflowers (20%)					
Achillea millefolium	Yarrow	1	*Prunella vulgaris*	Selfheal	2
Alchemilla alpina	Alpine Lady's Mantle	0.1	*Ranunculus acris*	Meadow Buttercup	2
Calluna vulgaris	Heather	1	*Rumex acetosella*	Sheep's Sorrel	3
Erica tetralix	Cross leaved heather	0.5	*Stellaria graminea*	Lesser Stitchwort	1
Galium saxatile	Heath Bedstraw	1	*Succisa pratensis*	Devils-bit Scabious	1
Galium verum	Lady's Bedstraw	2	*Trifolium repens*	White Clover	1.9
Lotus corniculatus	Birdsfoot Trefoil	0.5	*Veronica chamaedrys*	Germander Speedwell	0.5
Plantago lanceolata	Ribwort Plantain	1.5	*Veronica officinalis*	Common Speedwell	0.5
Potentilla erecta	Tormentil	0.1	*Viola riviniana*	Common Dog Violet	0.4
Grasses & Rushes (80%)					
Agrostis capillaris	Common Bent	5	*Festuca ovina*	Sheeps Fescue	2
Agrostis vinealis	Brown Bent	10.5	*Festuca rubra*	Red Fescue	20.1
Anthoxanthum odoratum	Sweet Vernal Grass	5	*Luzula multiflora*	Heath Wood Rush	0.1
Cynosurus cristatus	Crested Dogs Tail	12	*Molinia caerulea*	Purple Moor Grass	0.1
Deschampsia flexuosa	Wavy Hair Grass	25	*Nardus stricta*	Mat Grass	0.2

Table 2: Sowing Rates

Sowing Rates	
3g / m^2	
OR	12kg / acre
OR	30 kg / hectare

1.8 Dry Heath ~ 24.15 Ha

1.8.1 Similar to wet heath, upland dry heath is a sub-shrub community extensive in the east-central Highlands, which normally occurs in free-draining moist soils between 200m and 600m altitude. It will be established in sections of the Proposed Scheme, where it will be held in check by local climatic conditions (in the absence of burning and grazing).

1.8.2 Following the initial establishment phase, no specific long-term maintenance is proposed, as natural succession to scrub and woodland is desirable. Species will be based upon a Scotia Seeds Highland Grassland Mix, as in **Tables 3 and 4**:

Table 3: Scotia Seeds Highland Grassland Mix

Species	Common Name	% by weight	Species	Common Name	% by weight
Wildflowers (20%)					
Achillea millefolium	Yarrow	1	*Prunella vulgaris*	Selfheal	2
Alchemilla alpina	Alpine Lady's Mantle	0.1	*Ranunculus acris*	Meadow Buttercup	2
Calluna vulgaris	Heather	1	*Rumex acetosella*	Sheep's Sorrel	3
Erica tetralix	Cross leaved heath	0.5	*Stellaria graminea*	Lesser Stitchwort	1
Galium saxatile	Heath Bedstraw	1	*Succisa pratensis*	Devils-bit Scabious	1
Galium verum	Lady's Bedstraw	2	*Trifolium repens*	White Clover	1.9
Lotus corniculatus	Birdsfoot Trefoil	0.5	*Veronica chamaedrys*	Germander Speedwell	0.5
Plantago lanceolata	Ribwort Plantain	1.5	*Veronica officinalis*	Common Speedwell	0.5
Potentilla erecta	Tormentil	0.1	*Viola riviniana*	Common Dog Violet	0.4
Grasses & Rushes (80%)					
Agrostis capillaris	Common Bent	5	*Festuca ovina*	Sheeps Fescue	2
Agrostis vinealis	Brown Bent	10.5	*Festuca rubra*	Red Fescue	20.1
Anthoxanthum odoratum	Sweet Vernal Grass	5	*Luzula multiflora*	Heath Wood Rush	0.1
Cynosurus cristatus	Crested Dogs Tail	12	*Molinia caerulea*	Purple Moor Grass	0.1
Deschampsia flexuosa	Wavy Hair Grass	25	*Nardus stricta*	Mat Grass	0.2

