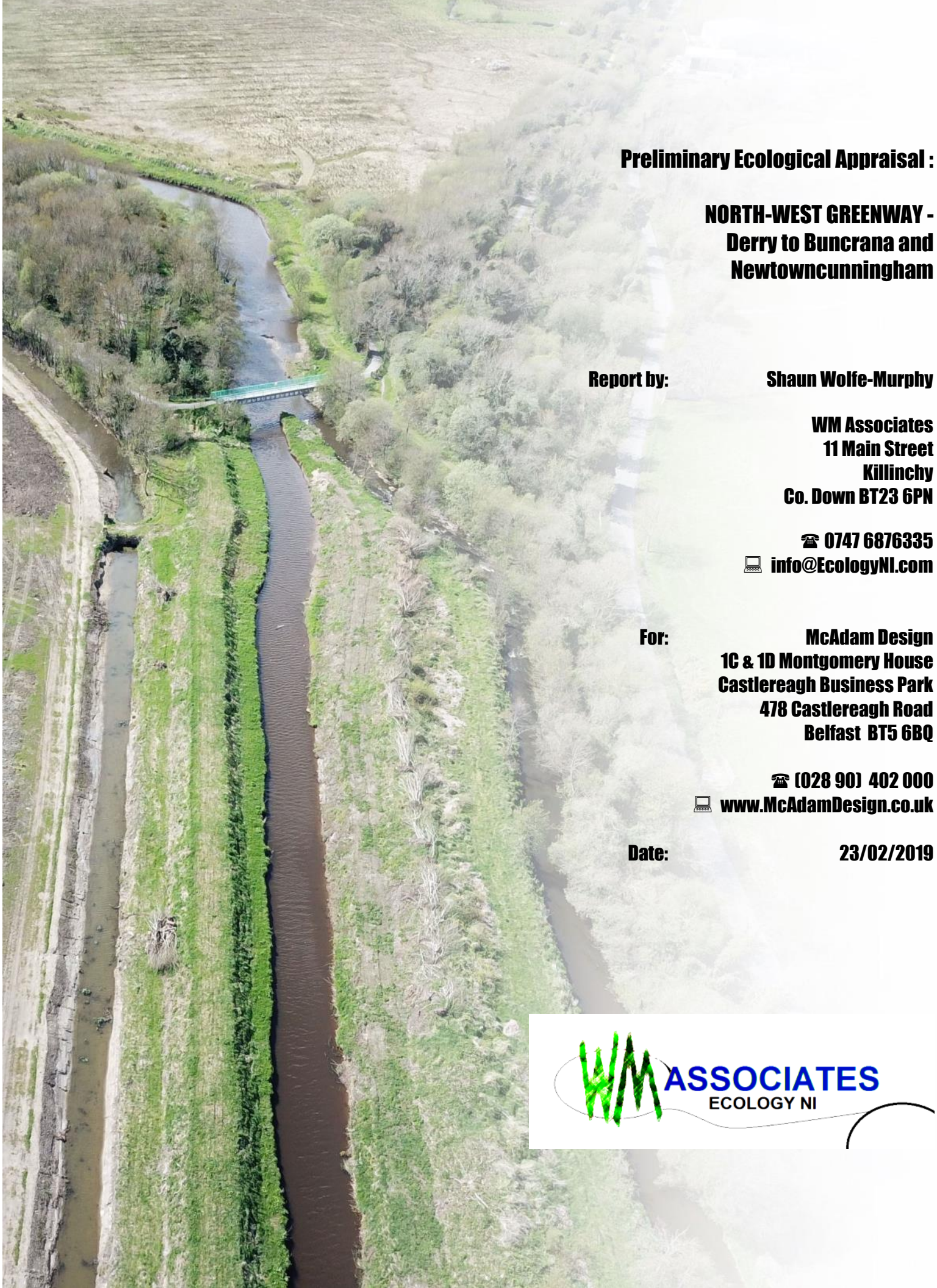

Preliminary Ecological Appraisal :

NORTH-WEST GREENWAY - Derry to Buncrana and Newtowncunningham

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Date: 23/02/2019

WM ASSOCIATES
ECOLOGY NI

Preliminary Ecological Appraisal :
NORTH-WEST GREENWAY – Pennyburn to Buncrana and Newtowncunningham

Contents:

Version History

1	12/06/2018	Interim version. Route not finalised.
2	23/02/2019	Preliminary version
3	25/03/2019	Final Version
4	26/03/2019	Issued to support Route 1 Stage 2 Preferred Route Corridor Selection Report
5	18/07/2019	Section 3 added. Issued with Final Preferred Route Corridor Selection Report

Preliminary Ecological Appraisal :
NORTH-WEST GREENWAY - Derry to Buncrana and Newtowncunningham

Background:

The aims of this report are:

1. Identification of potential ecological constraints to the development for example:

In Northern Ireland:	Priority species and habitats as defined by Planning Policy Statement 2 (including Habitats Directive Annexed habitats and species).
	Species protected under the Wildlife Order.
	Invasive species listed on Schedule 9 of the Wildlife Order as amended.

In the Republic:	Priority species and habitats Listed in Annex 1 and 2 of the 'Habitats Directive'.
	Species protected by the Wildlife Act 1976 and subsequent amendments and the Flora Protection Order 1999.
	Invasive species listed in the European Communities (Birds and Natural Habitats) Regulations 2011.

2. Identification of any additional surveys which may be required by NED in Northern Ireland or NPWS in the Republic of Ireland to enable the assessment of any future planning application relating to the selected route.

3. Provide advice if necessary on the most economically effective response to any identified constraints.

It has been identified in advance that there is a requirement that the potential impacts of the Route 1 Greenway will require to be tested against the designation features of the Lough Swilly SAC and SPA.

In the Republic of Ireland this is known as an Appropriate Assessment (or sometimes a Natura 2000 Assessment).

In Northern Ireland this is known as a Habitat Regulations Assessment (formerly known as an Article 6 Assessment or Appropriate Assessment).

A single document is being prepared that will assess potential impacts of the proposal in both jurisdictions and will be submitted separately with the respective planning applications that will cover the route.

As described in the Preferred Route Corridor Report, Section 3 of NWGN Route 1 PEA assessment is withheld from the current version of this report, and will be issued in subsequent reports once the assessment of the route options in this section have been finalised.

Survey details:

Site visits

18/01/2018[1] 22/02/2018[2] 27/04/2018 02 and 03/05/2018 10 and 11/05/2018 26/05/2018	Shaun Wolfe-Murphy BSc., Dip. EIA Mgmt., MCIEEM

[1] Reconnaissance visit with other development team members
[2] Reconnaissance visit with other team members and the NPWS Wildlife Ranger

Statement of Authority: Shaun has 30 years' experience as a professional botanist, including working for the NIEA habitat survey and designations team, the England Field unit of the (then) NCC and for the survey and designations unit of Dúchas in the government conservation agency of Republic of Ireland. During the time spent working for these agencies much emphasis was on the survey and ecological evaluation of sites.

Since establishing WM Associates in 1994 as an ecological consultancy, he has routinely compiled ecological impact assessments for a wide variety of development projects in both urban and rural habitats.

Statement of Objectivity: The data have been collected and presented impartially, as required by the CIEEM code of professional conduct. Payment or other favour is not dependent upon any particular planning outcome, and there is no other vested or personal interest in any particular outcome.

Survey method

The full route was walked or in places cycled, unless access permission was unavailable.

It was not attempted to describe all habitats crossed, or passed by the provisional routes. Where there was a potential ecological constraint, enough data was recorded to evaluate the constraint.

In Northern Ireland, habitats are assigned to type using the JNCC Phase 1 survey classification. In the Republic, habitats are assigned to type using the Heritage Council's classification.

Where appropriate, notes were made of the main plant species, and other species that are indicative of the condition and management of the habitat.

In describing the status of plant species in an area, the qualitative DAFOR scale is used, where:

D	=	Dominant	Qualifying prefixes		
A	=	Abundant			
F	=	Frequent	L	=	Local – patchy distribution
O	=	Occasional	V	=	'very'
R	=	Rare			

Lists are tabulated in order of descending abundance.

Where trees were measured during this survey, their diameter at breast height (dbh) is given in cm.

The habitat suitability for different animals or animal groups was assessed, specifically:

Badgers – The survey included a search for signs of usage by Badger, such as foraging tracks, snagged guard hairs, dung etc. In particular a search was conducted for potential sett entrances.

Otters – The survey considered the potential suitable habitats for otters and notes were made of any signs of Otter use along waterways, plus any potential holt entrances.

Bats – Potential roosting places were noted, and the general suitability of the area for supporting foraging bats was assessed. Trees close to the available development area were assigned to Bat Roost Risk group as follows:

Bat Roost Risk Group (After Bat Conservation Trust (2012) Bat Surveys : Good Practice Guidelines)

Risk Group	BCT Tree category	Description
0	3	*No potential to host roosting bats*. Trees without loose bark, fissures and rot holes, and not with dense mature Ivy cover. Generally young to semi-mature specimens.
1	2	*Unlikely to host roosting bats*. Trees without loose bark, fissures and rot holes, and not with dense mature Ivy cover, but the tree is of a size and age that climbing surveys may result in cracks or crevices being found which may have limited potential to host roosts.
2	1	*Moderate potential to host roosting bats*. Trees with e.g. loose bark, deep fissures or splits and rot holes, or with dense thick-stemmed Ivy that seem likely to present potential at least for use by single bats.
3	1*	*High potential to host roosting bats*. Trees with multiple, highly suitable features that appear capable of supporting larger roosts.
4	known	*Confirmed roost site or evidence of roost occupation.*

Birds - Suitable nesting and feeding habitats were noted on and around the site.

Common lizard – The survey included an assessment of suitable habitat for lizards.

Newts - The survey included an assessment of suitable habitat for lizards, including terrestrial habitats and potential breeding ponds.

Invertebrates - Habitats of special importance for invertebrates were noted.

Absence of notes for sections indicates that no ecological issues were identified. For some roadside sections, the survey was conducted by bicycle which was all that was required to check for ecological issues.

All survey compartments were photographed. Some sections were photographed including oblique shots and vertical shots, sometimes stitched together later.

The direction of survey was from L~Derry (-ve) to the Co. Donegal destinations (+ve). Ground level photos are also taken from –ve to +ve unless indicated. All images are archived and available as high resolution graphic files.

Site Description:

The proposed route starts in Londonderry and follows an arterial road to the outskirts of the city, where options to continue along the main road to Bridgend or to utilise sections for the former Londonderry and Lough Swilly Railway (L&LSR) closed since the mid-1930s.

Beyond Bridgend the route crosses the Inch Levels to the former Tooban railway junction, three different route options are being considered, potentially utilising river levees, the former railway line, the R238 and other minor roads.

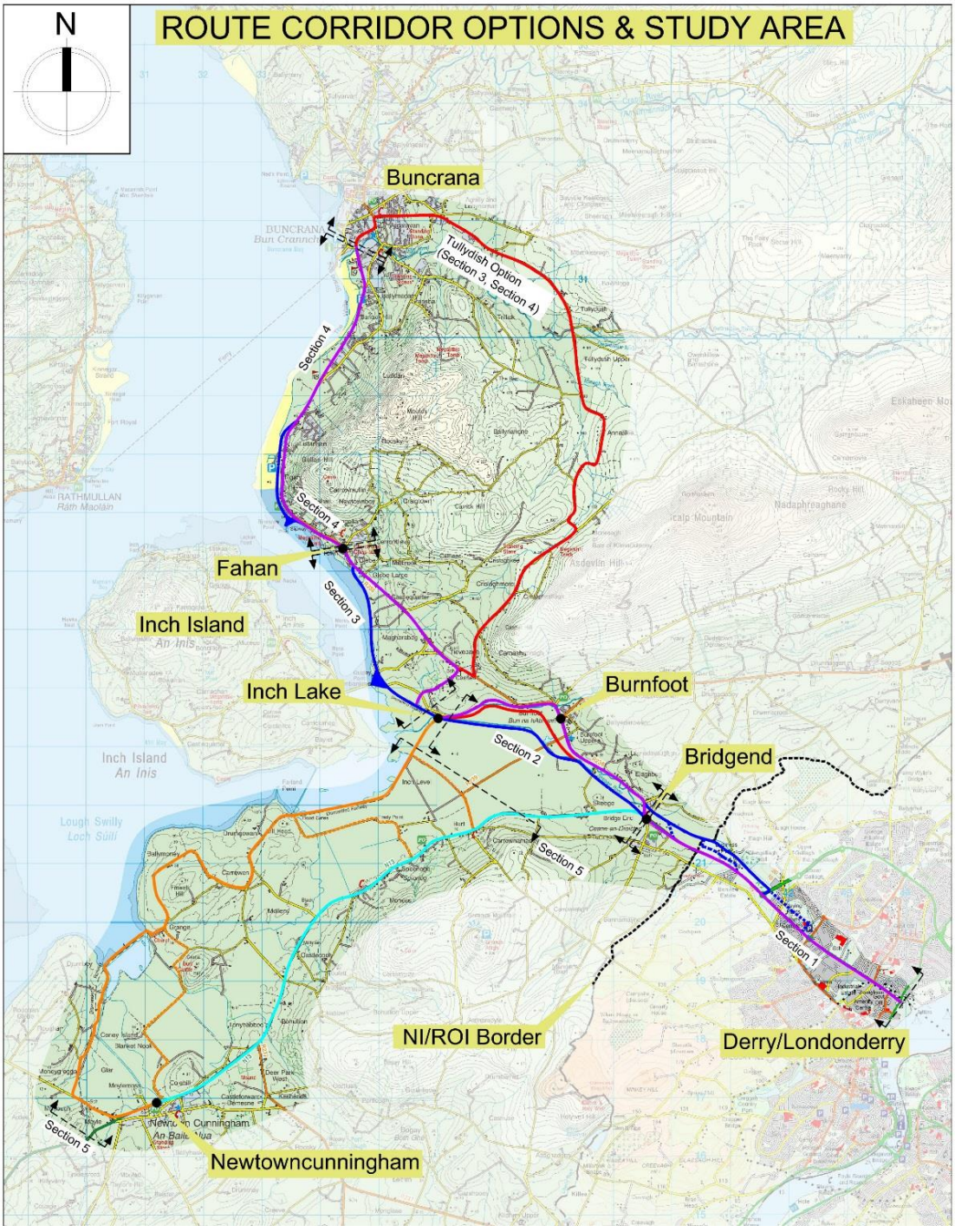
From the former railway junction, a number of route options continue north towards Buncrana, while another route option continues west along the Inch Wildfowl Reserve Trail along the Polder at the edge of the Inch levels. It then crosses an undulating rural area via single track roads to reach the path across the causeway that impounds Blanket Nook, before heading towards Newtowncunnigham, largely again in single track rural roads.

Another route option to Newtowncunningham commences at Bridgend and continues along the N13 to Newtowncunningham.

A detailed description of the Study Area and Route Corridors is provided in the Preferred Route Corridor Selection Report.

The following drawing Figure 1.1 describes the Study Area and the Route Corridors surveyed

Figure 1.1 – Study Area and Route Corridor Options



Note - The route as far as St. Columb's College has been ruled out since the Preliminary Ecological Survey was completed, it has been decided that the section from Pennyburn Roundabout to St Columb's College will be omitted from this scheme.

The following Environmental Designations and notable environmental features were identified across the Study Area.

Natura 2000 (Both jurisdictions)

1. Lough Swilly SAC only

2. Lough Swilly SAC and Lough Swilly SPA overlapping designations.

3. Lough Swilly SPA only

4. Lough Foyle SPA (Republic of Ireland)

5. Lough Foyle SPA (Northern Ireland)

6. North Inishowen Coast SAC

NHA (Republic of Ireland)

1, 2 and 3. Lough Swilly including Big Isle pNHA

6. North Inishowen Coaster pNHA

7. Umrycam Bog NHA

ASSI (Northern Ireland)

5. Lough Foyle ASSI

AOLNCI (Northern Ireland)

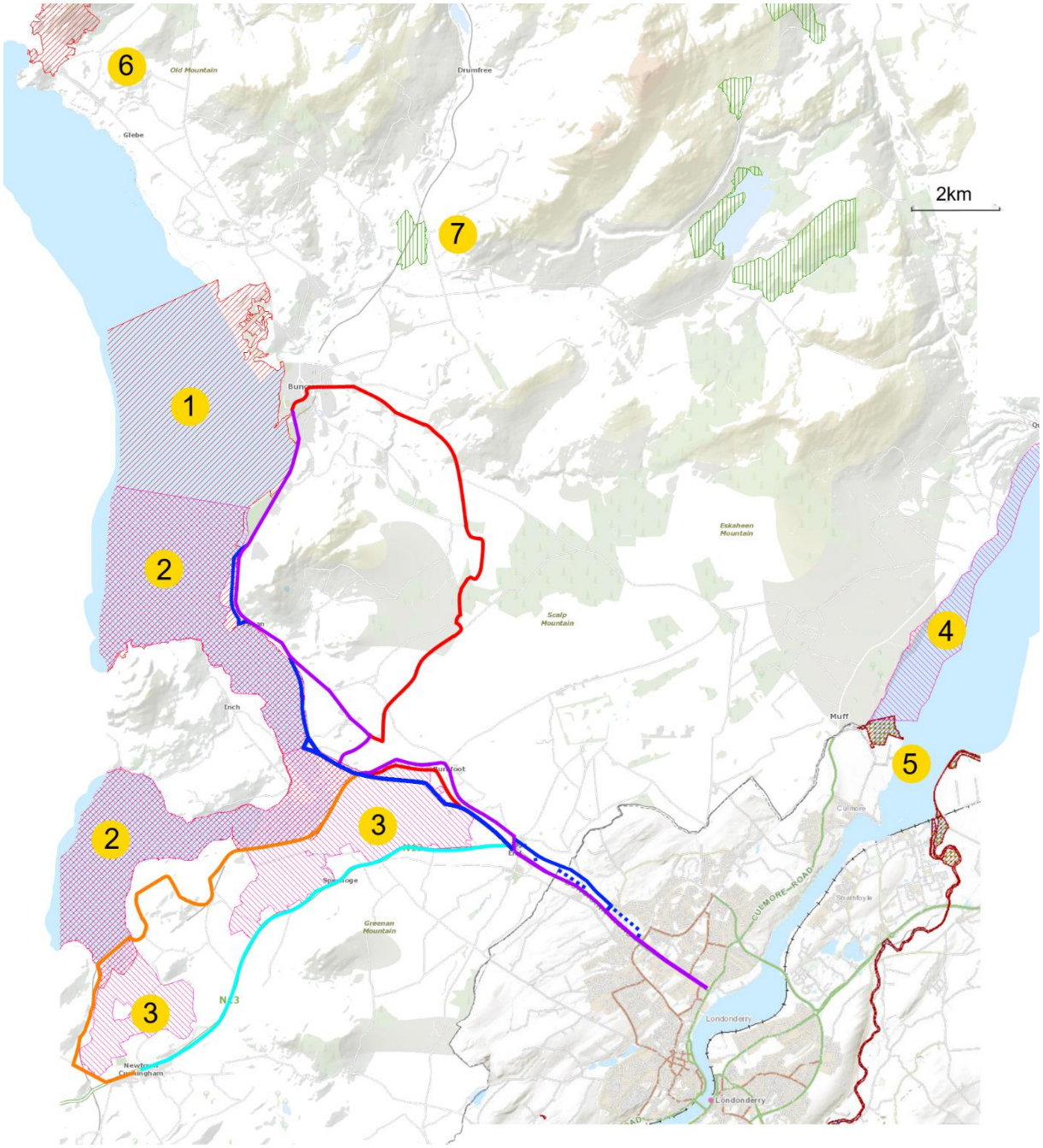
There are no AOLNCIs north of the Foyle River.

Long-established woodlands (Northern Ireland)

The Back on the Map inventory is now closed. Once the route is finalised, locations of AWI sites within 200m of the route will be sought. The route does not pass close to any woodlands in Northern Ireland.

These sites are described on Figure 1.2 below.

Figure 1.2 - Designated sites and nature conservation designations



Ecological Assessment of the Routes:

Notes presented here are referenced on the Maps in Sections 1 to 5 below.

Routes sections marked in white indicate that no ecological issues were identified during the walk through. These have all been surveyed. Absence of notes does not imply absence of survey.

Route sections marked in yellow are numbered and can be referred to a description identifying potential issues.

The following Route Options have been surveyed to a scoping level of detail and this is considered appropriate for these routes at this stage of the route selection process.

- Section 2, Purple Route
- Section 4, Red (Tullydish) Route
- Section 5, Light Blue Route

Target notes (TN) are indicated in Red.

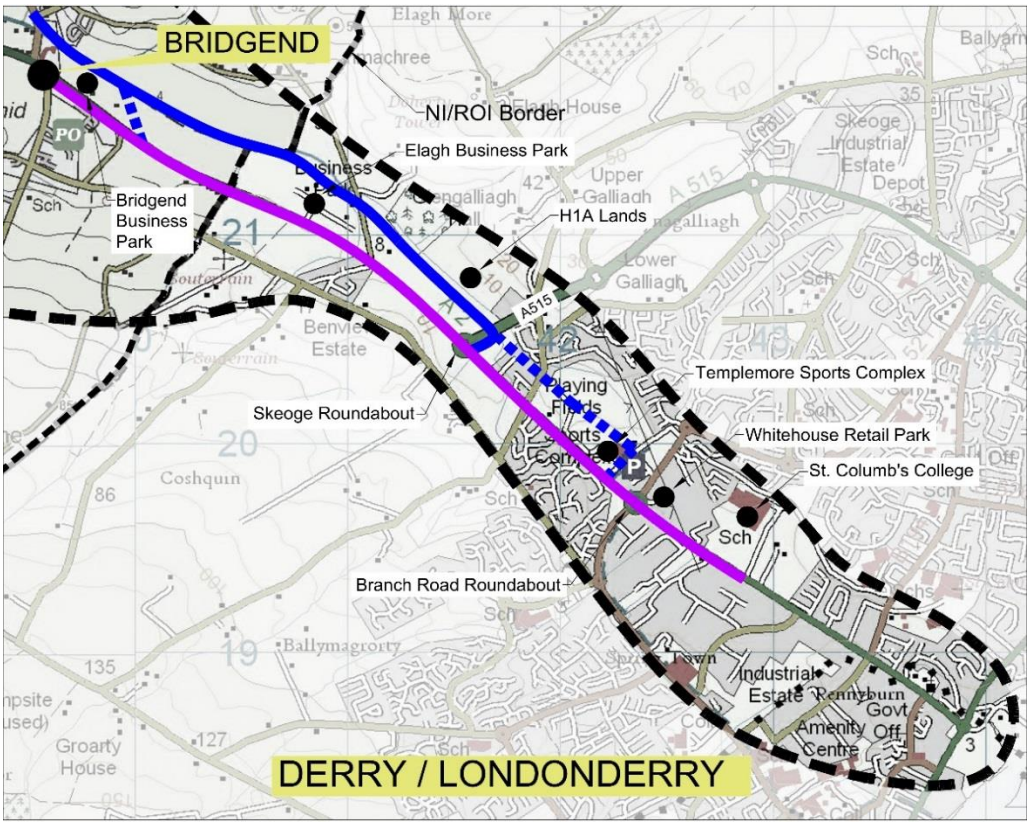
Individual trees or tree groups are indicated in Green. The mapping of a tree does not imply that the tree will be lost, or damaged, by the development of the greenway project.

Section 1

The Purple corridor along section 1 starts at Pennyburn Roundabout. The section of the corridor between Pennyburn Roundabout and St Columb's College is proposed to be developed as part of the A2 Buncrana Road Widening Scheme. The corridor follows the Alignment of the A2 and R238 to Bridgend, as shown in Map 1.1

The Blue Corridor diverges from the Purple Corridor at Templemore Road, where it continues through the grounds of Templemore Sports Complex as far as the Upper Galliagh Road.
From the Upper Galliagh Road, the corridor traverses the line of the former Londonderry & Lough Swilly Railway Line and along the alignment of the Skeoge to Bridgend.

A more detailed description of Route Corridors can be found in the Stage 2 Preferred Route Corridor Selection Report.



Map 1.1

Map 1.2 covers the area between the Pennyburn and Branch Roundabouts along the existing A2.

Map 1.3 covers the area between the Branch and Skeoge roundabouts along the existing A2, passing the Templemore Sports Complex and Whitehouse Retail Park

Map 1.4 covers the area between the Skeoge roundabout and the roundabout at the western side of Bridgend, crossing the border and passing Elagh and Bridgend business parks.

Map 1.2

Map 1.3

Map 1.4

Map 1.2

TN1 – Rear of Home Bargains car park. The proposed route is in the left side or the road and runs alongside the bank down to the car park where an extensive stand of Japanese Knotweed (Fallopia japonica) occurs. A few canes emerge between the chain link fence and the pavement.

TN2 – The section A route includes a short length of planted woodland in which a few canes of Japanese Knotweed were noted.

Section A – A hardly-used council car park provides an option for the route here. It is accessed from Pennyburn Pass via a narrow strip of A:112 planted broadleaved woodland. This a young stand of planted Downy Birch (Betula pubescens ssp pubescens) and Common Alder (Alnus glutinosa) with Red-osier Dogwood (Cornus stolonifera) and Cherry Laurel (Prunus laurocerasus) below and an exclusively Atlantic Ivy (Hedera hibernica) dominated ground-flora.

Red-osier Dogwood (Cornus stolonifera)	A	
Cherry Laurel (Prunus laurocerasus)	A	Spread from pavement edge
Downy Birch (Betula pubescens ssp pubescens)	F	To 14
Common Alder (Alnus glutinosa)	F	To 15
Hawthorn (Crataegus monogyna)	R	Sapling

Ground-flora and herbaceous:

Atlantic Ivy (Hedera hibernica)	ALD
Japanese Knotweed (Fallopia japonica)	A
Bramble (Rubus fruticosus agg.)	O
Hedge Woundwort (Stachys sylvatica)	R
Common Nettle (Urtica dioica)	R
Ground-elder (Aegopodium podagraria)	R
Bittersweet (Solanum dulcamara)	R

The car park with planted street trees, mainly Limes, in projecting weedy beds, sometimes with landscaping shrubs.

Crimean Lime (Tilia x euchlora)	x6	To 19 cm dbh
Silver Birch (Betula pendula)	x2	To 13 cm
Rusty Willow (Salix cinerea subsp oleifolia)	x1	Coppice to 16 cm dbh + saps
Goat Willow (Salix caprea)	x1	Semi-mature
Common Alder (Alnus glutinosa)	O	To 16 cm
Sycamore (Acer pseudoplatanus)	R	Recruited sapling
Ash (Fraxinus excelsior)	R	Recruited sapling
Pedunculate Oak (Quercus robur)	R	Recruited sapling
Goat Willow (Salix caprea)	R	Recruited sapling

Landscape planting generally not robust, except for the Red-osier Dogwood (Cornus stolonifera) to the north end.

Red-osier Dogwood (Cornus stolonifera)	LD	
Snowberry (Symphoricarpos × chenaultii 'Hancock')	LO	
Cherry Laurel (Prunus laurocerasus 'Otto Luyken')	OLF	
Japanese Rose (Rosa rugosa)	R	
Oregon-grape (Mahonia media cv)	VLF	

Weedy planting beds

American Willowherb (Epilobium ciliatum)	R	
Japanese Knotweed (Fallopia japonica)	R	
Creeping Buttercup (Ranunculus repens)		
Cock's-foot (Dactylis glomerata)		
Hogweed (Heracleum sphondylium)		
Dandelion (Taraxacum officinale)		
Common Bent (Agrostis capillaris)		
Common Ragwort (Senecio jacobaea)		
Field Horsetail (Equisetum arvense)	OLA	Causing heave in places
Broad-leaved Dock (Rumex obtusifolius)		
Rosebay Willowherb (Chamerion angustifolium)		
Hedge Mustard (Sisymbrium officinale)		
Yorkshire-fog (Holcus lanatus)		
Smooth Sow-thistle (Sonchus oleraceus)		
Pineappleweed (Matricaria discoidea)		
Short-fruited Willowherb (Epilobium obscurum)		
Hedge Woundwort (Stachys sylvatica)		
Groundsel (Senecio vulgaris)		

Section B – the indicative route drawings depict the greenway detouring off the Buncrana Road to travel through the former Arntz Belting factory site (B1 and B2) then joining the Pennyburn Industrial Estate Road via the former Eurowest Campus to re-join the Buncrana Road past the Collon Terrace pinch point.

@ B1 the potential route gains the internal road in the Arntz compound via a bank from which Japanese Knotweed (Fallopia japonica) has been eliminated and is now revegetating

@ B2 an annexed and unmanaged section of the Arntz site with B:21 unimproved neutral grassland much invaded by Rusty Willow (Salix cinerea subsp oleifolia), by False Oat-grass (Arrhenatherum elatius), and by weeds. The sward dominated by Creeping Thistle (Cirsium arvense) in the centre and Great Horsetail (Equisetum telmateia) at the northern tip.

Open areas:

Creeping Thistle (Cirsium arvense)	ALD	
Creeping Bent (Agrostis stolonifera)	A	
Yorkshire-fog (Holcus lanatus)	F-A	
Great Horsetail (Equisetum telmateia)	FLA	
False Oat-grass (Arrhenatherum elatius)	F	Patchy throughout
Meadow Vetchling (Lathyrus pratensis)	O-F	

Tufted Vetch (Vicia cracca)	OLA
Cock's-foot (Dactylis glomerata)	OLF
Greater Bird's-foot-trefoil (Lotus pedunculatus)	OLF
Field Horsetail (Equisetum arvense)	OVLF
Hogweed (Heracleum sphondylium)	O
Bramble (Rubus fruticosus agg.)	O
Ribwort Plantain (Plantago lanceolata)	O
Sweet Vernal-grass (Anthoxanthum odoratum)	O
Hedge Bindweed (Calystegia sepium agg)	O
Timothy (Phleum pratense)	O
Springy Turf-moss (Rhytidiadelphus squarrosus)	LO
Ribwort Plantain (Plantago lanceolata)	LO
Yarrow (Achillea millefolium)	R
Common Ragwort (Senecio jacobaea)	R
Soft-rush (Juncus effusus)	R
Common Sorrel (Rumex acetosa subsp acetosa)	R
Common Bird's-foot-trefoil (Lotus corniculatus)	R
Silverweed (Potentilla anserina)	R

Goat Willow (Salix caprea) occurs along the fringe with the adjacent hard surface, the remainder of the Willow cover is Rusty Willow (Salix cinerea subsp oleifolia). This forms some 50-75% cover in the main stand. This with many of the open ground species sparsely represented, but not particularly Creeping Thistle (Cirsium arvense). Sharp-flowered Rush (Juncus acutiflorus) is recruited, and there a few large mossy wefts. Not wet underfoot and no pools.

Rusty Willow (Salix cinerea subsp oleifolia)	A
Bramble (Rubus fruticosus agg.)	FLD
Yorkshire-fog (Holcus lanatus)	FLA
Common Sorrel (Rumex acetosa subsp acetosa)	F
Pointed Spear-moss (Calliergonella cuspidata)	LA-D
Common Tamarisk-moss (Thuidium tamariscinum)	LA-D
Springy Turf-moss (Rhytidiadelphus squarrosus)	LA
Bush Vetch (Vicia sepium)	O
Broad-leaved Willowherb (Epilobium montanum)	O
Cuckooflower (Cardamine pratensis)	R

@ B3 the route in the Eurowest campus is mainly in competent hard surface. The verge at the fence is at the same level as B2, and is similarly vegetated, with Great Horsetail (Equisetum telmateia) dominating small patches to the north. Bramble (Rubus fruticosus agg.) patches invading the False Oat-grass (Arrhenatherum elatius) sward. Here recruited Ash (Fraxinus excelsior) saplings (O) and Pedunculate Oak (Quercus robur) saplings (R) are taller (to 3m) than over the more recent ruderal areas within the Eurowest campus.

Section C – St Columb's College has a planted tree screen alongside the Buncrana Road comprising semi-mature Wild Cherry (Prunus avium), Pedunculate Oak (Quercus robur) and Common Alder (Alnus glutinosa) with trees around 1.5m from the Paladin boundary fence.

Section D – Beside the playing fields there is a tree screen of large trees, mainly Sycamore (Acer pseudoplatanus) and Hornbeam (Carpinus betulus) behind a tall Hawthorn (Crataegus monogyna)

hedge at the fence-line. The trees are 2-3 m from the pavement edge, but deep excavations here would still damage roots.

TN3 – Wide reservation alongside the road here. Adjacent vegetation will not be impacted, but there is a patchy zone of Great Horsetail (Equisetum telmateia) at the pavement edge.

Section E – the reservation narrows here meaning that to accommodate the greenway, they crash barrier will be moved 1.0 m back from the edge with the loss of 200 m2 of Hybrid Oleaster (Elaeagnus x ebbingei) and Escallonia (Escallonia cv) with possibly young including young Hornbeam (Carpinus betulus) in the landscaped bank down from the pavement.

Section F – beside the roundabout B:22 semi-improved neutral grassland dominated by Red Fescue (Festuca rubra), False Oat-grass (Arrhenatherum elatius) and Yorkshire-fog (Holcus lanatus), with scrub of Gorse (Ulex europaeus), young Common Alder (Alnus glutinosa) and young Downy Birch (Betula pubescens ssp pubescens).

Tree table - Map 1.1

No.	Spp.	DBH cm	BRRG	Condition/notes
1	Sycamore (Acer pseudoplatanus)	To 33	1	2-stem. Located in the garden of Collon Villa at pavement edge. Abundant light Ivy cover.
2	Beech (Fagus sylvatica) Beech (Fagus sylvatica) Beech (Fagus sylvatica)	To 60 To 24 To 36	1 1 1	Low-breaking or multi-stemmed trees at the fence line after St. John's Park .
3	± 10 Common Alder (Alnus glutinosa)	To 35	2	1-1.5 m from the fence.

Map 1.3

Section A – The required widening here will result in the loss of an overgrown hedge of Cherry Laurel (Prunus laurocerasus 'Rotundifolia') and of scattered young Lawson's Cypress (Chamaecyparis lawsoniana). It appears there would be space to replant a more wildlife-friendly screen.

Section B – The route through Templemore sports complex will be finalised once development plans are available. The only ecological constraints along the front edge of the complex appear to be the planted trees. The required tree losses (if any) will need to be reviewed once the route is finalised.

@ B1 The indicative route drawings refer to 150 m of tree and hedge removal – this appears to refer to a tree belt planted outside the security fence around the sports complex, and comprises:

	Very-Mature 60+ Mature 30+ Early-Mature 20+	Semi-Mature 12+ Young 6+	Sapling to 6 Seedling 0-2 yr
Trees			
Beech (Fagus sylvatica)		D	
Ash (Fraxinus excelsior)	LO		
Rowan (Sorbus aucuparia)		O	
Shrubs			
Holly (Ilex aquifolium) or Highclere Holly (Ilex x altaclerensis)		D	

The semi mature trees are 10 – 20 cm dbh and with a Bat Roost Risk of 0.
This seems to be the most difficult stand to avoid with a route across the front of the complex as there is no room to accommodate the route between the all-weather pitch and the trees.

@ B2 In front of the Rugby pitches the Beech (Fagus sylvatica) and Ash (Fraxinus excelsior) stand is reduced to a tree line.

@ B3 Beyond no. 53 Buncrana Road, a double row of mainly semi-mature Pedunculate Oak (Quercus robur) set back from the fence and with a few larger Sycamore (Acer pseudoplatanus) and a group of mature White Poplar (Populus alba) at the end.

Section C – The former railway is now fully incorporated into the garden of No. 6 Upper Galliagh Road, and presumed to be unavailable.

Section D – To access the alternative to the main road route, a narrow brownfield access to Doherty's car park. This with worn ruderal vegetation in the centre and patchy regeneration of Rusty Willow (Salix cinerea subsp oleifolia) and various garden shrubs, but is free of Schedule 9 species. Inspection covers indicate underground services here.

Section E – The former railway here can be accessed from section D before the hard surfaced car park. It is managed as a horse pasture, probably by the householder at No. 6 Upper Galliagh Road. Behind the house it is narrow (7-8m wide) and re-seeded with Perennial Rye-grass (Lolium perenne) and White Clover (Trifolium repens) which only achieve sparse cover in a poorly vegetated sward.

The Skeoge River runs alongside the track here – There is a steep drop down to the river with gabions above which is a scrubby upper bank:

Hawthorn (Crataegus monogyna)	D	
Rusty Willow (Salix cinerea subsp oleifolia)	O	
Osier (Salix viminalis)	O	
Butterfly-bush (Buddleja davidii)	R	
Sycamore (Acer pseudoplatanus)	O	To semi-mature
Bramble (Rubus fruticosus agg.)	O	

Species-poor Common Ivy (Hedera helix) and Cow Parsley (Anthriscus sylvestris) below the cover.

Downstream of the big headwall the upper Hawthorn (Crataegus monogyna) zone continues, but here with the lower slope of soil occupied largely by Common Nettle (Urtica dioica) and Bramble (Rubus fruticosus agg.). Eutrophic herbs and the non-native Fringe Cups (Tellima grandiflora) noted:

Cow Parsley (Anthriscus sylvestris)
Fringe Cups (Tellima grandiflora)
Common Nettle (Urtica dioica)
Broad-leaved Dock (Rumex obtusifolius)
Cleavers (Galium aparine)

Towards the A515 dual carriageway the field widens and is a worn eutrophic B:22 semi-improved neutral grassland dominated by Creeping Bent (Agrostis stolonifera), Yorkshire-fog (Holcus lanatus) and Soft-rush (Juncus effusus), species-poor and weedy with a few scattered Gorse (Ulex europaeus). The river here with big stands of Raspberry (Rubus idaeus) and patchy Japanese Knotweed (Fallopia japonica) but this probably far enough from the prospective route not to be a problem.

Section F – The former railway here runs on a wide embankment through low-lying Rushy fields. It is 8-9 m wide, wide enough to accommodate a greenway path without significant damage to the large Ash (Fraxinus excelsior) and Sycamore (Acer pseudoplatanus) that are occasional on the LHS bank top, or the large Common Alder (Alnus glutinosa) on the Skeoge River bank on the RHS.

The sward is a reseeded B:6 poor semi-improved grassland.

Perennial Rye-grass (Lolium perenne)	D
Creeping Buttercup (Ranunculus repens)	F-A
Broad-leaved Dock (Rumex obtusifolius)	FLA
Creeping Bent (Agrostis stolonifera)	F

Common Nettle (Urtica dioica)	OLF
Ribwort Plantain (Plantago lanceolata)	O
Greater Plantain (Plantago major)	O
Common Sorrel (Rumex acetosa subsp acetosa)	O
Dandelion (Taraxacum officinale)	O
Hogweed (Heracleum sphondylium)	O
Cleavers (Galium aparine)	O
White Clover (Trifolium repens)	LF
Common Knapweed (Centaurea nigra)	R
Meadow Buttercup (Ranunculus acris)	R

There are tall Hawthorn (Crataegus monogyna) to either side, with many mature multi-stemmed Ash (Fraxinus excelsior) and Sycamore (Acer pseudoplatanus) on the LHS, and scattered mature Common Alder (Alnus glutinosa) and rare Horse-chestnut (Aesculus hippocastanum) on the RHS. The bank to the river with a shade ground-flora:

Common Ivy (Hedera helix)	D
Fringe Cups (Tellima grandiflora)	FLA
Cow Parsley (Anthriscus sylvestris)	F
Wood Anemone (Anemone nemorosa)	OLA
Ramsons (Allium ursinum)	OLA
Lesser Celandine (Ficaria verna)	OLF
Common Striated Feather-moss (Eurhynchium striatum)	O
Primrose (Primula vulgaris)	O
Herb-Robert (Geranium robertianum)	O
Hedge Woundwort (Stachys sylvatica)	O
Great Wood-rush (Luzula sylvatica)	O
Hogweed (Heracleum sphondylium)	O
Broad Buckler-fern (Dryopteris dilatata)	O
Male-fern (Dryopteris filix-mas)	O
Meadowsweet (Filipendula ulmaria)	O
Greater Stitchwort (Stellaria holostea)	LF
Wood-sorrel (Oxalis acetosella)	LF
Bluebell (Hyacinthoides non-scripta)	VLF
Opposite-leaved G'-saxifrage (Chrysosplenium oppositifolium)	VLO
Pignut (Conopodium majus)	LO
Red Campion (Silene dioica)	R
Tufted Hair-grass (Deschampsia cespitosa)	R

Tree table - Map 1.3

No.	Spp.	DBH cm	BRRG	Condition/notes
1	Ash (Fraxinus excelsior)	34	1	Front edge of stand
2	Ash (Fraxinus excelsior)	44	1	Front edge of stand
3	White Poplar (Populus alba)	43	0	Low break
4	Downy Birch (Betula pubescens)	43	1	In Beech hedge beside a 3.9m wide verge
5 6	Rowan (Sorbus aucuparia) Rowan (Sorbus aucuparia)	14 To 12	0 0	5, Low break, 6, Multi-stemmed. Both these trees are in the tapering B:4 improved grassland verge and at risk of being lost

Map 1.4

Section A – The railway continues as described under Map 2 notes. It is managed as a 'long-acre' field grazed by horses. With makeshift stables located approximately where the Skeoge veers away from the railway track.

Beyond the stables there is biomass Willow planting to either side. There are numerous Badger crossing points into the plantation on the LHS, none leading to setts. The long field with a field gate opening out onto Elagh Road.

TN 1 – Culverted ditch crosses the railway 2.5m below the surface level.

TN 2 – From Elagh Road to the +ve, there is already a cycleway designated on the road verge

TN3 – A major stream runs alongside Elagh Road and would need to be culverted to gain the Elagh Estate spine road, or the Skeoge route. 1.8 – 2m wide with brisk flow over a stony substrate.