Table 4: Sowing Rates

Sowing Rates	
3g / m²	
OR	12kg / acre
OR	30 kg / hectare

1.8.3 It is noted that Cairngorms National Park Authority (CNPA) have highlighted that bearberry (*Arctostaphylos uva-ursi)* should be encouraged in areas of dry heath restoration within the Proposed Scheme extents. This is to benefit *Lepidoptera*, particularly small dark yellow underwing moth (*Coranarta cordigera*), which is a Cairngorms Nature Action Plan key species. Reference should also be made to the **Outline Habitat Management Plan (OHMP)** provided as **Appendix 12.11** of the ES.

1.9 Acid Grassland ~ 12.52 Ha

1.9.1 Acid grassland seeding will merge with adjacent areas of similar habitat. The final percentages of seed mix will be determined during detailed design following consultation with SNH/CNP. This acid grassland would include:

- Purple Moor Grass – *Molinia caerulea*
- Nardus – *Nardus stricta*
- Yarrow - *Achillea millefolium*
- Heath Bedstraw - *Galium saxatile*
- Birdsfoot Trefoil - *Lotus corniculatus*
- Tormentil - *Potentilla erecta*
- Meadow Buttercup - *Ranunculus acris*
- Lesser Stitchwort - *Stellaria graminea*
- White Clover - *Trifolium repens*
- Common Speedwell - *Veronica officinalis*
- Common Bent - *Agrostis capillaris*
- Sweet Vernal Grass - *Anthoxanthum odoratum*
- Wavy Hair Grass - *Deschampsia flexuosa*
- Red Fescue - *Festuca rubra*
- Heather - *Calluna vulgaris*
- Blaeberry (to be planted as seed) - *Vaccinium myrtillus*
- Alpine Lady's Mantle - *Alchemilla alpine*
- Lady's Bedstraw - *Galium verum*
- Ribwort Plantain - *Plantago lanceolate*
- Selfheal - *Prunella vulgaris*
- Sheep's Sorrel - *Rumex acetosella*
- Devils-bit Scabious - *Succisa pratensis*
- Germander Speedwell - *Veronica chamaedrys*
- Common Dog Violet - *Viola riviniana*
- Brown Bent - *Agrostis vinealis*
- Crested Dogs Tail - *Cynosurus cristatus*
- Sheeps Fescue - *Festuca ovina*
- Heath Wood Rush - *Luzula multiflora*

1.10 Wet Grassland ~ 24.53 Ha

1.10.1 Wet grassland seeding will be based upon a Scotia Seeds Wet Meadow Mix, to be applied to areas of disturbed ground that may revert to a blanket bog habitat or merge with adjacent areas of existing blanket bog, including Sustainable Drainage Systems (SuDS) basins where shown on the **Environmental Mitigation Drawings 6.1 to 6.11 in Volume 3** of this report. Species as listed in **Tables 5 and 6:**