Section B – initially (B1) the former railway line is distinguishable but very shortly becomes lost in excavations and infilling associated with the on-going development of the Elagh Business campus.

The Skeoge here runs at an altitude some 2 – 2.5 m below the adjacent development surface

The river is generally around 2.5 m wide and flows briskly over a series of modest riffles and pools. In some sections over gravel and firm silt in depths as little as 10 cm and as deep as 45 cm, but generally in the 20 – 30 cm range. In other sections it flows over softer silt sediment and is deeper, generally between 35 and 50 cm.

River vegetation:

Common Water-starwort (Callitriche stagnalis)	F
Unbranched Bur-reed (Sparganium emersum)	OLF
Broad-leaved Pondweed (Potamogeton natans)	R
Floating Sweet-grass (Glyceria fluitans)	VLF
Branched Bur-reed (Sparganium erectum)	VLA

The banks both sides are vegetated by False Oat-grass (Arrhenatherum elatius) and Common Nettle (Urtica dioica) with patches of Bramble (Rubus fruticosus agg.), and grading into the Area C type cover. The bank on the application side is frequently undercut, with the grass cover festooned in curtains that often obscure the lower bank. Behind the grassy screen the lower bank often with Fringe Cups (Tellima grandiflora) and few other species.

Additional species on the upper bank:

Hogweed (Heracleum sphondylium)
Great Willowherb (Epilobium hirsutum)
Creeping Thistle (Cirsium arvense)
Cow Parsley (Anthriscus sylvestris)
Cleavers (Galium aparine)
Reed Canary-grass (Phalaris arundinacea)

Additional species on the lower bank:

Broad Buckler-fern (Dryopteris dilatata)
Common Figwort (Scrophularia nodosa)
Wavy Bitter-cress (Cardamine flexuosa)
Brooklime (Veronica beccabunga)

@ B1 – An unmanaged area that remain unfilled. The adjacent development is on a level 120 cm higher than the former railway. The railway vegetation is a low value mix of False Oat-grass (Arrhenatherum elatius), Common Nettle (Urtica dioica), and Bramble (Rubus fruticosus agg.) with scattered young to semi-mature Rusty Willow (Salix cinerea subsp oleifolia) and Common Alder (Alnus glutinosa). 3 x mature Italian Alder (Alnus cordata) are planted at the infill edge.

@ B2 – the railway is lost below contemporary earth movements or developments.

@ B3 – there is a large adjacent and substantial infill area with gabions alongside the river. 4-5 m remains between the bank top and the gabions.

TN 4 – This ditch along which the international border runs, is culverted below the new infill either a new bridge or culvert would be required, or the route would have to be via the new infill surface.

Section C – Off the main road, the route would have to cross this infilled, but neglected area.

@ C1 from the spine road to the Tn4 ditch is recently disturbed ruderal Creeping Bent (Agrostis stolonifera) surface with much bare soil adjacent to the newly erected palisade fence and offering a clear route for a greenway.

@ C2 the bulk of the central area is a damp ruderal GS:4 wet semi-natural grassland with a few temporary pools in places.

Creeping Bent (Agrostis stolonifera)	A
Pointed Spear-moss (Calliergonella cuspidata)	A
Springy Turf-moss (Rhytidiadelphus squarrosus)	A
Sweet Vernal-grass (Anthoxanthum odoratum)	F
Red Clover (Trifolium pratense)	F
Creeping Buttercup (Ranunculus repens)	F
Yorkshire-fog (Holcus lanatus)	O-F
Bramble (Rubus fruticosus agg.)	O-F
Common Bent (Agrostis capillaris)	O
Silverweed (Potentilla anserina)	O
Hoary Willowherb (Epilobium parviflorum)	O
Greater Bird's-foot-trefoil (Lotus pedunculatus)	O
Marsh Ragwort (Senecio aquaticus)	O
Jointed Rush (Juncus articulatus)	O
Soft-rush (Juncus effusus)	LF
Greater Bird's-foot-trefoil (Lotus pedunculatus)	LF
Field Horsetail (Equisetum arvense)	LF
Sharp-flowered Rush (Juncus acutiflorus)	LO
Hoary Willowherb (Epilobium parviflorum)	LO
Oval Sedge (Carex leporina)	R
Ribwort Plantain (Plantago lanceolata)	R

With scattered small saplings of Rusty Willow (Salix cinerea subsp oleifolia).

@ C3 Towards the Skeoge the infill is more elevated and includes more frequent and taller Rusty Willow (Salix cinerea subsp oleifolia) in a mature, ruderal derived GS:2 Dry meadow and grassy verge that is species-poor, dominated by rank Soft-rush (Juncus effusus) in patches, otherwise by Creeping Bent (Agrostis stolonifera) and Yorkshire-fog (Holcus lanatus).

Creeping Bent (Agrostis stolonifera)	ALD
Yorkshire-fog (Holcus lanatus)	ALD
Soft-rush (Juncus effusus)	FLD
Cock's-foot (Dactylis glomerata)	O-F
False Oat-grass (Arrhenatherum elatius)	OLF
Red Fescue (Festuca rubra)	OLF
Hogweed (Heracleum sphondylium)	O
Bush Vetch (Vicia sepium)	O
Meadow Vetchling (Lathyrus pratensis)	O
Winter Heliotrope (Petasites fragrans)	LF
Rosebay Willowherb (Chamerion angustifolium)	LF
Wild Teasel (Dipsacus fullonum)	LO
Meadowsweet (Filipendula ulmaria)	LO
Ribwort Plantain (Plantago lanceolata)	LO

Structural:

Rusty Willow (Salix cinerea subsp oleifolia)	F	Mainly young/sapling
Snowberry (Symphoricarpos albus)	LA	
Broom (Cytisus scoparius)	O	
Gorse (Ulex europaeus)	LF	
Bramble (Rubus fruticosus agg.)	F	

Downstream, Creeping Bent (Agrostis stolonifera) is increasingly replaced by False Oat-grass (Arrhenatherum elatius), and the Rusty Willow (Salix cinerea subsp oleifolia) begin to consolidate, eventually forming cover along with crime and Gorse (Ulex europaeus). This is not damp, and is derived from ruderal regeneration, it does not constitute the Northern Ireland Biodiversity Strategy priority habitat *Wet Woodland*.

TN 5 – Badger foraging paths followed but no setts found. The paths converge in the corner where a small latrine was noted.

Section D – Here the former railway follows a wide embankment around 3.5 m above the river level, and around the same level as the section C3 infill,

The upper level section of the embankment is 3.6 m wide. The whole embankment structure is unmanaged GS:2 Dry meadow and grassy verge.

@ D1:

False Oat-grass (Arrhenatherum elatius)	A
Common Nettle (Urtica dioica)	A
Cleavers (Galium aparine)	F
Broad-leaved Dock (Rumex obtusifolius)	F
Yorkshire-fog (Holcus lanatus)	F
Tufted Hair-grass (Deschampsia cespitosa)	OLF
Cock's-foot (Dactylis glomerata)	O
Creeping Bent (Agrostis stolonifera)	O-F
Gorse (Ulex europaeus)	O
Bramble (Rubus fruticosus agg.)	FLA
Hawthorn (Crataegus monogyna)	R
Reed Canary-grass (Phalaris arundinacea)	LF

Initially Bramble (Rubus fruticosus agg.) is in a few dense stands as well as dispersed plants

TN6 – A well-established and active, 3-entrance Badger sett located on the lower edge of the embankment. The entrances are around 6m from the upper level.

@ D 2 To the positive side of the Badger sett False Oat-grass (Arrhenatherum elatius) is largely replaced by Yorkshire-fog (Holcus lanatus) and Soft-rush (Juncus effusus), with Creeping Bent (Agrostis stolonifera) now scrambling to reach illuminated areas in the rank cover rather than

sward forming itself. Bramble (Rubus fruticosus agg.) increases progressively in abundance, and Downy Birch (Betula pubescens ssp pubescens) and Elder (Sambucus nigra) are recruited into the cover.

TN7 – A single entrance Otter holt and slide in the lower embankment on the outside edge (the riverside edge is inaccessible here). The holt entrance is 4.5 m from the adjacent GA1 Improved agricultural grassland boundary. A few Otter pads noted in the recently cleared boundary ditch and these would need to be considered when finalising a detailed design for a route along this corridor.

Section E – mature ruderal development over infill densely occupied by WS:1 scrub:

Bramble (Rubus fruticosus agg.)	A	
Rusty Willow (Salix cinerea subsp oleifolia)	F-A	
Butterfly-bush (Buddleja davidii)	O	
Raspberry (Rubus idaeus)	LA	
Hawthorn (Crataegus monogyna)	O	Young
Common Alder (Alnus glutinosa)	O	Young
Waterer's Cotoneaster (Cotoneaster x watereri)	R	

Cleavers (Galium aparine)	FLA
Broad-leaved Dock (Rumex obtusifolius)	O
Common Nettle (Urtica dioica)	F
Creeping Bent (Agrostis stolonifera)	F-A
Springy Turf-moss (Rhytidiadelphus squarrosus)	F
Rosebay Willowherb (Chamerion angustifolium)	LA
False Oat-grass (Arrhenatherum elatius)	F
Creeping Thistle (Cirsium arvense)	O
Cock's-foot (Dactylis glomerata)	O
Bush Vetch (Vicia sepium)	O
Yorkshire-fog (Holcus lanatus)	LA

The cover is less dense away from the river, where there are occasional gaps in the Bramble (Rubus fruticosus agg.) cover. Where Willows consolidate, it is to form dry stands, bot wet woodland.

The scrub cover becomes too dense to penetrate behind Fergusson Fuels' compound.

Section F – the former railway is once again distinguishable as a wide river side embankment rising above Devlin's Yard. The dense WS:1 continues along the embankment, with dense mature Japanese Knotweed (Fallopia japonica) in an extensive stand almost the whole length of the yard.

Section G – here, behind Carey's Amusements, there is recently scraped infill, becoming revegetated and including substantial patches of Japanese Knotweed (Fallopia japonica) on the level surface.

TN 8 – A substantial stream flowing along the boundary of Carey's. This around 3m wide and flowing briskly over stones. Japanese Knotweed (Fallopia japonica) remains patchy along the stream side. A culvert would be required.

TN9 – If a route through the trading estate can be secured, there are no particular ecological constraints, but there is a pinch point where the rear car parking is accessed.

Section H - Beside the roundabout a verge of Perennial Rye-grass (Lolium perenne) planted with Tulips leads to a grassland of False Oat-grass (Arrhenatherum elatius), Common Nettle (Urtica dioica) and Bramble (Rubus fruticosus agg.) with sparse Common Reed (Phragmites australis) – but not wet. Further to the positive, this leads to a small block of WN:6 woodland classified as wet wood in the Fossit classification, but not actually wet.

	Very-Mature 60+ Mature 30+ Early-Mature 20+	Semi-Mature 12+ Young 6+	Sapling to 6 Seedling 0-2 yr
Trees			
Common Alder (Alnus glutinosa)		A	
Rusty Willow (Salix cinerea subsp oleifolia)		A	
Sycamore (Acer pseudoplatanus)		O	O
Shrubs			
Elder (Sambucus nigra)		R	R
Holly (Ilex aquifolium)			R
Hawthorn (Crataegus monogyna)		LA	

The ground-flora is very species-poor:

Common Ivy (Hedera helix)	A
Bramble (Rubus fruticosus agg.)	F
Lesser Celandine (Ficaria verna)	A
Cleavers (Galium aparine)	F

TN 10 – A small patch of untreated Japanese Knotweed (Fallopia japonica) at the roadside.

Section I – The former railway here is occupied by vacant and locked up commercial premises. The route surveyed passes between the boundary fence and the adjacent plantation. At I1, this is a 2.7 m gap between the palisade and the plantation boundary ditch, but at I2 there is only a 2.1 gap between the treatment works fence and the adjacent yard, and this a steeply sloping soil bank. Alternative ways past the plantation were investigated on the day, and the most appropriate route could be considered further at detailed design stage should this route option be progressed.

@ I:1 the route climbs a soil ramp which stops adjacent to the nearest shed, beyond which is a large stand of Salmonberry (Rubus spectabilis), some 80m^2. In front of the ramp a large stand of Raspberry (Rubus idaeus) and patchily abundant Himalayan Balsam (Impatiens glandulifera).

To the positive of the soil ramp the route is in light cover of Rusty Willow (Salix cinerea subsp oleifolia) which can be avoided, plus scattered Bramble (Rubus fruticosus agg.) Common Ivy (Hedera helix) Creeping Buttercup (Ranunculus repens) etc on the ground. Initially with an 80m2 stand of Salmonberry (Rubus spectabilis) on the potential path route, and with Himalayan Balsam (Impatiens glandulifera) scattered throughout. A further mound of soil at the plantation edge is occupied by 6 semi-mature to mature Sycamore (Acer pseudoplatanus) and 1 x Ash (Fraxinus excelsior) here with a ground-flora of species-poor Common Ivy (Hedera helix) and Ground-elder (Aegopodium podagraria).

@ I:2 – behind the paladin fence a steeply sloping bank occupied by early mature Hawthorn (Crataegus monogyna) and a few young Rusty Willow (Salix cinerea subsp oleifolia).

Section J – WD:4 conifer plantation. An un-thinned Spruce plantation (species not recorded). Such stands are not generally of ecological value, and a created ride may be a solution here, but the centre of the stand hosts a large Rookery which should not be disturbed.

Section K – If the route has to run along the main road here, it would be in a verge of species-poor Soft-rush (Juncus effusus), Yorkshire-fog (Holcus lanatus) and Creeping Buttercup (Ranunculus repens) dominated GS:2 Dry meadows and grassy verges, with patchy Bramble (Rubus fruticosus agg.) and Raspberry (Rubus idaeus) on the bank. There is an empty shed that creates a pinch point. This is a corrugated steel construction which doesn't offer suitably insulated roosting spaces for bats.

Section L – Either the access track to the treatment works, or a 3.9 m gap between the fence along the track (and the paladin fence around the works compound) and the adjacent plantation, where Sycamore (Acer pseudoplatanus) are planted along the outer edge.

This gap occupied by Creeping Buttercup (Ranunculus repens) and Common Nettle (Urtica dioica) in GS:2 (as there is no classification for non-ruderal herbs available). With frequent small saplings of Rusty Willow (Salix cinerea subsp oleifolia) , patches of Raspberry (Rubus idaeus) and Salmonberry (Rubus spectabilis) but not as consolidated over, patches of Winter Heliotrope (Petasites fragrans) and Great Willowherb (Epilobium hirsutum), and beside the works, large patches of Himalayan Balsam (Impatiens glandulifera).

TN 11 – to gain the railway here from the adjacent GA:1 Improved agricultural grassland the route crosses a ditch that may require a culvert extension.

Section M – The verge here is 2.5m wide of

False Oat-grass (Arrhenatherum elatius)	D
Common Nettle (Urtica dioica)	
Cock's-foot (Dactylis glomerata)	
Dandelion (Taraxacum officinale)	
Bramble (Rubus fruticosus agg.)	O
Cow Parsley (Anthriscus sylvestris)	
Red Fescue (Festuca rubra)	
Montbretia (Crocosmia x crocosmiiflora)	R

The boundary fence is above a 1.6 m drop to the adjacent rushy B:21 unimproved neutral grassland, and then to the biomass plantation. A thorny Raspberry (Rubus idaeus) noted on the bank past the plantation. Not Salmonberry (Rubus spectabilis).

Section N – two rows of Small-leaved Lime (Tilia cordata) street trees behind a 3-4m GA:2 improved amenity grass verge. All Bat Roost Risk Group 0.

Tree table Map 1.4

No.	Spp.	DBH cm	BRRG	Condition/notes
1	Ash (Fraxinus excelsior)	To 38	2	Multi-stemmed. Located at bank top, one of many large trees, along this section. Mostly BRR 1 but this tree Ivy cover and rot dictate BRR 2 category.
2	Ash (Fraxinus excelsior)	To 25	2	Multi-stemmed from low break. Bank top
3	Sycamore (Acer pseudoplatanus)	43	1	Top of bank
4	Common Alder (Alnus glutinosa)	36	1	Bank base
5	Common Alder (Alnus glutinosa)	33	2	Bank top location where the verge is narrows by the bus stop.
6	Common Alder (Alnus glutinosa)	To 40	1	3-stems. At least 1 stem would be lost.

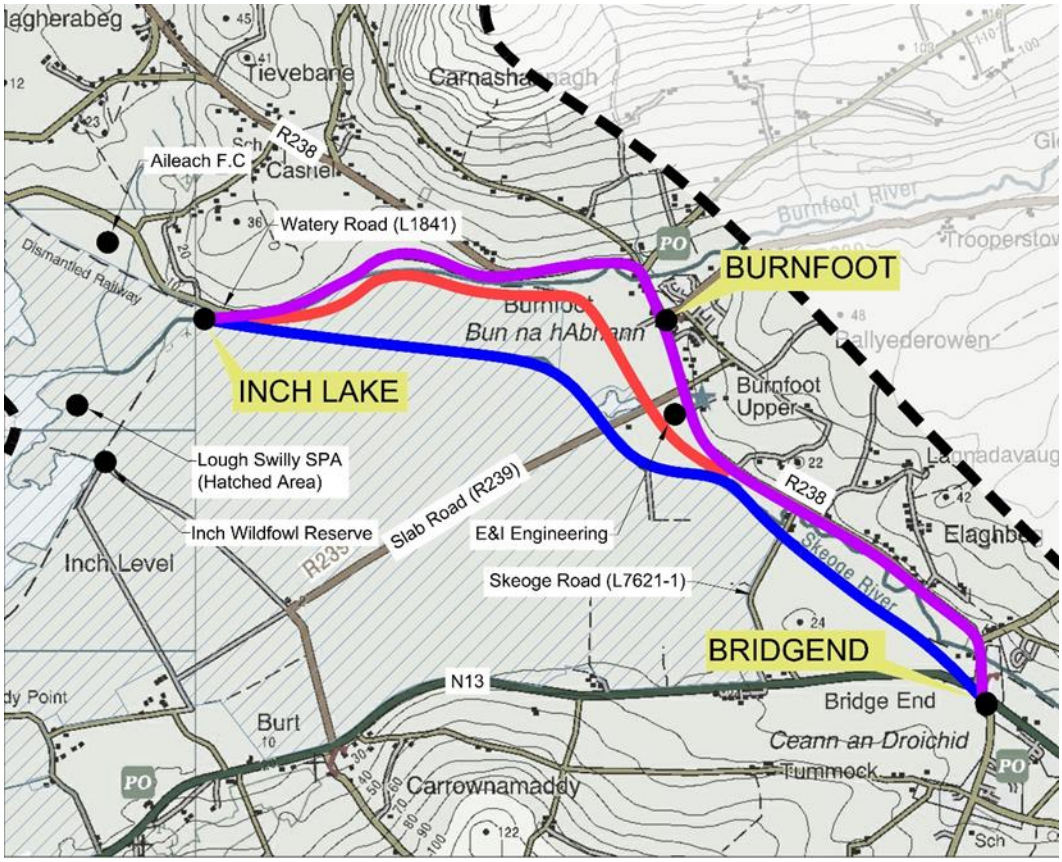
Section 2

The Blue Corridor starts at the intersection of the N13 and R238 following the alignment of the old railway line and Skeoge River to Inch Lake as shown in Map 2.1.

The Red Corridor starts at the intersection of the N13 and R238 following the alignment of the old railway line to Inch Lake as shown in Map 2.1.

The Purple Corridor starts at the intersection of the N13 and R238 and continues along the alignment of the R238, through Burnfoot before the corridor turns left onto the L1841 (Watery Road), running parallel to the Burnfoot River as far as Inch Lake, as shown in Map 2.1.

A More detailed description of the Route Corridors can be found in the Stage 2 Preferred Route Corridor Selection Report.

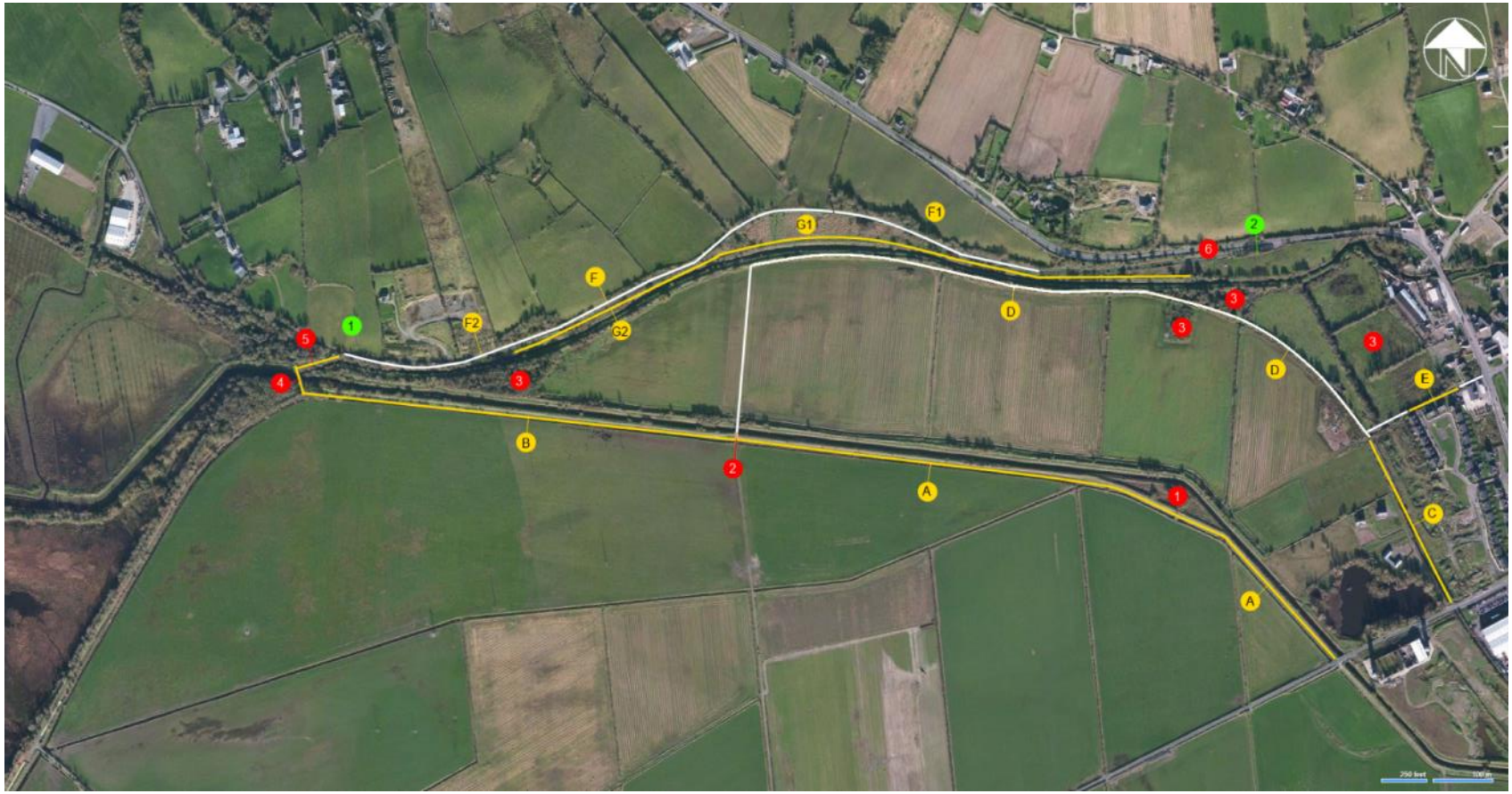


Map 2.1

Map 2.2 covers the Blue and Red Corridors from the R238 to R239 (Slab Road)

Map 2.3 covers the Blue and Red Corridors from the R239 (Slab Road) to Inch Lake, and the Purple Corridor between the R238 and Inch Lake.

Map 2.2 Red and Blue Route



Map 2.3 Red and Blue Route

Map 2.4 – Purple Route

Map 2.2

TN 1 – Small patch of Salmonberry (Rubus spectabilis) below the wall at the rear of the vacant premises.

Section A – The former railway line here is a semi-improved GS:2 dominated by Yorkshire-fog (Holcus lanatus) and with dense Hawthorn (Crataegus monogyna) and occasional semi-mature Rusty Willow (Salix cinerea subsp oleifolia) and Common Alder (Alnus glutinosa) on both banks. It carries a track that leads into the biomass field to the RHS of section B.

TN 2 – The existing track crosses a stream on a wide culvert here, a small piped culvert would be required to regain the railway line. Slender Rush (Juncus tenuis) noted here.

Section B – the railway line is 8-9 m wide here and passes a wide level improved field to the LHS, with a recently re-profiled ditch at the bank base, and the former hedges and scrub completely removed.

The sward is a species-poor and semi-improved GS:2 dominated by Yorkshire-fog (Holcus lanatus) and Creeping Bent (Agrostis stolonifera)

A Badger latrine was noted but no signs of sett excavation anywhere along the section.

Section C – a wide culvert leads from section B to C. Section C is a 4.7 m wide track with regularly planted young to semi-mature Ash (Fraxinus excelsior) along a fence to the LHS, and a sparse flailed Hawthorn (Crataegus monogyna) hedge to the RHS.

@ C1 the Yorkshire-fog (Holcus lanatus) dominated sward continues.

@ C2 the track is obviously used frequently by tractors.

Section D – the former railway track has been lost in this poor semi-improved, reseeded field. A levee runs alongside the Skeoge River with frequent saplings of an Osier (Salix viminalis) hybrid.

Section E – The railway track is discernible through an adjacent plantation of tall Crack Willow (Salix fragilis). Hawthorn (Crataegus monogyna) are scarce at the plantation edge, and a few of the planted willows have fallen or are leaning considerably over the prospective route and would require limbs to be cleared, but there is only very tree/shrub recruitment amongst the semi-shaded vegetation along the former track:

Common Nettle (Urtica dioica)	FLA	
Hogweed (Heracleum sphondylium)	F	
Meadowsweet (Filipendula ulmaria)	OLF	
Opposite-leaved G'-saxifrage (Chrysosplenium oppositifolium)	F-A	
Creeping Buttercup (Ranunculus repens)	LF	
Lesser Celandine (Ficaria verna)	OLF	
Cleavers (Galium aparine)	OLF	
Lady-fern (Athyrium filix-femina)	R	
Scaly Male-fern (Dryopteris affinis agg.)	R	
Fringe Cups (Tellima grandiflora)	LF	
Himalayan Balsam (Impatiens glandulifera)	FLA	Throughout

Young Hawthorn (Crataegus monogyna) and Rusty Willow (Salix cinerea subsp oleifolia) form a tangled cover to the positive side.

Section F – where the railway emerges from the plantation it remains with tall Hawthorn (Crataegus monogyna) hedges to either side keeping it semi-shaded with a vegetation similar to section E, including patchy Himalayan Balsam (Impatiens glandulifera), and also Ground-elder (Aegopodium podagraria), with Yorkshire-fog (Holcus lanatus) and Creeping Bent (Agrostis stolonifera) frequent.

TN 3 – The route along the former railway would require a bridge over the canalised Skeoge here.

Section G – an embankment/levee alongside the canalised section of the Skeoge here is one of the route options. The embankment initially has an upper level around 110 cm above the adjacent fields, and a lower level. The upper level provides a level surface 4m wide, and the entire structure is occupied by reseeded GA:1 Improved agricultural grassland, now semi-improved with much recruitment of False Oat-grass (Arrhenatherum elatius), Creeping Thistle (Cirsium arvense) Common Nettle (Urtica dioica) and Reed Canary-grass (Phalaris arundinacea). Himalayan Balsam (Impatiens glandulifera) is patchy along the river, and in places is established on the high bank.

Section H – this field is now tilled and recently reseeded, there is no sign of the former railway track alongside the factory.

TN 4 – the improved grassland field between the B238 and the Skeoge River runs down to the bank top with no berm to the negative side of the field. To the positive side up to the factory in runs down to a steep narrow embankment alongside a sluiced ditch which emerges from a culvert below the factory. To gain the Section H route would require a new bridge across the river and ditch.

Tree table Map 2.2

No.	Spp.	DBH cm	BRRG	Condition/notes
1	Crack Willow (Salix fragilis)	To 44	0	One large multi-stemmed willow leaning over the track would probably need to be completely removed.

Map 2.3

Section A – The levee along the canalised section of the Skeoge as it runs through the extensive level GA1 Improved agricultural grassland (a Rye grass ley), continues much the same as it was in Map 4 Section G, with an upper and lower level both around 4m wide. What structural vegetation there was along the embankment sides has been cleared.

Apart from the potential disturbance of winter birds, there are no ecological issues attaching to this long and unvaried section. The section between TN1 and TN2 clearly is used by tractors or excavators, probably just for the infilling at TN1.

TN 1 – The narrow area between the Skeoge and the embankment is currently being infilled.

TN 2 – the existing bridge is 4.5 m wide in leads into what is now a single large tilled field with no additional track leading from the bridge.

Section B – not particularly different to section A the embankment here vegetated by

Creeping Bent (Agrostis stolonifera)	A	
Reed Canary-grass (Phalaris arundinacea)	F	
Broad-leaved Dock (Rumex obtusifolius)	FLA	
False Oat-grass (Arrhenatherum elatius)	F	
Creeping Thistle (Cirsium arvense)	OLF	
Greater Bird's-foot-trefoil (Lotus pedunculatus)	LO	
Meadowsweet (Filipendula ulmaria)	O	
Silverweed (Potentilla anserina)	O	
Perennial Rye-grass (Lolium perenne)	O-F	
Himalayan Balsam (Impatiens glandulifera)	VLO	On the embankment top

Himalayan Balsam (Impatiens glandulifera) is also patchy along both sides of the embankment, probably amounting to around 20% of the section length.

TN 3 – all these hedges and small scrub areas now cleared and tilled.

TN 4 – this bridge is 200 cm wide

TN 5 – 7 x year 2 Giant Hogweed (Heracleum mantegazzianum) in a small patch with about 30-40 year 1 seedlings beside a section of track gated and marked as private. A further single year 2 planted noted at the trackside further towards the road.

Section C – The track past the development site is 4m wide and used frequently by agricultural vehicles. A few semi-mature Common Alder (Alnus glutinosa) and Rusty Willow (Salix cinerea subsp oleifolia) in the hedge to the LHS, but mainly tall, now pollarded Hawthorn (Crataegus monogyna).

Section D – This leads across recently tilled soil past recently grubbed up hedges and recently re-profiled ditches to the levee alongside the Burnfoot River. The former railway halt building was considered to have bat roosting potential.

Section E – The route into Burnfoot initially crosses recently tilled fields of no ecological interest, until it arrives at a former track, now filled to the negative with dense Bramble (Rubus fruticosus agg.).

The hedges at the track sides are 4.1 m apart and now mainly tall Hawthorn (Crataegus monogyna) with Sycamore (Acer pseudoplatanus) to 35 cm dbh and Ash (Fraxinus excelsior) to 30 cm dbh to either side. Where the Bramble cover allows, the shaded track with species-poor Common Ivy (Hedera helix) and Ground-elder (Aegopodium podagraria) developing over a weedy Creeping Bent (Agrostis stolonifera) and Creeping Buttercup (Ranunculus repens) grassland with patches of Montbretia (Crocosmia x crocosmiiflora). No signs of Badger access or sett excavation.

Section F – The Carnashanagh Road is 4.3 to 4.4 m wide, often with a ditch to one or both sides, and sloping up the RHS. All vegetation has been cleared from the LHS where the boundary is a fence.

@ F1 – The RHS with occasional mature and early-mature Common Alder (Alnus glutinosa) but these on the opposite side of a steep a deep sheugh.

@ F2 – below this property a steep bank of young Common Alder (Alnus glutinosa) emerging from Bramble (Rubus fruticosus agg.). Would not be impacted by a Greenway on the road.

Section G – Between the Carnashanagh road and the Burnfoot River a narrow section has been cleared of all structural vegetation and partly infilled – a new low levee seems to be being created alongside the river.

At the time of the survey it was incomplete, soft in places, dissected by numerous small drains and obviously not driven over.

To gain this side of the Burnfoot River from Section D would require a bridge crossing. It is likely that infilling will continue long this section and that the relict patches semi-natural wet grassland will be lost to Rye-grass.

@ G:1 the widest area includes relict areas of GS:4 Wet grassland dominated by Creeping Bent (Agrostis stolonifera) and with:

Reed Canary-grass (Phalaris arundinacea)
Soft-rush (Juncus effusus)
Creeping Buttercup (Ranunculus repens)
Hemlock Water-dropwort (Oenanthe crocata)
Marsh-marigold (Caltha palustris)
Meadowsweet (Filipendula ulmaria)

This with regular open drains across the narrow field and opening into the river.

@ G:2 the narrower sections are largely disturbed, with indications of a similar wet grassland in some places and in others of GS2 Dry meadows and grassy verges formerly dominated by False Oat-grass (Arrhenatherum elatius) and Common Nettle (Urtica dioica).

TN 6 – roadside signs indicate Japanese Knotweed (Fallopia japonica) here, but none was seen. It is present in small quantity on the verge between here and Burnfoot.

Tree table Map 2.3

No.	Spp.	DBH cm	BRRG	Condition/notes
1	Ash (Fraxinus excelsior)	46	0	1.3 m from the road
2	4 x Common Alder (Alnus glutinosa)	To 23	2	All multi-stemmed and Ivy-clad. On the LHS verge between the ditch and the road.

Map 2.4

The Purple Route along the R238 section has been surveyed to scoping detail. Generally low potential ecological impact. Some pinch points present practical problems.

TN1 – Road being widened into the verge

Section A - The route proposed to be on the LHS. Narrow (1.6m) weedy verge drops sharply from the road level the adjacent fence with Bramble (Rubus fruticosus agg.) frequent, and rare Hawthorn (Crataegus monogyna). Need to protect the adjacent watercourse from inputs during construction.

Section B – Route to LHS, where there is a wider verge of False Oat-grass (Arrhenatherum elatius) and Common Nettle (Urtica dioica) with signs of occasional dumping and small and widely spaced patches of Japanese Knotweed.

Still with a bank down to the adjacent fence, now with patches of young to semi-mature Rusty Willow (Salix cinerea) at the edges and occasional individuals or small stands of semi-mature Sycamore (Acer pseudoplatanus), Common Alder (Alnus glutinosa) and rare Downy Birch (Betula pubescens) that could suffer root damage, although the adjacent roadside reservation is 3m wide and could be used. Bulky patches of Bramble (Rubus fruticosus agg.) scrub at the rear of the verge.

TN2 – the adjacent yond woodland occupies most of the sloping verge.

Section C – same roadside reservation and False Oat-grass (Arrhenatherum elatius)/Common Nettle (Urtica dioica) verge, but here leading over an embankment set around 1.5 m back from the roadside. Scattered Willow and semi-mature Common Alder (Alnus glutinosa) remain patchily frequent, rooted on the field side of the embankment but increasingly replaced by large Hawthorn (Crataegus monogyna) towards the factory.

Section D – Passes the factory complex with a pavement in a wide amenity grass verge with scattered street trees.

Section E – Pavement and amenity grass verge in front of Grianan Park is only around 2m wide. At the end of the village there is a bad pinch point on a dangerous bend. No ecological issues apparent.

Section F – Short section to the Carnashanagh Road. LHS is a steep narrow embankment of Yorkshire-fog (Holcus lanatus) and False Oat-grass (Arrhenatherum elatius) before a low hedge of Bramble (Rubus fruticosus agg.) and Hawthorn (Crataegus monogyna) with a dry ditch. No roadside reservation here.

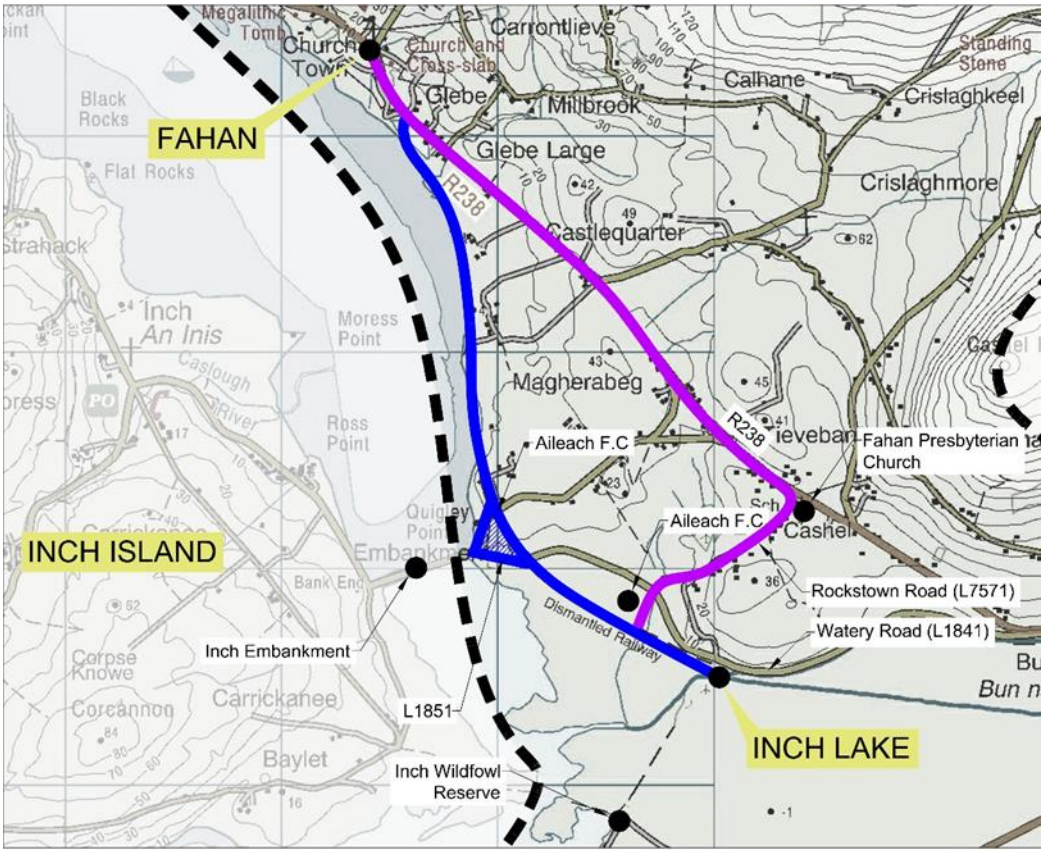
Section 3

Note – Section 3 as described in this report refers to the Blue & Purple route corridors proposed in the Constraints Study and Route Options Report.

This Blue corridor starts at the intersection of the Skeoge and Burnfoot rivers at Inch Lake and generally follows along the line of the old railway line to the R238, where it rejoins the purple corridor, as shown in Map 3.1.

The Purple Corridor diverges from the Blue Corridor at An Aileach F.C where it travels North along a watercourse and the Rockstown Road as far as the R238. The corridor continues along the R238 to Fahan as shown in Map 3.1.

A More detailed description of the Route Corridors can be found in the Stage 2 Preferred Route Corridor Selection Report



Map 3.1

Map 3.2 shows the Blue and Purple Corridors, excluding the purple section along the R238, to a point just before the routes re-join. The rest of the Route Corridors are shown in Map 4.2


9
8
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11b
11c
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Map 3.2

Map 3.2

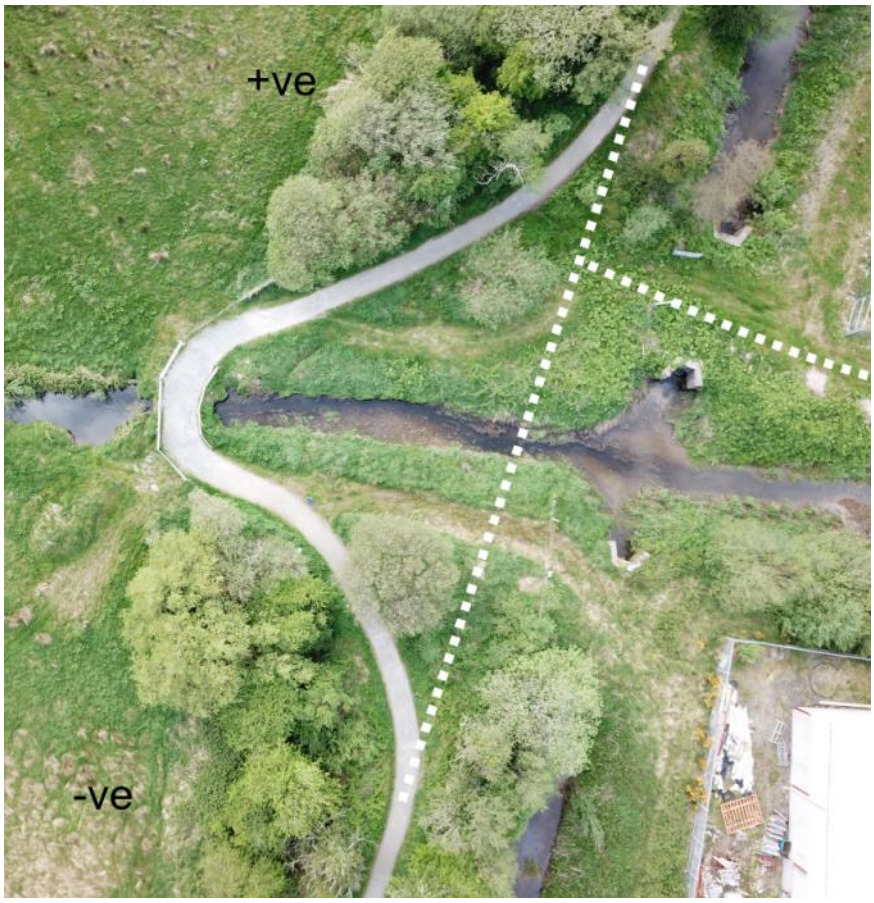
Section 1 – The proposed route follows the existing 2.4m wide path as it runs on low embankment through linear woodland. At t4, 3 x Common Alder (Alnus glutinosa) with stems to 237 cm occur, one at the trackside is opposite another that is 0.8 m from the track leaving a 3.5 m width between the trees, which can be retained, but won't escape root damage. Otherwise semi-mature + trees, and large tree-like Hawthorn (Crataegus monogyna) are set well-back from the path and won't be damaged, although in places, young Common Alder (Alnus glutinosa) and Rusty Willow (Salix cinerea subsp oleifolia) crowd along the pathside to the LHS.