Table 5: Scotia Seeds Wet Meadow Mix

Species	Common Name	% by weight	Species	Common Name	% by weight
Wildflowers (20%)					
Achillea ptarmica	Sneezewort	0.1	*Lotus uliginosus*	Greater trefoil	0.1
Centaurea nigra	Common Knapweed	1.4	*Plantago lanceolata*	Ribwort Plantain	0.5
Cirsium palustre	Marsh Thistle	0.1	*Prunella vulgaris*	Selfheal	1.5
Filipendula ulmaria	Meadowsweet	2.9	*Ranunculus acris*	Meadow Buttercup	1.5
Geranium pratense	Meadow Cranesbill	1.5	*Rhinanthus minor*	Yellow Rattle	1
Geum rivale	Water Avens	2	*Rumex acetosa*	Common Sorrel	1.4
Hypericum tetrapterum	Square-stemmed St Johns Wort	0.3	*Scorzoneroides autumnalis*	Autumn Hawkbit	1
Hypochaeris radicata	Cat's Ear	0.2	*Silene flos-cuculi*	Ragged Robin	1
Iris pseudacorus	Yellow Flag Iris	2	*Succisa pratensis*	Devils-bit Scabious	0.5
Leucanthemum vulgare	Ox-eye Daisy	1			
Grasses & Rushes (80%)					
Agrostis capillaris	Common Bent (c)	10	*Juncus squarrosus*	Heath Rush	0.1
Alopecurus pratensis	Meadow Foxtail (c)	3	*Deschampsia caespitosa*	Tufted Hair Grass	5
Carex ovalis	Oval Sedge	0.2	*Festuca rubra ssp. commutata*	Chewings Fescue (c)	35
Juncus articulatus	Jointed Rush	0.1	*Poa pratensis*	Smooth-stalked Meadow Grass (c)	26.6

(c) = cultivated origin

Table 6: Sowing Rates

Sowing Rates	
3g / m^2	
OR	12kg / acre
OR	30 kg / hectare

1.11 Grass Verge Mix ~ 8.93 Ha

1.11.1 Grass verge planting will be in accordance with DMRB line of sight requirements and will be mown throughout the Proposed Scheme accordingly, using Emorsgate Seed Mix EG22 - Wear Tolerant Turfgrass Mixture (or similar approved), as shown in **Table 7**:

Table 7: Emorsgate Seed Mix

Species	Common Name	%
Agrostis castellana	Highland Bent	10
Festuca rubra	Slender-creeping Red-fescue	50
Lolium perenne	Perennial Ryegrass	20
Poa pratensis	Smooth-stalked Meadow-grass	20

1.11.2 Sowing Rate 5 g/m^2.

1.12 Understorey Seeding Mix ~ 26.37 Ha

1.12.1 The seeding strategy for areas of planting would be to pre-seed with a Scotia Seeds Woodland Mix to all Native Woodland/ Woodland Edge/ Shrub/ Wet Woodland areas, to establish an appropriate upland understorey habitat. Species will be based upon Scotia Seeds Woodland Mix, as in **Table 8:**

Table 8: Scotia Seeds Woodland Mix

Species	Common Name	% by weight	Species	Common Name	% by weight
Wildflowers (20%)					
Ajuga reptans	Bugle	0.1	*Luzula sylvatica*	Greater Woodrush	0.5
Allium ursinum	Wild Garlic	0.4	*Primula vulgaris*	Primrose	0.5
Campanula latifolia	Giant Bellflower	1	*Silene dioica*	Red Campion	2.9
Circea lutetiana	Enchanters Nightshade	0.1	*Silene flos-cuculi*	Ragged Robin	1
Digitalis purpurea	Foxglove	1.9	*Stachys sylvatica*	Hedge Woundwort	1.5
Fragaria vesca	Wild Strawberry	0.2	*Teucrium scorodinia*	Wood Sage	0.1
Geranium robertianum	Herb Robert	2	*Torilis japonica*	Upright Hedge Parsley	2
Geum urbanum	Herb Bennet	2.5	*Vicia sepium*	Bush vetch	0.5
Hyacinthoides non-scripta	Bluebell	4	*Viola riviniana*	Common Dog Violet	0.7
Hypericum pulchrum	Slender St Johns Wort	0.1			
Grasses (80%)					
Agrostis capillaris	Common Bent (c)	10	*Poa nemoralis*	Wood Meadow Grass (c)	20
Cynosurus cristatus	Crested Dog's Tail (c)	10	*Poa pratensis*	Smooth-stalked Meadow Grass (c)	20
Festuca rubra ssp commutata	Chewings Fescue (c)	20			

(c) = cultivated origin

1.12.2 Sowing Rate 3 g/m^2.