TN 1 - The path here crosses an old railway bridge with 3.3 m between the railings, but only 2.6 m between the kerbs

TN 2 – Himalayan Balsam (Impatiens glandulifera) is abundant all around the picnic area and locally frequent on both side of the path to the positive of the gate for some 35m. It ends in a large patch on the wooded bank to the RHS with Ramsons (Allium ursinum) but and scarcely present on the LHS, (the more extensive woodland). There is a clear Badger crossing point here but no potential sett entrances close to the path.

Section 2 – Scattered trees in the scattered pathside scrub, but none anywhere close to the existing path.

TN 3 – the culvert here is 3-3 m wide between the wooden rail fences. The current path veers sharply to the left, probably to access the pre-existing culvert. The possibility of straightening the path here and therefore constructing a new culvert is being considered.



On the –ve side the new route would pass a multi-stemmed and spreading Rusty Willow (Salix cinerea subsp oleifolia) with stems to 24 cm dbh – this would be damaged or lost.

This areas with scattered saplings/scrub of:

Common Alder (Alnus glutinosa)	F
Rusty Willow (Salix cinerea subsp oleifolia)	F
Osier (Salix viminalis)	R
Gorse (Ulex europaeus)	O
Bramble (Rubus fruticosus agg.)	LA

In weedy grassland of:

Yorkshire-fog (Holcus lanatus)	A
Rough Meadow-grass (Poa trivialis)	F
False Oat-grass (Arrhenatherum elatius)	A
Cleavers (Galium aparine)	OLF
Broad-leaved Dock (Rumex obtusifolius)	F
Broad-leaved Willowherb (Epilobium montanum)	O
Creeping Thistle (Cirsium arvense)	OLF
Colt's-foot (Tussilago farfara)	R
Common Nettle (Urtica dioica)	O
Cock's-foot (Dactylis glomerata)	O

Hedge Woundwort (Stachys sylvatica)	OLF
Creeping Bent (Agrostis stolonifera)	F
Bush Vetch (Vicia sepium)	O

The ditch crossing is 2.9 m wide and 60 cm deep. With deep soft algal sediments.

Unbranched Bur-reed (Sparganium emersum)	O
Broad-leaved Pondweed (Potamogeton natans)	OLF
Bulrush (Typha latifolia)	FLA

This ditch is not sensitive to soil ingress.

On the +ve side, the grassland is similar with a large but young Crack Willow (Salix fragilis) that can be missed. Scattered saplings of Osier (Salix viminalis) (and Osier (Salix viminalis) hybrids) and patchy Butterbur (Petasites hybridus).

Apart from straightening the track, there would be a benefit that the path users crossing the existing culvert are currently conspicuous the from the adjacent GS:4 wet grassland. A dog being walked was noted running loose in the adjacent field had gained access via the gate here.

Section 3 - both sides with dull verges and scattered trees/shrubs behind.

Yorkshire-fog (Holcus lanatus)	F-A
False Oat-grass (Arrhenatherum elatius)	O
Rough Meadow-grass (Poa trivialis)	FLA
Bramble (Rubus fruticosus agg.)	FLA
Broad-leaved Dock (Rumex obtusifolius)	F
Hogweed (Heracleum sphondylium)	F
Creeping Buttercup (Ranunculus repens)	F
Raspberry (Rubus idaeus)	LO
Cow Parsley (Anthriscus sylvestris)	LO
Wood Avens (Geum urbanum)	R

Mainly on the RHS there are lots of Ivy-clad semi-mature to mature Common Alder (Alnus glutinosa). Mainly 1.8m + away from the existing path. A few that are closer were inventoried.

Section 4 – The 2m wide path on the Swilly side here veers to the left off the former railway embankment and is open to prime GS:4 wet grassland bird habitat. The verges remain dull.

TN 4 - The existing culvert with a 3.2m gap between wooden rail fences.

Section 5 – The current path runs on the Swilly side of the former railway embankment. It is 2.1m wide with dull verges of Yorkshire-fog (Holcus lanatus), Creeping Buttercup (Ranunculus repens), Rough Meadow-grass (Poa trivialis) and Common Nettle (Urtica dioica). The path route itself is slightly embanked above a WN:6 carr woodland of young Rusty Willow (Salix cinerea subsp

oleifolia) and Common Alder (Alnus glutinosa) over Creeping Bent (Agrostis stolonifera) with Yellow Iris (Iris pseudacorus), Water Horsetail (Equisetum fluviatile) etc… Further towards the +ve, the verges are more diverse with e.g.:

Cow Parsley (Anthriscus sylvestris)
Bush Vetch (Vicia sepium)
Meadow Vetchling (Lathyrus pratensis)
Opposite-leaved G'-saxifrage (Chrysosplenium oppositifolium) LF
Hemlock Water-dropwort (Oenanthe crocata)
Hogweed (Heracleum sphondylium)
Meadowsweet (Filipendula ulmaria)
Wild Angelica (Angelica sylvestris)
Soft-rush (Juncus effusus)

TN 5 – There is an active heronry here located in European Larch (Larix decidua) trees to the RHS on the former railway embankment and isolated from the current path by willow scrub.

TN 6 – The path continues with wet woodland to the LHS. TN 6 is the start of patchy Salmonberry (Rubus spectabilis) in the wood extending to the pathside in one place.

TN 7 – A small ruderal kerbside area which formerly included a large Japanese Knotweed (Fallopia japonica) patch which appears to have been treated, reducing it currently to a just 4 regenerating ramets scattered over a wide area. The 'waste ground' now covered with dark root barrier membrane and the area now recovering a weedy ruderal vegetation of Creeping Bent (Agrostis stolonifera), hole, Common Couch (Elytrigia repens) and Common Ragwort (Senecio jacobaea), with patches of abundant Common Alder (Alnus glutinosa) saplings.

Section 6 – Here the route is within a ± 2 lane road with banks of False Oat-grass (Arrhenatherum elatius), Red Fescue (Festuca rubra) and Cow Parsley (Anthriscus sylvestris) to either side, with low, clipped Hawthorn (Crataegus monogyna) hedges (a little flailed Rusty Willow (Salix cinerea subsp oleifolia)). The proposal to install street lighting here will presumably have little impact on bats.

TN8 – Substantial stands of Japanese Knotweed (Fallopia japonica) at the end of the former railway where it is crossed by the road. Mainly starting 2m or so from the roadside wall, but also some smaller crowns on the verge in front of the wall opposite a potential greenway turning.

Section 7 – Here the former railway is not embanked. It is flanked by a shared private driveway to the RHS and a private driveway to a single dwelling to the RHS.

The railway is now a linear overgrown WS:1 scrub of Hawthorn (Crataegus monogyna) with coarse grasses Common Nettle (Urtica dioica) and Cow Parsley (Anthriscus sylvestris). Mature Common Alder (Alnus glutinosa) occur on the boundary to the RHS of the shared boundary, but no significant tree losses would be incurred on the railway route. The railway route here is potentially owned by the dwelling to the LHS – it is not fenced off from their property.

Badger foraging tracks were followed into the scrub from the shared drive to the north, none led to setts.

TN9 - Least impact here would be to adopt the private shared driveway to the right of the railway. This 3.9 m wide. Where it turns sharply towards the dwellings, it is adjacent to the end of a private garden in a stand of Portugal Laurel (Prunus lusitanica), so the route would have to kink back on to the railway before the end of the driveway.

Section 8 – This was not accessed as negotiations with the land-owners were not complete at the time of the survey. From as far as could be seen, and with reference to satellite imagery it appears to be a route with low ecological impacts. Beyond the TN9 properties it is already used as an access along much of the route.

Section 9 – GA:1 Improved agricultural grassland.

Section 10 – There is a seldom used track between the football pitches and the stream that links via a wide culvert to the existing pathway along the Swilly side.

The track is well-elevated above the stream level (1.8m at the road side). The stream flows between steep banks. The worn track is species-poor and grassy with Creeping Bent (Agrostis stolonifera), Floating Sweet-grass (Glyceria fluitans) and Marsh Foxtail (Alopecurus geniculatus), so with impeded drainage. No signs of Otter using the stream here.

TN10 – there are small dene patches of Field Horsetail (Equisetum arvense) along the track. Installing a path over these risks damage to the path structure – Horestails can heave hard surfaces.

TN11 – Himalayan Balsam (Impatiens glandulifera) occurs in patchy abundance along the streamside, especially at the roadside end, but has only ascended to the bank top in a couple of places where it remains as yet sparse.

Section 11 – Along Rockstown Road towards R238.

@11 a – initially the road runs alongside the stream, with and embankment at the roadside comprising mature Hawthorn (Crataegus monogyna) and semi-mature Ash (Fraxinus excelsior) (plus tree 12).

@ 11b – various garden and field boundaries of low ecological value. But with a group of trees both sides of the road at tree 13.

TN 12 – Roadside Japanese Knotweed (Fallopia japonica) on the LHS just before the curtilage around the caravan, in which Knotweed is widespread in large patches.

@ 11c – Wider road section with a pavement to the LHS, but as it passes McLaughlin's Cars. This is extensively used for parking.

Tree table Map 3.2

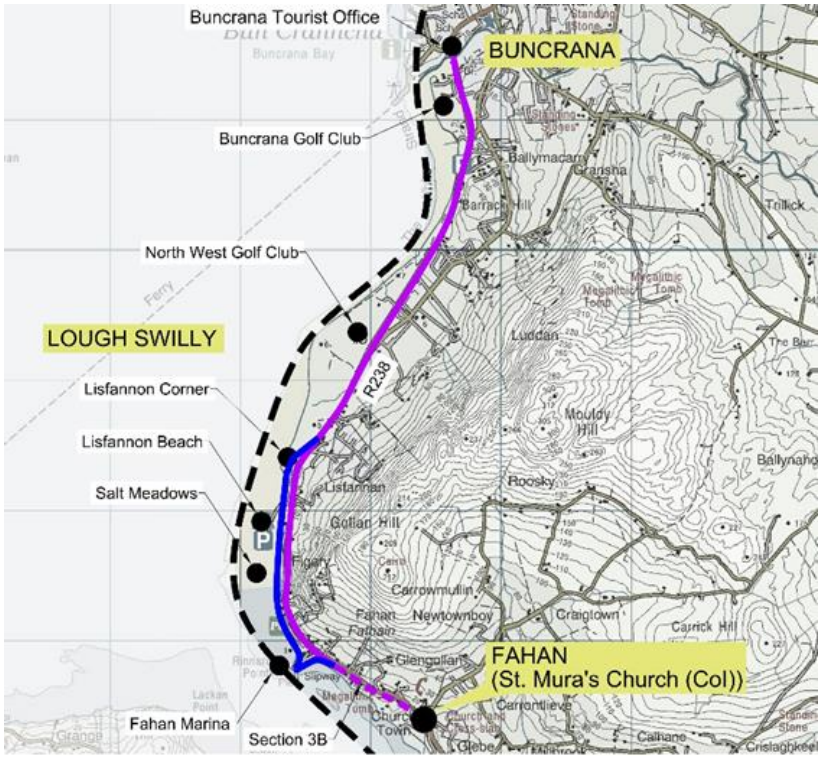
No.	Spp.	DBH cm	BRRG	Condition/notes
1	Common Alder (Alnus glutinosa)	26	2	0.1m from path edge
2	Common Alder (Alnus glutinosa)	43	2	o-2 m from path edge
3	Ash (Fraxinus excelsior)	39	0	0.2m from path – curving away from it.
4	3 x Common Alder (Alnus glutinosa)	To 37	2	Close to path
5	Common Alder (Alnus glutinosa)	26	2	1.2m from the path
6	Common Alder (Alnus glutinosa)	30	2	1.1 m from path
7	Common Alder (Alnus glutinosa)	32	2	1.1m from path
8	Common Alder (Alnus glutinosa)	31	2	Low-break. 0.8m from path
9	Common Alder (Alnus glutinosa)	28	1	Upper embankment level 0.8m from path
10	Ash (Fraxinus excelsior) Common Alder (Alnus glutinosa) Common Alder (Alnus glutinosa) Common Alder (Alnus glutinosa)	21 19 14 To 18	0 0 0 1	1.2m from path 0.7m from path 0.8m from path 0.7m from path, 3-stems, poor condition
11	Crack Willow (Salix fragilis)	To 34	2	1.4 m from path, 1 stem removed from path
12	Ash (Fraxinus excelsior)	67	2	0.8m from road surface
13	Ash (Fraxinus excelsior)	To 26	2	Large coppice 0.7 m from road surface
14	3 x Ash (Fraxinus excelsior) to RHS 9 x Ash (Fraxinus excelsior) to LHS	To 40 cm	2	All < 100 cm from the road. 1 on RHS and 2 on LHS in BRR 2

Section 4

The Purple Corridor starts at the access road to Fahan Marina and continues to follow the route of the R238 through Fahan, Lisfannon, and onto to Buncrana where Route 1 terminates.

The Blue Corridor starts at the access road to Fahan Marina and follows the access road to the Fahan Marina / Rinnaraw Point area, where it joins the alignment of the old railway line and continues north parallel, but at a lower level to, the R238 where it re-joins the Purple Corridor at Lisfannon Beach.

A More detailed description of the Route Corridors can be found in the Stage 2 Preferred Route Corridor Selection Report



Map 4.1

Map 4.2 covers the later area of Section 3 and the Blue and Purple corridors between Fahan Marina and Salt Meadows.

Map 4.3 covers the Blue and Purple corridors between Salt Meadows and the North West Golf Club.

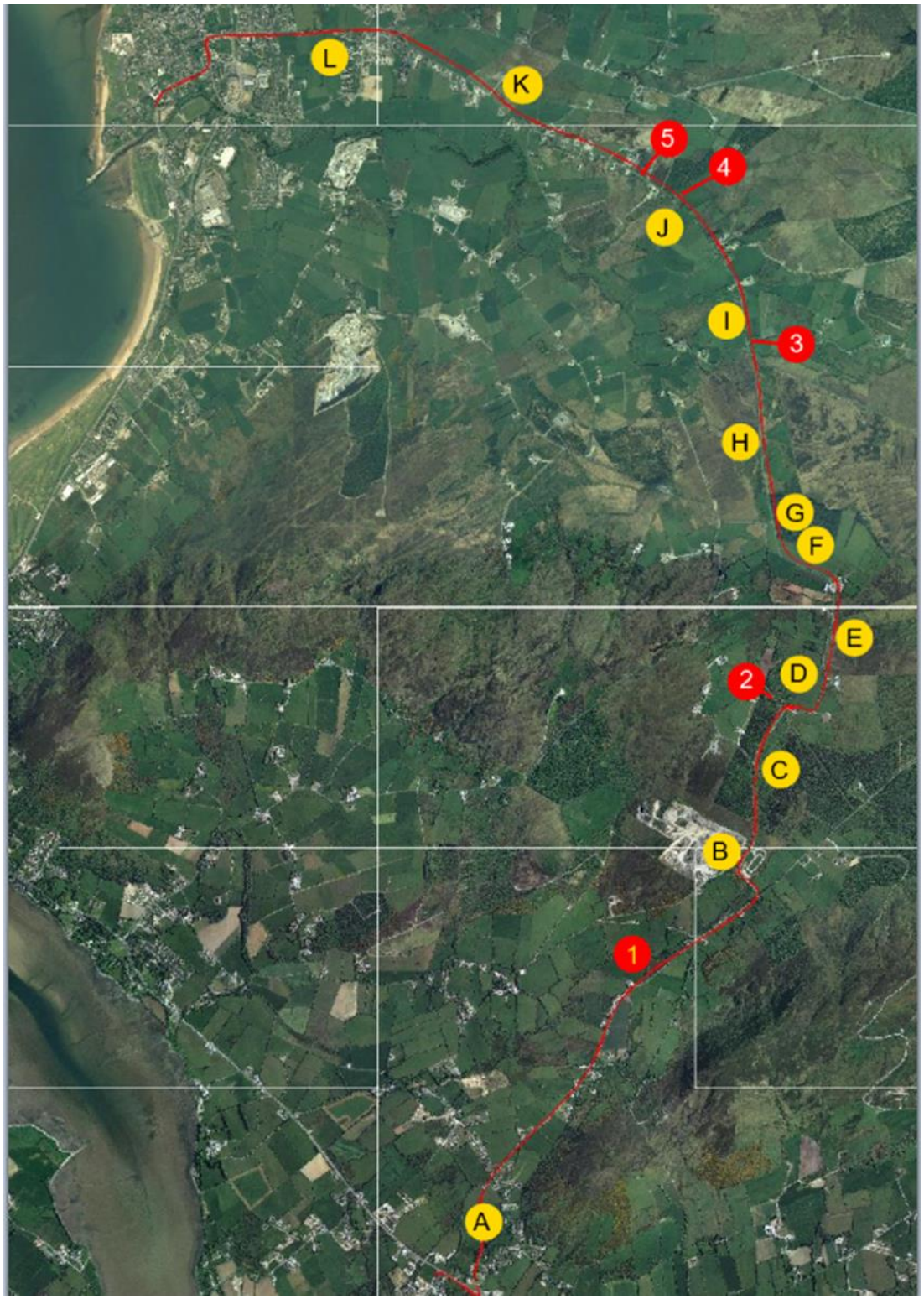
Map 4.4 covers the Purple Corridor from the North West Golf Club to Buncrana Town Centre.

Map 4.5 cover the Red (Tullydish) Option.

Map 4.2

Map 4.3

Map 4.4



Map 4.5 Red (Tullydish) Option

Map 4.2

Section A – GA:1 Improved agricultural grassland in a 12 – 16 m wide strip along the former railway route**.**

TN 1 – the route crosses a stone culvert 1.5 m below field level.

Section B – the proposed route crosses a cattle grazed field to reach the Buncrana Road. This under GA:1 poor semi-improved grassland of Perennial Rye-grass (Lolium perenne), Yorkshire-fog (Holcus lanatus), Creeping Bent (Agrostis stolonifera) and with rare patches of Soft-rush (Juncus effusus).

The field runs alongside a stream at a level 1.6m above the water. The banks are steep and formed of soil with patches of Hawthorn (Crataegus monogyna), Snowberry (Symphoricarpos albus), Bramble (Rubus fruticosus agg.) and Gorse (Ulex europaeus), but with larger trees and shrubs all on the opposite side where they are continuous. Away from the scrub. The banks are eroding in places, and include a couple of cattle-drinks. Selecting this route would probably mean provision of alternative cattle drinking troughs and planting the streamside to stabilise the banks.

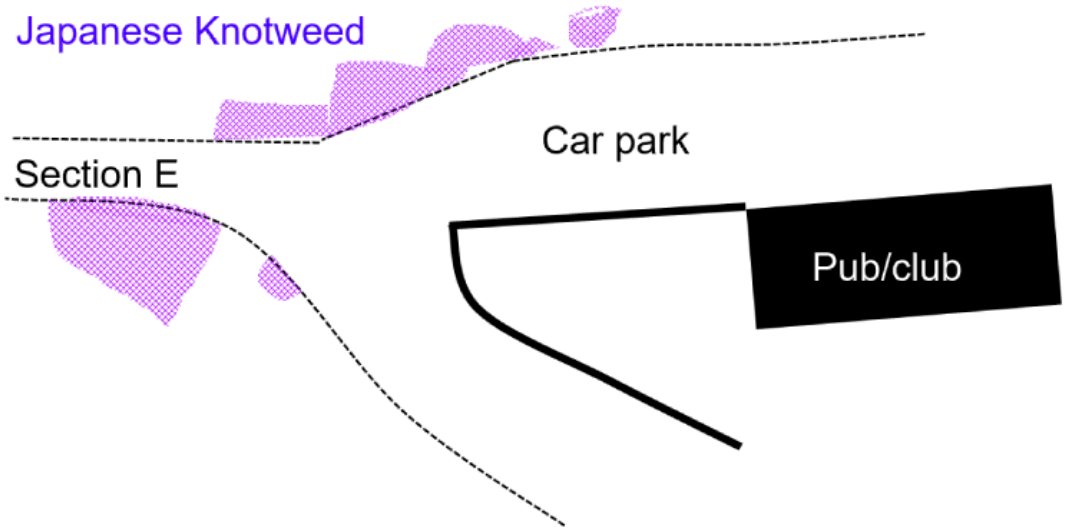
Section C – Pavement and reseeded verges run alongside the Buncrana Road. At C1 it passes an impoundment with tall shrubs and trees, and at C2 it passes a mature plantation. If greenway lighting is required for this section, it is not considered that lighting will have a high impact on bat foraging, however the lighting design should avoid light fall along the structural vegetation edge.

TN 2 – The quickest way back to the coastal railway route is via the private and gated access to the new flat complex. At TN 2 there is a rockery installed as a part of the landscaping for the flats in front of a Paladin security fence.

Section D – a single track running along the shore here passes seven static caravans in front of a low sea cliff. The door of the first of the caravans opens out onto the track, there is a little more room past the subsequent caravans. It then passes some weedy gravel/hardcore used as a dingy park by Lough Swilly YC and beside their slipway.

TN 3 – One route under consideration passes over this railway bridge, and another passes under it.

TN4 – the rear carpark of the Railway Tavern runs below a wooded bank, to the positive side, this with patchy Japanese Knotweed (Fallopia japonica) to the car park edge. The stand stretches for 45m from where it starts on the RHS of the car park, to the start of Section E where it occupies both sides of the track



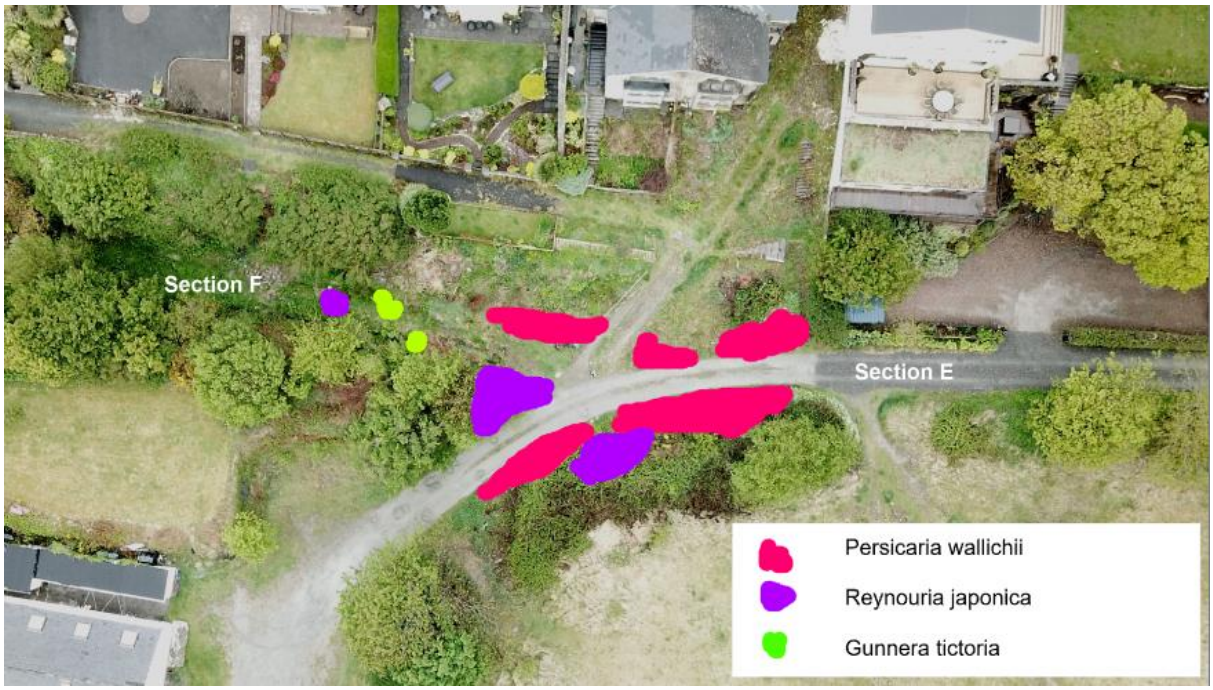
Section E – The wider hard surfaces around the front of the commercial premises here become a track, following the old railway and now leading to a single dwelling and to the rear of the houses alongside Railway Road.

It is 3.5 m wide initially below steep WD:1 woodland to the RHS and a narrow embankment with a few trees to the LHS.

Verges are diverse in structure and composition, with:

Winter Heliotrope (Petasites fragrans)	ALD
Herb-Robert (Geranium robertianum)	OLF
Honeysuckle (Lonicera periclymenum)	LO
Bramble (Rubus fruticosus agg.)	OLF
Creeping Buttercup (Ranunculus repens)	LF
Montbretia (Crocosmia x crocosmiiflora)	VLA
Common Nettle (Urtica dioica)	O
Hogweed (Heracleum sphondylium)	O
Common Ivy (Hedera helix)	LF
Rosebay Willowherb (Chamerion angustifolium)	LF
Rough Meadow-grass (Poa trivialis)	LF
Yorkshire-fog (Holcus lanatus)	OLA
Great Willowherb (Epilobium hirsutum)	LF
Ground-elder (Aegopodium podagraria)	VLA
Himalayan Honeysuckle (Leycesteria formosa)	LF
Cleavers (Galium aparine)	VLF
Bracken (Pteridium aquilinum)	O
Spear thistle (Cirsium vulgare)	R

TN 5 – At the junction between Sections E and F there are three species that are listed in Schedule 3 of the European Communities (Birds and Natural Habitats) Regulations 2011, growing in close proximity to each other (as mapped):



Section F – The old railway continues here as a scarcely-used track in a cutting. A lot of garden species occur both on the cutting sides (mainly Brambles) and the track surface, which is a weedy Creeping Bent (Agrostis stolonifera) and Creeping Buttercup (Ranunculus repens) with e,g,:

Green Alkanet (Pentaglottis sempervirens)
Montbretia (Crocosmia x crocosmiiflora)
Pendulous Sedge (Carex pendula)
Winter Heliotrope (Petasites fragrans)
Elephant's Ears (Bergenia cordifolia)

The route is crossed by a footbridge, with two more Giant-rhubarb (Gunnera tinctoria) below it, and beyond, the track is more like a tended garden, with e.g.:

Broom (Cytisus cv)	Garden cv
Bamboos	Various spp.
Pampas-grass (Cortaderia selloana)	
Hydrangea (Hydrangea macrophylla)	
Photinia (Photinia cv)	
New Zealand Flax (Phormium tenax)	

But still in the weedy Creeping Bent and Winter Heliotrope grassland with Brambly cuttings.

TN 6 – Here the route is crossed by a small stream that runs between the Railway Road houses. Beyond the stream the former railway line is no longer discernible.

Section G – the terrain drops towards a rocky bluff via a steep bank of Bramble (Rubus fruticosus agg.), Winter Heliotrope (Petasites fragrans) Fuchsia (Fuchsia magellanica), and Gorse (Ulex europaeus). At the base of the slope is a zone of False Oat-grass (Arrhenatherum elatius) along

with patches of damp Yorkshire-fog (Holcus lanatus), Reed Canary-grass (Phalaris arundinacea), Hemlock Water-dropwort (Oenanthe crocata), Great Willowherb (Epilobium hirsutum) which is absent beyond the bluff, and transitions into CM:2 Saltmarsh. These species indicative of eutrophication.

Although the sides of the bluff include Red Fescue (Festuca rubra)/halophyte grassland of interest, e.g. with Buck's-horn Plantain (Plantago coronopus), Mouse-ear-hawkweed (Pilosella officinarum), Red Valerian (Centranthus ruber), Common Bird's-foot-trefoil (Lotus corniculatus), Devil's-bit Scabious (Succisa pratensis) etc. of ecological value, the top of the rocky bluff is similar to the Section G start, with Bramble (Rubus fruticosus agg.), Rosebay Willowherb (Chamerion angustifolium) and Winter Heliotrope (Petasites fragrans) all dominant in patches.

Section H – One option (purple route) is along the main roadside, but as this is a busy and fast road, this is not an attractive option. The alternative route option (blue route) continues along the bottom of the road embankment, adjacent to the saltmarsh. The alignment and design in this location would be agreed at detailed design stage and ongoing consultations with NPWS will be held. Any potential impacts on the saltmarsh would be considered through the EIA process.

@ H1 – For the main part, CM:2 saltmarsh of Red Fescue (Festuca rubra), Sea Plantain (Plantago maritima), Reed Sweet-grass (Glyceria maxima), Common Scurvygrass (Cochlearia officinalis agg) etc, extends to the armoured base of the slope along the shoreline which leads directly up to the R 238 Railway Road. The rock armour slopes at 40° for 2.75 m up from the base, the remainder slopes at around 30° to the road-side.

Immediately beyond the last houses, much of the slope is occupied by dense Snowberry (Symphoricarpos albus) with a large patch of Giant-rhubarb (Gunnera tinctoria) on the lower bank, which gives way to Bramble (Rubus fruticosus agg.) before the first, and one of the largest patches of Japanese Knotweed (Fallopia japonica) along section H.

The entire bank with much Bramble (Rubus fruticosus agg.) and numerous wide patches of dense Winter Heliotrope (Petasites fragrans) which together are the matrix in which are established patches of New Zealand Holly (Olearia macrodonta) (mainly upper bank, Japanese Knotweed (Fallopia japonica) (mainly mid-bank), scattered sapling Sycamore (Acer pseudoplatanus), rare Goat Willow (Salix caprea), Montbretia (Crocosmia x crocosmiiflora), Red Valerian (Centranthus ruber) (mainly along the top of the rock armour) and from the start of the creek, patches of Hawthorn (Crataegus monogyna) and Rusty Willow (Salix cinerea subsp oleifolia) in the scrub mix as well.

@ H 2 – With distance to the positive (towards Buncrana) the height of the bank declines and the slope lessens, the degree of cutting that would be required reduces. The adjacent saltmarsh above the creek starts an extended and ecologically valuable transition to paramaritime/fresh-water marsh (GM:1) increasingly with raised sand hills of Red Fescue (Festuca rubra) and occasionally Marram (Ammophila arenaria), as well as lower hollows with Puccinellia maritima mixed with the Red Fescue, and small pools with Sea Club-rush (Bolboschoenus maritimus) and Grey Club-rush (Schoenoplectus tabernaemontani). And with increasing freshwater influence, Common Spike-rush (Eleocharis palustris), Marsh-bedstraw (Galium palustre), Water Mint (Mentha aquatica),

Hemlock Water-dropwort (Oenanthe crocata), Gipsywort (Lycopus europaeus), Cuckooflower (Cardamine pratensis), Marsh-marigold (Caltha palustris), with saplings of Common Alder (Alnus glutinosa) and Rusty Willow (Salix cinerea subsp oleifolia). etc. This is an area of high ecological value which will require mitigation.

On the bank itself, Blackthorn (Prunus spinosa) and Fuchsia (Fuchsia magellanica) are recruited, and Winter Heliotrope (Petasites fragrans) declines (though not Bramble (Rubus fruticosus agg.) to be replaced by False Oat-grass (Arrhenatherum elatius), with Tall Fescue (Schedonorus arundinaceus) along the lower bank.

Tree table Map 4.2

No.	Spp.	DBH cm	BRRG	Condition/notes
1	Sycamore (Acer pseudoplatanus)	38	0	1.1 m from the track

Map 4.3

Section A – A continuation of the bank down from the R238 but here a relatively low profile, but still with slopes varying from 20 to 40° Selected on the indicative route drawings as a cycle rest/repair station.

The vegetation of GS:2 grassland and patchy WS:1 scrub continues, dominated by False Oat-grass (Arrhenatherum elatius) and Bramble (Rubus fruticosus agg.), still with a high representation of non-native herbs, with patches of Ground-elder (Aegopodium podagraria), Winter Heliotrope (Petasites fragrans) and Montbretia (Crocosmia x crocosmiiflora). Scattered small Hawthorn (Crataegus monogyna) and Garden Privet (Ligustrum ovalifolium), with saplings of Sycamore (Acer pseudoplatanus),

Section B – Here the banks from the road to the shore is once again sloping at 40°, and once again dominated largely by Winter Heliotrope (Petasites fragrans) and Bramble (Rubus fruticosus agg.), but not as tall as the banks to the –ve and with a ready-formed ledge, at the alignment of the old railway line.

No rock armour. The lower 2.7 m of the bank is dominated by Red Fescue (Festuca rubra) and Marram (Ammophila arenaria) although not organised into dunes.

Patches of False Oat-grass (Arrhenatherum elatius) and in places this mixed with Red Fescue (Festuca rubra) along the mid bank and ledge. Before the obligatory return to the R238, there is a dense scrub area of Fuchsia (Fuchsia magellanica), mixed with Bramble (Rubus fruticosus agg.) and saplings of Ash (Fraxinus excelsior).

Section C – The verge alongside the North-West Golf Course

@ C1 This is sloping at around 33° becoming less tall towards the positive. Dominated by False Oat-grass (Arrhenatherum elatius) and Common Nettle (Urtica dioica) with Cleavers (Galium aparine) and small patches of Bracken (Pteridium aquilinum). There is a recently planted hedge of Hawthorn (Crataegus monogyna) set back around 1m from the road edge.

@ C2 Where C2 is indicated, the recently planted hedge stops at a seldom used track down the bank onto the golf course. To the positive of the golf course track, the bank down to the course becomes much less tall and steep, and levels out completely opposite Duffy Motors.

@ C3 - Beyond Duffy motors there is a fence and species-poor Hawthorn hedge along the NW Golf Course boundary. Running immediately alongside the hedge is a wide, dry ditch filled with Bramble (Rubus fruticosus agg.) and False Oat-grass (Arrhenatherum elatius) vegetation, and just scattered occasional Gorse (Ulex europaeus) Elder (Sambucus nigra) and Hawthorn (Crataegus monogyna), assumed to be the former railway. It is around 3m wide x 1.2 m deep, making the total verge width, including the dry ditch is around 5.5m

Between the ditch and the hard shoulder a low embankment is dominated by False Oat-grass (Arrhenatherum elatius), and to the positive, increasingly joined by Red Fescue (Festuca rubra).

Overhanging trees may need lopped, as would the hedge if the ditch were adopted for the greenway.

There were no signs of Badger across this boundary.

Tree table Map 4.3

No.	Spp.	DBH cm	BRRG	Condition/notes
1	Ash (Fraxinus excelsior)	33	1	Leaning towards the road
2	Ash (Fraxinus excelsior)	26	0	
3	Sycamore (Acer pseudoplatanus)	To 56	1	2-stems

Map 4.4

Section A – There is a tall Hawthorn (Crataegus monogyna) WL:1 hedge along the NW Golf Club boundary, alongside which runs a wide dry ditch, possibly the former railway. This with around 50 semi-mature to early mature Ash (Fraxinus excelsior) constant along this section, generally with stem diameters around 20 cm.

If the ditch is adopted as the path, then many trees would require branches overhanging the route to be lopped, but only a single young tree would need to be removed.

Vegetation in the dry ditch and over much of the rest of the verge is dominated by False Oat-grass (Arrhenatherum elatius), Red Fescue (Festuca rubra), Yorkshire-fog (Holcus lanatus) and Bramble (Rubus fruticosus agg.).

Section B – The car park between the road and the Golf Club is divided into a closed off section, occasionally used as a traveller's halt, and a section which is in use as a car park.

@ B1 – The closed off section is adjacent to the same tall hedge as in Section A, but here also with mature Sycamore (Acer pseudoplatanus).

@B2 – The hedge alongside the carpark that is currently in use as the visitor's car park is flailed species-poor Hawthorn (Crataegus monogyna) without any trees. The car park terminated in a small area of gravelled landscaping before Section C.

Section C (Some parts within the Lough Swilly SAC) - Here base-rich GS:1 grassland is being invaded by Hawthorn. The grassland is generally of high ecological value and in places can be referred to the NVC's MC:9c Achillea millefolium sub-community of the MC:9 Festuca rubra-Holcus lanatus maritime grassland community, although in amongst the developing scrub, there tends to be areas of more species-poor Yorkshire-fog (Holcus lanatus). It is assumed that much of the adjacent golf links is a mown version of this grassland:

Red Fescue (Festuca rubra)	D
Ribwort Plantain (Plantago lanceolata)	F
Meadow Vetchling (Lathyrus pratensis)	F
Dandelion (Taraxacum officinale)	O-F
Smooth Meadow-grass (Poa pratensis agg)	OLF
Meadowsweet (Filipendula ulmaria)	OLF
Common Knapweed (Centaurea nigra)	OLF
Cock's-foot (Dactylis glomerata)	O
Common Sorrel (Rumex acetosa subsp acetosa)	O
Common Bird's-foot-trefoil (Lotus corniculatus)	O
Sweet Vernal-grass (Anthoxanthum odoratum)	O
Downy Oat-grass (Avenula pubescens)	LF
Sand Sedge (Carex arenaria)	LO
Lady's Bedstraw (Galium verum)	LO
Hogweed (Heracleum sphondylium)	R
Glaucous Sedge (Carex flacca)	R

The Hawthorn (Crataegus monogyna) that threaten this habitat are widespread and patchy, and currently mainly in the 0.7 to 1.5 m height range.

The adjacent hedge alongside the Golf Club course is species-poor Hawthorn (Crataegus monogyna) with flailed occasional Sycamore (Acer pseudoplatanus).

Section D – There is an existing path used as a beach access that runs along the existing stream at the edge of the managed golf course. Beyond the golf course, the GS:1 grassland loses ecological interest, but remains unimproved, dominated by Red Fescue (Festuca rubra), with:

Smooth Meadow-grass (Poa pratensis agg)
Bush Vetch (Vicia sepium)
Creeping Thistle (Cirsium arvense)
Meadow Vetchling (Lathyrus pratensis)
Cock's-foot (Dactylis glomerata)

The verge becomes wide and level beyond the point opposite Tank Road, and is adopted by Buncrana Tidy Town committee.

Snow-in-summer (Cerastium tomentosum) is patchy in places along the verge edge.

Section E – there is an existing path used as a beach access along this stretch. It is 2.9 m wide and runs through species-poor CD:3 Marram (Ammophila arenaria)/Red Fescue (Festuca rubra) back-dunes.

This is separated from the verge by a sand bank with patchy Hawthorn (Crataegus monogyna) and Bramble (Rubus fruticosus agg.). To access the existing track the greenway would have to break through the sand bank opposite the Applegreen service station. Here a species-poor mix dominated by Bramble (Rubus fruticosus agg.) with Smooth Meadow-grass (Poa pratensis agg) and Bramble (Rubus fruticosus agg.) and GS:2 grassland rather than CD:2 fixed dune.

If this option is preferred, it would be necessary to re-join the main road or verge at the same point as the existing path to avoid fixed dunes.

Section F – The Carr Clós an Trá Bán car park

@ F1 – The car park has only a 1.2 m sloping verge and low rail fence down to the R238, here with the hard shoulder on the opposite side of the road.

@ F2 – The car park area extends back to species-poor CD:2 fixed dune with:

Red Fescue (Festuca rubra)	D
Meadow Vetchling (Lathyrus pratensis)	F
Cock's-foot (Dactylis glomerata)	R
Marram (Ammophila arenaria)	LO
Bush Vetch (Vicia sepium)	OLF

Smooth Meadow-grass (Poa pratensis agg) F
Downy Oat-grass (Avenula pubescens) LO

Not in good ecological condition (presumably because it is not Rabbit-grazed here) but part of the SAC dune system and unavailable to the greenway project. A route to the LHS of the car park would in any case be obstructed by a waste water pumping station, and would risk destabilising the sand ridge.

Section G – Beyond the car park, there is a pavement on the LHS, with a narrow mown sloping GA:2 verge up to the fixed dunes, which extend to the landscaping that has been established at the edge of Buncrana village.

Section H – Closely mown reseeded GA:2 grassland. The indicative route drawings allows for new landscaping which could be much more ecologically valuable.

Section I - Potentially available, a 3.6 m wide grass strip between and Escallonia hedge at the pavement side and a post and rail fence alongside Buncrana Golf Club's course.

Red Fescue (Festuca rubra)
Smooth Meadow-grass (Poa pratensis agg)
Sweet Vernal-grass (Anthoxanthum odoratum)
Nipplewort (Lapsana communis)
Downy Oat-grass (Avenula pubescens)

Section J – After the bridge, the pavement follows the left turn between the adjacent wall, and a linear landscaping bed of Wilson's Honeysuckle (Lonicera nitida) and Thunberg's Barberry (Berberis thunbergii) which would be lost. It continues beside gardens where the adjacent mature trees are not rooted at the same level as the pavement.

Map 4.5

It is understood that this route option would be considered as a shared surface for the entire length from Tooban on the R238 to Buncrana, thus limiting the risk of ecological impacts.

Section A – A single track road generally between two embankments, these sometimes narrow and steep, with a variety of different boundaries but mainly low flailed thorn hedges and fences. Low numbers of roadside Ash Trees, but these probably not impacted.

TN1 – Narrow roadside ditch immediately beside the metalled road surface. May need protection from inputs during construction. From here this is intermittent on the RHS as far as the left turn from Monreagh Park.

Section B – Wider, 2-lane road with weedy verges but no Japanese Knotweed.

Section C – Single track in forest. Sitka Spruce set back around 8m from the roadside, but in places they crown the roadside, and developing Rusty Willow (Salix cinerea) scrub in the forest break means this stretch may be sensitive to high level lighting.

Section D – Single track. Low banks generally with fences and only scattered Hawthorn (Crataegus monogyna).

TN2 – crosses stream on stone bridge. Pull-in beyond would be a low impact place to develop rest facilities.

Section E – Single track. Where is passes heath/grass semi-natural mosaic habitat it is on a fenced raised causeway.

Section F – Single track. Narrow sheugh to either side of the causeway, then fenced embankments and improved grass fields.

Section G – Tall conifers at the roadside – possible bat foraging and therefore sensitive to lighting.

Section H – Single track. Where is passes Heath/grass semi-natural mosaic habitat it is on a fenced raised causeway.

TN3 – Crosses river on 4.4 m wide stone bridge. The large patches of Japanese Knotweed at the river bank-side will not impact upon the construction.

Section I – continuous tree cover forms a semi-tunnel here – mainly young Ash but also an important mature tree, including Oak with roots that probably reach under the road. Potentiual for bat foraging and lighting design would need to consider this. Japanese Knotweed patches on opposite sides of the road here beside the roadside ruin but particularly extensive on RHS. No impact apart from roping off the verge during construction.

Section J – Single lane with embanked verges now generally with low hedges and scattered young trees, especially Ash (Fraxinus excelsior). More mature Common Alder (Alnus glutinosa), Beech (Fagus sylvatica) and Ash (Fraxinus excelsior) in places generally are rooted in the adjacent embankment and would not be impacted by the greenway. These trees are important and the design would have to be developed to minimise any potential impacts on these.

TN4 – Himalayan Balsam locally abundant at the roadside, and most likely spread from the stream that is culverted below the road.

Section K – Wide (>6m) but marked as a single lane. Ribbon housing development increasing in density towards Buncrana. Mainly fences or low stone walls rather than hedges.

TN5 – Roadside Himalayan Balsam.

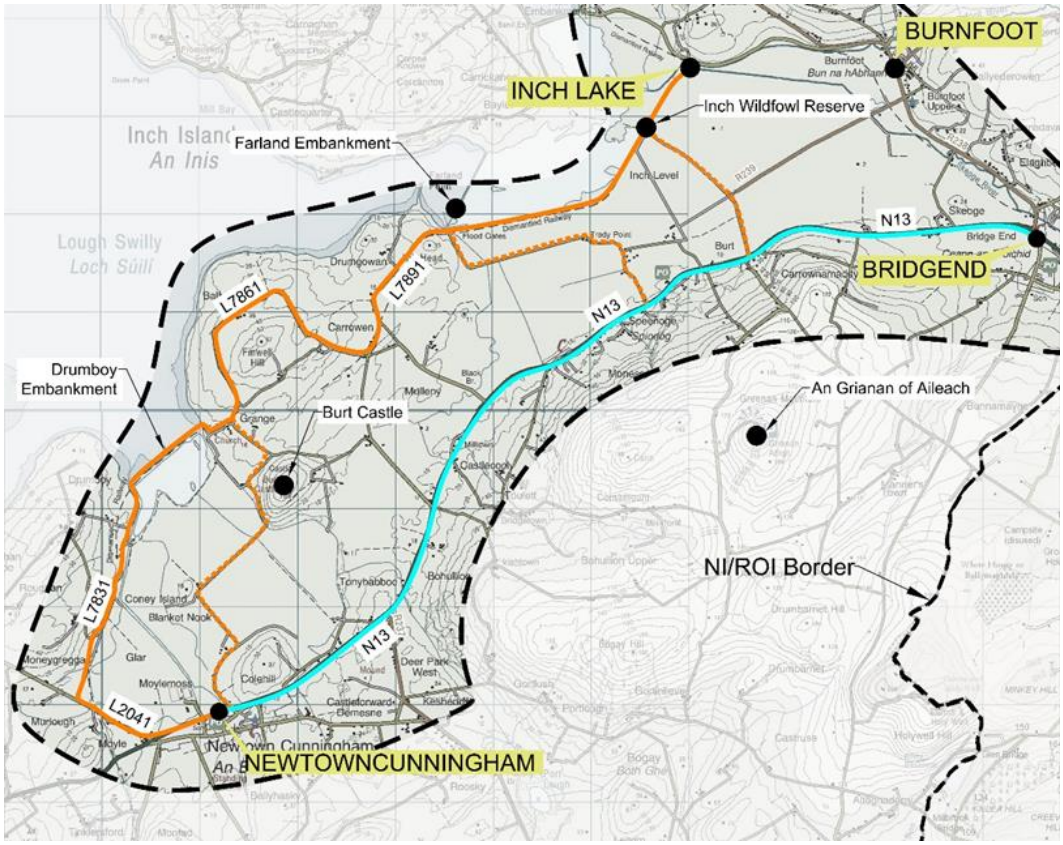
Section L – Ardaravan Park is narrower (around 4.5m)and runs into Suburban Buncrana – tall hedges in places, potential bat feeding, but not likely to be significant.

Section 5

The Light Blue Corridor starts at the N13 roundabout at Bridgend and runs along the length of the existing N13 route, passing through the townland of Burt to its endpoint at Newtowncunningham, as shown in Map 5.1

The Orange Corridor starts at the intersection of the Skeoge and Burnfoot rivers at Inch Lake and follows the route of the existing Inch Wildfowl Reserve walkway as far as the Farland Embankment The corridor follows the historic railway corridor and then along the L7981, L7861, L78611 and continuing to, and across, the Grange Embankment at Blanket Nook. The Corridor then follows the L7831 and L2041 to the N13 where it approaches Newtowncunningham.

A More detailed description of the Route Corridors can be found in the Stage 2 Preferred Route Corridor Selection Report.



Map 5.1

Map 5.2 covers the Orange Corridor from Inch Lake, along the Inch Wildfowl Reserve Walkway, to The Hide (TN2)

Map 5.3 covers the Orange Corridor from The Hide to Farland Embankment and along the L7981.

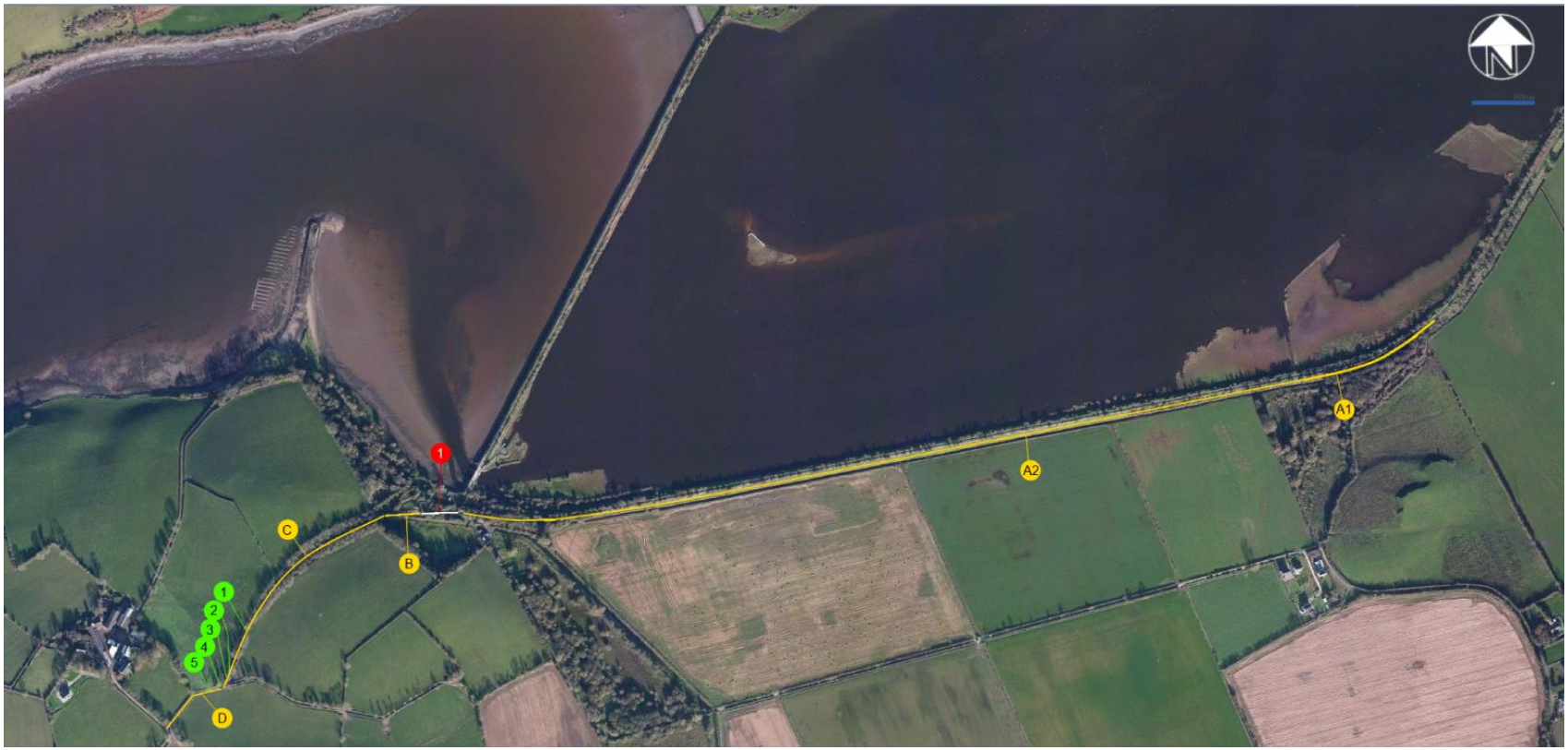
Map 5.4 covers the Orange Corridor from the L7981, along local roads, to a point along the L7861.

Map 5.5 covers the Orange Route from a point along the L7861, across the Grange Embankment and partly along the L7831.

Map 5.6 covers the Orange Route from the L7831, along the L2041 and N13, to Newtowncunningham.

Map 5.7 covers the Light Blue Route along the N13.

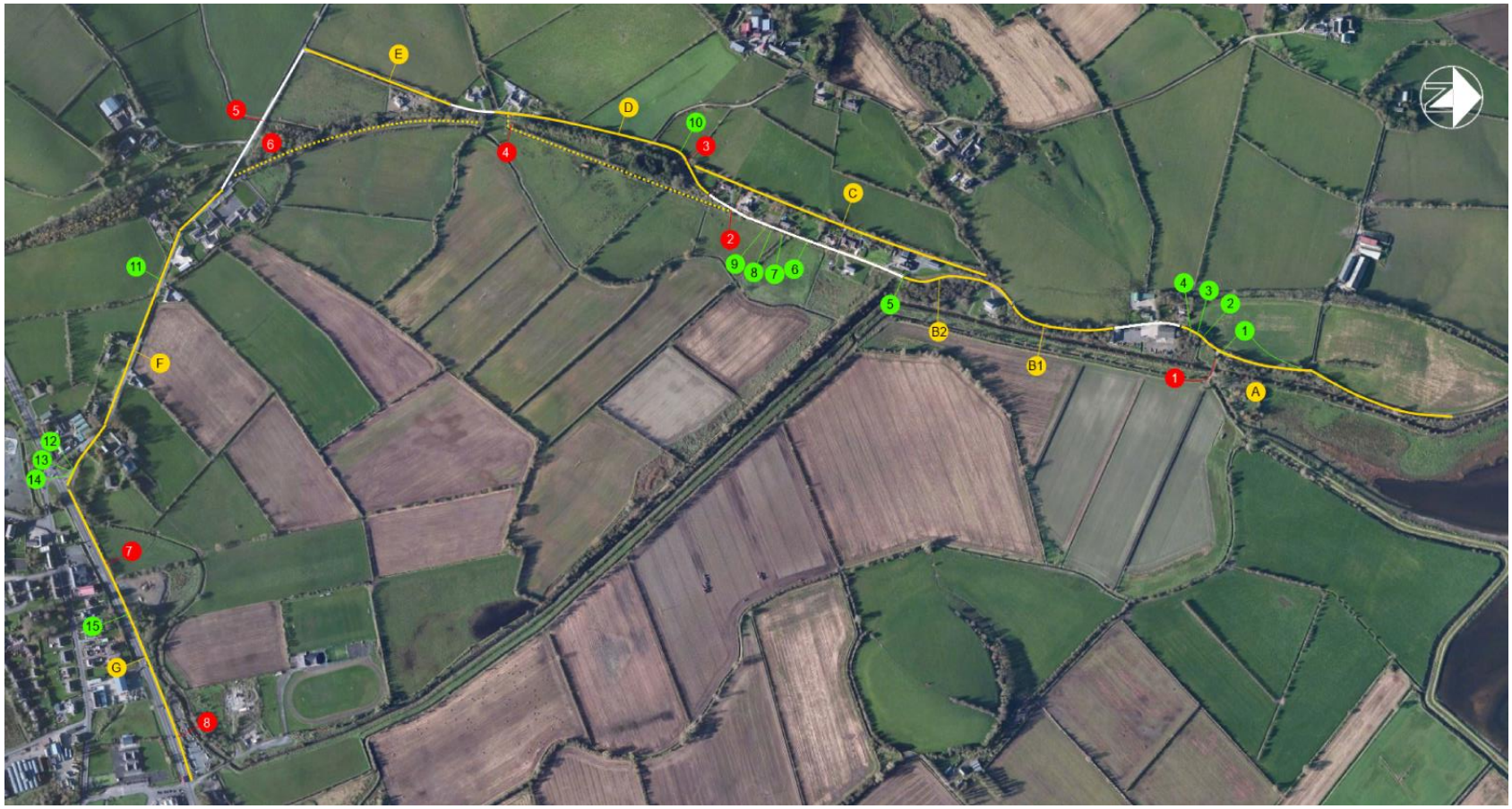
Map 5.2



Map 5.3

Map 5.4

Map 5.5



Map 5.6

Map 5.7 – Light Blue Route

Map 5.2

Section A - Existing path. The unsurfaced path is 3m wide and runs through a WN:2 woodland of semi-mature to mature Ash (Fraxinus excelsior) with an abundant Bramble (Rubus fruticosus agg.) sub-canopy. A few trees are close to the path edge and may suffer root damage if the upgrade requires excavation.

It runs alongside the borrow dyke in the adjacent agricultural field. This would be best checked for Otter slides from the opposite bank.

Section B – Existing path. The track here is 1.7 m wide, but with poor semi-improved mown GS:2 verges to either side making a total width of 3.9m. In places less improved, the best sections:

Red Fescue (Festuca rubra)	D
Ribwort Plantain (Plantago lanceolata)	O
Common Knapweed (Centaurea nigra)	O
Smooth Meadow-grass (Poa pratensis agg)	O
Barren Strawberry (Potentilla sterilis)	LO
Meadowsweet (Filipendula ulmaria)	LO
Sweet Vernal-grass (Anthoxanthum odoratum)	F
Cock's-foot (Dactylis glomerata)	O

These areas of better quality grassland are fragmentary, and where they occur the normally are better expressed on the lower bank.

To the RHS, screened from the water by a tall bank with Hawthorn (Crataegus monogyna) and occasional young Ash (Fraxinus excelsior).

On the LHS intermittent Hawthorn (Crataegus monogyna), and banks of Bramble (Rubus fruticosus agg.) not tall enough to serve as a screen from the adjacent Inch levels.

TN 1 – the pump house

Section C - Existing track. The concrete track leading from the Pump house car park, to, and beyond the pump house, is 2.9 m wide. Abundant Russian Comfrey (Symphytum x uplandicum) on the verge is not a Schedule 3 species.

Section D – Existing path. The path and low ecological value verges are wide enough to accommodate a 3m wide greenway.

Up as far as the hide, this is screened on the Swilly side by a tall embankment, and from the Inch levels by tall Hawthorn (Crataegus monogyna). There are a few trackside Common Alder (Alnus glutinosa) planted below the pylons. These have already been lopped, and should be removed irrespective of the Greenway.

TN2 – The hide

Map 5.3

Section A – Existing path. A long section with a 1.7m wide gravelled track, which combined with the verges allows a 4.4 m width along the top of the sea wall.

The verges are generally dominated by False Oat-grass (Arrhenatherum elatius) with e.g.:

False Oat-grass (Arrhenatherum elatius) D
Bush Vetch (Vicia sepium)
Creeping Buttercup (Ranunculus repens)
Common Nettle (Urtica dioica)
Cow Parsley (Anthriscus sylvestris)
Common Ivy (Hedera helix)

@ **A1** the screen to the RHS is primarily provided by Bramble (Rubus fruticosus agg.) growing over a sheep-net fence. On the RHS and throughout **A2** the path is largely screened on both sides by tall Hawthorn (Crataegus monogyna), sometimes with e.g. Common Alder (Alnus glutinosa) saplings, Domestic Apple (Malus pumila), Bullace (Prunus domestica var insititia).

TN 1 – Car park

Section B – Existing track. The initial track leading from the car park is hard-surfaces and elevated above young Ash (Fraxinus excelsior), Common Alder (Alnus glutinosa) and Rusty Willow (Salix cinerea subsp oleifolia) at the road side, but the road itself ill accommodate the proposed greenway.

Section C – Existing 2.9 m wide track. Here the track is unsurfaced and runs into a railway cutting, the sides of which are occupied by a young woodland in WN:2 but almost exclusively comprising semi-mature to early-mature Ash (Fraxinus excelsior) with a ground-flora overwhelmingly dominated by Common Ivy (Hedera helix) with frequent bulky ferns.

Section D - Existing track. Beyond the cutting the 2.8m wide track runs between verges of False Oat-grass (Arrhenatherum elatius) and Cow Parsley (Anthriscus sylvestris) below stone walls with intermittent Hawthorn (Crataegus monogyna). All roadside trees are rooted in the embankment top.

Tree table Map 5.3

No.	Spp.	DBH cm	BRRG	Condition/notes
5	Ash (Fraxinus excelsior)	84	2	1.6 m from the track
4	Ash (Fraxinus excelsior)	46	2	0.7 m from the track
3	Ash (Fraxinus excelsior)	48	2	0.9 m from the track
2	Ash (Fraxinus excelsior)	61	2	1.6 m from the track
1	1 x Ash (Fraxinus excelsior) Sycamore (Acer pseudoplatanus)	51 54	2 2	0.9 m from the track 1.0 m from the track

Map 5.4

Section A – A 3.9 m wide road section between steep embankments of False Oat-grass (Arrhenatherum elatius) generally with low flailed hedge of Hawthorn (Crataegus monogyna) and sometimes Snowberry (Symphoricarpos albus). Trees and tree groups in the hedgerow on the RHS and subsequent trees on the LHS,

At the start of this section, there are trees on opposite sides of the road, the gap between them is 6.4m

There is a well-marked badger crossing before the junction.

Section B - Single track roads.

@ B1 - the road here is 2.7 m wide, but with mown, ecologically dull verges in excess of 0.6m to either side.

@ B2 - A long and ecologically uneventful section of road.

Three badger crossing points were followed and did not lead to any nearby setts

Tree table Map 5.4

No.	Spp.	DBH cm	BRRG	Condition/notes
1	Ash (Fraxinus excelsior)	59	2	In the RHS embankment
2	13 x Ash (Fraxinus excelsior)	To 88	2	Usually around 50 cm dbh, all in the RHS embankment top, often in BRR group 2
3	Sycamore (Acer pseudoplatanus)	54	1	In garden
4	3 x Ash (Fraxinus excelsior) 2 x Sycamore (Acer pseudoplatanus)	To 60	2	In hedge and 1.9 m from road
5	1 x Ash (Fraxinus excelsior) 1 x Ash (Fraxinus excelsior)	To 40 To 27		Multi-stemmed. One either side of the road. 0.8m and 1.1m from the road respectively.
6	Ash (Fraxinus excelsior)	To 33	0	Low-breaking, 0.9 m from road, poor condition
7	Sycamore (Acer pseudoplatanus)	To 31	0	Multi-stemmed. 1.8 m from the road
8	Sycamore (Acer pseudoplatanus)	To 28	0	Multi-stemmed. 2.1 m from the road
9	Sycamore (Acer pseudoplatanus)	To 57	1	Multi-stemmed. 2.1 m from the road
10	Sycamore (Acer pseudoplatanus)	To 58	1	Multi-stemmed. 1.4 m from the road
11	Ash (Fraxinus excelsior)	To 39	0	2-stemmed. 0.9b m from the road
12	Ash (Fraxinus excelsior)	To 20	0	Multi-stemmed. 0.9 m from the road
13	Ash (Fraxinus excelsior)	To 33	0	Multi-stemmed. 0.9 m from the road
14	Ash (Fraxinus excelsior)	To 25	0	Multi-stemmed. 1.1 m from the road
15	Ash (Fraxinus excelsior)	51	0	1.1 m from the road
16	Ash (Fraxinus excelsior)	33	0	2 m from the road
17	Ash (Fraxinus excelsior)	To 22	1	Multi-stemmed. 1.6 m from the road
18	3 x Sycamore (Acer pseudoplatanus)	To 45	1	Closest, 1.4 m from the road
19	Ash (Fraxinus excelsior)	To 28	1	Multi-stemmed. 0.9 m from the road
20	Ash (Fraxinus excelsior)	To 33	1	Multi-stemmed. 1.3 m from the road

Map 5.5

Section A – A 3.1 m wide road with narrow False Oat-grass (Arrhenatherum elatius)-dominated embankments, usually up to low, species-poor hedges of Hawthorn (Crataegus monogyna), sometimes of Snowberry (Symphoricarpos albus), or low walls.

Section B – A 3.0 m wide unsurfaced track, embanked both sides, initially (B1) with unflailed overgrown Hawthorn (Crataegus monogyna) hedges and hedgerow trees, and subsequently (B2) with a flailed hedge to the RHS. A more direct alternative (but requiring land acquisition) was not investigated.

The proposal here is limited to re-surfacing, so the only issue is potential root damage to the adjacent trees

In **B1** trees are frequent on both sides of the track:

	Diameter class		No. in BRR2
	< 30 cm	> 30 cm	
Ash on the RHS embankment	15	-	-
Ash on the LHS embankment	-	5	1
Sycamore on the RHS embankment	1	-	-
Sycamore on the LHS embankment	5	9	2

Section C – The causeway annexing Blanket Nook.

@ C1 – Initially a weedy gravel track to the sluice structure, and a mown Perennial Rye-grass (Lolium perenne) track beyond it, all screened from the impounded side by the rising railway embankment.

@ C2 – The mown Ryegrass track continues across the apex of the causeway and would have no significant ecological habitat impacts. Greenway design will ensure avoidance of potential for adverse impact to birds.

There is a lower path that seems to have been the railway track that is easily accessed from C1, and which would conceal or camouflage path users from the birds in the Blanket Nook.

The grassy track is 4m wide and semi-improved GS:2 within MG:6 Lolium perenne-Cynosurus cristatus mesotrophic grassland pasture community and comprising:

Yorkshire-fog (Holcus lanatus)	A-D
Ribwort Plantain (Plantago lanceolata)	F
White Clover (Trifolium repens)	F
Bush Vetch (Vicia sepium)	O-F
Sweet Vernal-grass (Anthoxanthum odoratum)	O-F
Cock's-foot (Dactylis glomerata)	O-F
Perennial Rye-grass (Lolium perenne)	OLF
Crested Dog's-tail (Cynosurus cristatus)	O
Common Knapweed (Centaurea nigra)	O
Hogweed (Heracleum sphondylium)	O
Dandelion (Taraxacum officinale)	O
Common Sorrel (Rumex acetosa subsp acetosa)	O
Meadow Foxtail (Alopecurus pratensis)	O
Red Fescue (Festuca rubra)	LF
False Oat-grass (Arrhenatherum elatius)	LF

The slopes to both sides with abundant tall Hawthorn (Crataegus monogyna) and Bramble (Rubus fruticosus agg.) with relatively few gaps, especially to the positive.

TN 1 – the screening Hawthorn (Crataegus monogyna) have been recently coppiced over the culvert crossing. They will grow back if they haven't also been stump treated.

Section D – A road section with the existing road width shortly exceeding 3m. Large Hawthorn (Crataegus monogyna) on the LHS bank, which is a further ± 2m wide – hedgerow trees are rooted behind the bank.

Himalayan Balsam (Impatiens glandulifera) is a patchy dominant, initially on the LHS road verge, and on both verges around the Drumbouy farm track junction.

TN2 – A Badger latrine on the LHS verge. Careful searching in the area revealed no setts.

Section E – The former railway ascends a low drumlin to Drumbouy Farm which is passes in a cutting.

@ E1 – Initially the track is in wide tract of cattle-grazed GA:1 improved grassland, occasionally damp in places and with species-poor Hawthorn (Crataegus monogyna) hedges with occasional semi-mature Ash (Fraxinus excelsior).

@ E2 – As it approaches the farm in a cutting the former track carries an active stream/flush between tall steep banks of young, grassy WN:2 woodland entirely dominated by Ash (Fraxinus excelsior) to semi-mature. The losses here would be of muddy Creeping Bent (Agrostis stolonifera) dominated grassland with e.g.:

Ivy-leaved Crowfoot (Ranunculus hederaceus)
Cow Parsley (Anthriscus sylvestris)
Soft-rush (Juncus effusus)
Common Nettle (Urtica dioica)
Lesser Celandine (Ficaria verna)

TN 3 – The access track to the farm used to be carried across a bridge, but is now over an infilled section of the cutting – the infill would be an obstacle to the greenway if it were routed along the cutting.

@ E3 - The young woodland continues to the positive of the farm access, perhaps less dense here, and the former track is wet, but barely flushed, so ponded up with e.g.:

Fool's-water-cress (Apium nodiflorum)
Floating Sweet-grass (Glyceria fluitans)
Creeping Bent (Agrostis stolonifera)

@ E4 - Beyond the cutting, the former track is slightly elevated, wide and dry GA:1 improved grassland between species-poor Hawthorn (Crataegus monogyna) hedges.

TN 4 – The former railway here is fully incorporated into the curtilage of the adjacent house, where it is utilised as the yard. The greenway would have to be routed back to the road here, where there is a farm gate at the roadside, so no breakthrough section required.

Section F – On the LHS of the former cutting, a possible option is to route up the cutting side and follow a gap between the top of the cutting and the adjacent low embankment, still carrying a species-poor, tall Hawthorn (Crataegus monogyna) hedge with occasional semi-mature Ash (Fraxinus excelsior), although the gap is only around 2.7 m wide and there would be inevitable root damage to the upper trees in the young woodland that occupies the cutting side. This with bare soil or sparse grass, no woodland ground-flora over the upper 'path'.

Tree table Map 5.5

No.	Spp.	DBH cm	BRRG	Condition/notes
1	Sycamore (Acer pseudoplatanus)	To 48	1	Low-breaking
2	White Willow (Salix alba)	To 108	2	Low-breaking. 2.2m from the road
3	Ash (Fraxinus excelsior)	To 33	2	Low-breaking. 2m from the road

Map 5.6

Section A – single track road 3.3 m wide an embankment runs alongside the woodland on the LHS with regular mature trees (that will not be impacted).

The roadside embankment is species-rich with woodland edge and grassland species.

Himalayan Balsam (Impatiens glandulifera) is abundant on the RHS along the roadside before a small sheugh that runs alongside a species-poor Hawthorn (Crataegus monogyna) hedge.

Himalayan Balsam (Impatiens glandulifera) also patchy on the LHS.

TN 1 – Here a track that leads 'across country' directly to Newtowncunningham (via an arterial ditch) joins the road.

Section B – A single track road past woodland of Ash (Fraxinus excelsior) and Rusty Willow (Salix cinerea subsp oleifolia). The LHS bank drops down into the wood, with a species-poor Hawthorn (Crataegus monogyna) hedge at the roadside. Adjacent trees are rooted below the bank and generally are 2-3 m from the road. The verge itself is only around 70 cm wide with elements of woodland edge ground-flora, including patches of Ground-elder (Aegopodium podagraria) and small patches of Himalayan Balsam (Impatiens glandulifera).

TN 2 - Possible alternative track to the LHS of the former railway leaves the road here.

Section C – The former railway route here is largely incorporate into rear gardens of the houses along this section, and is presumed to be unavailable.

TN 3 – A tall hump-back bridge over the former railway.6.4 m width between the parapets

Section D – A single track road with a narrow verge on the LHS to a steep embankment leading into patchy WD:2 mixed woodland. A hedge of large Hawthorn (Crataegus monogyna) at the bank top, with several shade-indicator species noted in the verge flora.

TN 4 – Japanese Knotweed (Fallopia japonica) beside the farm track before it re-joins the road here.

Section E – A 3.6 m wide road with a 1.6m embankment at the LHS verge down to a ditch with sparse Common Reed (Phragmites australis) and with Marsh-marigold (Caltha palustris) Cow Parsley (Anthriscus sylvestris) etc at the edges. This partly dry, partly with lentic watered sections that could possibly serve as newt breeding ponds (although there are many other more suitable water bodies in the vicinity).

TN 5 – Bridge. 5.5 m between the parapets – the road here with species-poor Hawthorn (Crataegus monogyna) hedges on embankments to either side.

TN 6 – Japanese Knotweed (Fallopia japonica) abundant in this former garden, including some at the roadside embankment. Under treatment, with only sporadic 2018 ramets when surveyed.

Section F – The L2401 is a 5m wide road with narrow (60 cm) embanked verges carrying species-poor Hawthorn (Crataegus monogyna), or sometimes Bullace (Prunus domestica var insititia), hedges, and generally with walls past the adjacent gardens.

Section G – The road into Newtowncunningham with a wide GS:2 grassland verge to the LHS largely of False Oat-grass (Arrhenatherum elatius) and Bramble (Rubus fruticosus agg.), plus e.g.:

Red Fescue (Festuca rubra)
Bush Vetch (Vicia sepium)
Cock's-foot (Dactylis glomerata)
Common Nettle (Urtica dioica)

A few semi-mature Common Alder (Alnus glutinosa) and young Osier (Salix viminalis), but these all 3-4 m from the roadside.

TN 7 – Opposite Coyles Bar the verge is only 2.3 m wide above a bank down to the adjacent field level, and includes a crash barrier.

TN 8 – Treated Knotweed – the main stand with no regeneration noted when surveyed, but a smaller stand beyond the young Goat Willow (Salix caprea) with a few young ramets of Giant knotweed (Fallopia sachalinensis), on Schedule 3 and treated exactly as Japanese Knotweed (Fallopia japonica).

Tree table Map 5.6

No.	Spp.	DBH cm	Bat Roost	Condition/notes
1	14 x mixed Ash (Fraxinus excelsior) and Sycamore (Acer pseudoplatanus)	To 40+	1	All BRR category 1, all on the embankment.
2	Sycamore (Acer pseudoplatanus)	To 43	1	2-stem, on embankment
3	Sycamore (Acer pseudoplatanus)	46	1	On embankment
4	1 x Sycamore (Acer pseudoplatanus) 1 x Common Alder (Alnus glutinosa)	47 44	2 2	On the corner embankment
5	Ash (Fraxinus excelsior)	To 26	2	Multi-stemmed. 1.7 m from the road
6	Pedunculate Oak (Quercus robur)	53	2	1.6 m from the road, leaning away.
7	2 x Balm of Gilead (Populus candicans)	To 16	0	
8	Common Alder (Alnus glutinosa)	36	1	1.4 m from the road
9	Common Alder (Alnus glutinosa)	36	2	1.3 m from the road
10	Common Alder (Alnus glutinosa)	To 24	2	Multi-stemmed, 1.5 m from the road
11	Sycamore (Acer pseudoplatanus)	46	0	In garden adjacent to the road
12	Beech (Fagus sylvatica)	45	0	All at least 3.6 m away from the road on the LHS verge at the junction. Route can be adjusted to avoid these trees
13	Beech (Fagus sylvatica)	34	0	
14	Beech (Fagus sylvatica)	39	0	
15	Sycamore (Acer pseudoplatanus)	To 27	1	3-stem, 1.9m from the road.

Map 5.7

This route continues along the N13 from Bridgend to Newtowncunningham and has been surveyed to scoping detail. Generally a low impact route in terms of Ecology. Adjacent to (and sometimes on the boundary of) the SPA, but next to a busy and fast road where additional activity would have little impact upon disturbance of feature birds.

Some large Japanese Knotweed patches on the verges. Mostly avoided if the route remains on the reservation of the road. Otherwise, only practical difficulties noted.

Section A – Route would start on RHS. This is a fast stretch of road with a 4.2 m reservation on the RHS. This ascends a slope to the +ve so there is a rising bank below the crash barrier leading down to the Inch Levels. The SPA boundary is drawn along the roadside here.

Section B – Rank of young and semi-mature Ash (Fraxinus excelsior) in a level False Oat-grass (Arrhenatherum elatius) verge leading back to a wooden rail fence.

Section C- RHS with 2.5m reservation alongside a wide level (3m+) verge of weedy False Oat-grass (Arrhenatherum elatius) with Hogweed (Heracleum sphondylium) before the slope down to the Levels. Scattered bushy Rusty Willow (Salix cinerea subsp oleifolia). There are some patches of Japanese Knotweed which appear to be under treatment. The SPA boundary is drawn along the roadside here.

TN1 – In front of the farm the mown verge is semi-improved and wide enough to accommodate the Greenway.

Section D – beyond the farm both the verge and the reservation are narrow. Adjacent hedge is species-poor Hawthorn (Crataegus monogyna) in good ecological condition and represents the SPA boundary. The verge remains weedy False Oat-grass (Arrhenatherum elatius), Yorkshire-fog (Holcus lanatus), Cow Parsley (Anthriscus sylvestris), Hogweed (Heracleum sphondylium) and Broad-leaved Dock (Rumex obtusifolius). Sometimes with Bramble (Rubus fruticosus agg.). This continues down the steep bank to the Inch Levels. This is steep and with significantly large stands of Japanese Knotweed. The SPA boundary is drawn along the roadside here.

Japanese Knotweed @ Section D

TN2 – A group of about 10 early-mature and mature Common Alder (Alnus glutinosa) close to the bank top.

TN3 – Another Group of Common Alder (Alnus glutinosa), but here the reservation tapers away, and the bank slopes down from the road edge. Patchy Japanese Knotweed remains an issue.

As the bank lessens towards the Speenoge Road (R239) is occupied by dull, coarse grassland.

Section E – Wide and relatively level verges to 7.5 m, but still without a roadside reservation, The verge occupied by rank Yorkshire-fog (Holcus lanatus) dominated grassland with patchy Bramble (Rubus fruticosus agg.), and frequent early mature to mature Downy Birch (Betula pubescens ssp pubescens) many of which would be damaged or lost. As the Birch end, the verge once again is

raised above the adjacent farmland, and there then follows a long section where the full reservation plus the narrow level verge at the banktop would accommodate the Greenway. Occasional Ash (Fraxinus excelsior) and Sycamore (Acer pseudoplatanus) tend to be rooted a little down the bank and may not be greatly damaged. The verge tapers towards the house beside the L7911 junction which is a potential pinch point here.

Section F – Beyond the L7911 the bank top and the reservation combined provide barely enough space for the greenway as far as TN4, and again with the SPA boundary away from the roadside.

TN4 – Post office and steep wooded bank (Sycamore regeneration) contribute a further pinch point here.

Section G – The reservation here +4m wide alongside a verge of weedy False Oat-grass (Arrhenatherum elatius) with Yorkshire-fog (Holcus lanatus) Creeping Thistle (Cirsium arvense), Broad-leaved Dock (Rumex obtusifolius) and Common Nettle (Urtica dioica).

Beyond another turning to the L7911the Adjacent SPA restarts at the adjacent field boundary, but otherwise an uneventful section of wide reservation adjacent to bank-top coarse grass of little consequence.

TN5 – Wide reservation runs past a narrow mown verge alongside a large residence. All mature trees are within the adjacent garden.

Section H – TN5 is the start of a section of mown amenity grass of various width through the small settlement of Moness.

Section I – Beyond Moness, a comparatively long section where the reservation is a little over 2m wide and combined with the bank top verge of weedy False Oat-grass (Arrhenatherum elatius) with occasional Great Horsetail (Equisetum telmateia) patches. The bank top here often includes a crash barrier protecting traffic from the steep bank. Very little structural vegetation on the RHS. A few small Bramble (Rubus fruticosus agg.) patches, a fence rather than hedge at the bank base. This continues as far as the Creative Landscape Works, where the adjacent land slopes up away from the Levels beyond the limit of the SPA.

TN 6 – Limit of the SPA.

Section J – The same narrow (2.2m) roadside reservation would require a verge strip to make the full width of the greenway. Here the verge remains weedy False Oat-grass (Arrhenatherum elatius) but level or at the base of an adjacent bank up, and with much more structural vegetation, mainly young to semi-mature Common Alder (Alnus glutinosa), Ash (Fraxinus excelsior), and Rusty Willow (Salix cinerea subsp oleifolia) with a few larger Birch and groups of un-trimmed Hawthorn.

TN7 – Extensive garage forecourt.

Section K –A grassy verge of weedy False Oat-grass (Arrhenatherum elatius) mainly above a low bank down to a rail fence. Little adjacent structural vegetation. No particularly ecological issues.

Section L – With a long row of mature Balsam Spire Poplar (Populus 'Balsam Spire') along the fence line. These trees more of landscape value that ecological value, but will have shallow spreading roots that could be damaged.

Section M – The reservation here wide enough (3.4m) to accommodate the greenway. Backed by a weedy False Oat-grass (Arrhenatherum elatius)/Common Nettle (Urtica dioica) bank up. Frequent young to semi-mature trees and shrubs constant, but only further up the bank. These would probably be retained unimpacted.

Section N – Adjacent verge slopes down. Sometimes occupied by Common Alder (Alnus glutinosa) and Rusty Willow (Salix cinerea subsp oleifolia), and leading to a field side fence. The reservation and the bank top False Oat-grass (Arrhenatherum elatius) grassland strip wide enough to accommodate the greenway.

TN8 - no garden boundary here – the lawn mown to the road edge, but the reservation wide-enough to accommodate the greenway.

Section O – The narrowing reservation here would mean increased land take on the verge and possible banking up which in turn would mean the near continuous young to semi-mature trees at the bank top Italian Alder (Alnus cordata), Sycamore (Acer pseudoplatanus) and patches of continuous adjacent Rusty Willow (Salix cinerea) would be damaged, some may be lost. Need confirmation of how much verge is required, and exact mapping of the structural vegetation.

Compartment P – On the approach to the village, the adjacent verge remains weedy False Oat-grass (Arrhenatherum elatius) dominated. Numerous scattered trees in the verge, mainly Sycamore (Acer pseudoplatanus), but the reservation here in excess of 3m so only a handful of trees at the road edge would be likely to be affected should the GW go along this route

Summary

The proposed route remains to be finalised.

Impacts upon selection features for the Swilly SPA (Birds) and SAC (saltmarsh and dune habitats) are the subject of an Appropriate Assessment in preparation.

Where the route follows shared road surfaces, or it is on the hard shoulder of larger roads, it is considered there will be no habitat impacts.

Where roads or verges are widened to accommodate the greenway, there will be losses of roadside hedges and trees. These losses can be mitigated by sensitive working practice and planting.

Of the soft habitats crossed by potential routes, only the verges approaching Buncrana were considered to be of high ecological value. Some scrub of moderate value could be lost in places.

Potential Ecological Constraints and Impacts

Disturbance of birds

The potential for impacts upon SPA feature birds using Lough Swilly have been identified and is addressed in further detail in the Stage 2 Preferred Route Corridor Selection Report. This will be addressed in the Appropriate Assessment.

Apart from the birds that are the SPA designation features, the proposed development has potential to impact nesting birds, where structural vegetation is required to be removed. Any required clearance work will be undertaken sensitively, in agreement with the relevant Statutory Authorities and legislative guidelines, in accordance with best practice and under instruction by an ecological clerk of works.

Disturbance/damage to Badger setts

Only a single definite Badger sett was noted. The potential proposed path is elevated high above the sett entrances so there may be no need to close the sett. Additional screening vegetation may be apt.

Disturbance/damage to Otter holts

Potential impacts upon Otters using Lough Swilly must be included in the Appropriate Assessment. Holts were only noted in one location, and that was outside the Lough Swilly SAC, but holts are often well concealed and some dense vegetation prevented access to river sides in places. The suspected holt structures would not be compromised by the proposed greenway.

Potential Bat roosts

A few of the trees along potential routes were regarded as having a moderate potential to host bat roosts. Ideally none of these will be lost, badly damaged, or stripped of Ivy as a result of the greenway.

Disruption to bat foraging routes

Breaking up tree lines or tall hedges, and illuminating tall hedges or woodland edges with new street lighting is a potential impact, but no obvious areas of conflict have yet emerged.

Tree and hedge losses

Low numbers of trees will be inevitably lost. These associated with boundaries to be removed.

Where verges are narrow, consider vesting enough land to accommodate the full greenway width on the opposite side of the retained hedge and trees.

Damage to retained trees

Confirmation required of the excavation that will be required to install the greenway a) on and existing hard surface, and b) on a soft surface.

Micro-siting to keep away from important trees will reduce adverse effects.

Grassland losses

The wide verges approaching Buncrana include grasslands of high value – the best sections are being invaded by scrub, other sections have been identified as wild flower verges for Buncrana Tidy Towns initiative – possibly trade conservation management/enhancement of the retained grassland around a minimum width greenway.

Losses of planted landscaping

Not a problem and can be retained.

Inputs into ditches and streams

Injurious inputs must be avoided by adopting good environmental practices during the build phase. Some (not all) watercourses are sensitive to soil inputs. All are sensitive to potential pollutants that could be generated at the path construction site – notably fuel oils and cement laden concrete washout.

Dispersal of Schedule 9/Schedule 3 species

Widespread Japanese Knotweed (Fallopia japonica), especially around Bridgend will require a careful work around, or elimination. A dig-and-dump approach would be significantly expensive.

Salmonberry (Rubus spectabilis), Himalayan Balsam (Impatiens glandulifera) and Giant-rhubarb (Gunnera tinctoria) also noted, and will require 'bio-security' measures.