Habitat Regulations Assessment Screening Report

Ulster Canal Greenway

HABITAT REGULATIONS ASSESSMENT
SCREENING REPORT

ULSTER CANAL GREENWAY

RPS
Elmwood House
74 Boucher Road
Belfast
BT12 6RZ
Northern Ireland

Tel: +44 (0)28 9066 7914
Fax: +44 (0)28 9066 8286

QUALITY MANAGEMENT

Client:	Waterways Ireland
Project Ref:	Ulster Canal Greenway
Document Ref:	NI1746.Rpt.Ec.01.D01

Rev.	Status	Author	Reviewed	Approved	Office	Issued
D01	Draft	DMC	JMC	--	Belfast	23.01.2017

CONTENTS

1 INTRODUCTION

This report has been prepared by RPS on behalf of Waterways Ireland for a project to deliver a greenway amenity along the route of the Ulster Canal and disused railway lines. Its objective is to connect the main market towns of Mid Ulster, creating a network of continuous, high quality walking and cycling paths.

Given the scale of the project a phased approach is proposed. These individual sections are described in the Project Description in section 3 of this report. The project is illustrated in **Figure 1**.

Due to the possibility of likely significant effects upon the conservation objectives of European sites within the zone of influence of the proposed project, and in applying the precautionary principle, the proposed project has been subject to the screening for appropriate assessment procedure outlined in the Conservation (Natural Habitats, etc) Regulations (Northern Ireland) 1995 (as amended) as a risk assessment tool to understand if the proposed project is likely to significantly affect any European site.

The project will be screened, in view of best scientific knowledge and in view of the conservation objectives of those European sites considered, whether or not the project, individually or in combination with other plans or projects is likely to have a significant effect on any European site.

1.1 APPROPRIATE ASSESSMENT

Article 6(3) of the Habitats Directive incorporates a two stage test. It requires that –

> *Any plan or project not directly connected with or necessary to the management of the site but likely to have a significant effect thereon, either individually or in combination with other plans or projects, shall be subject to appropriate assessment of its implications for the site in view of the site's conservation objectives. In the light of the conclusions of the assessment of the implications for the site and subject to the provisions of paragraph 4, the competent national authorities shall agree to the plan or project only after having ascertained that it will not adversely affect the integrity of the site concerned and, if appropriate, after having obtained the opinion of the general public.*

This allows consent to be given to plans or projects under two scenarios:

a) where it can be determined that a plan or project, alone and in combination with other plans or projects, is not likely to have significant effects on a European site in view of the site's conservation objectives;

or

b) (i) where significant effects are likely or cannot be discounted at the conclusion of the screening test (a Test of Likely Significance or ToLS), and

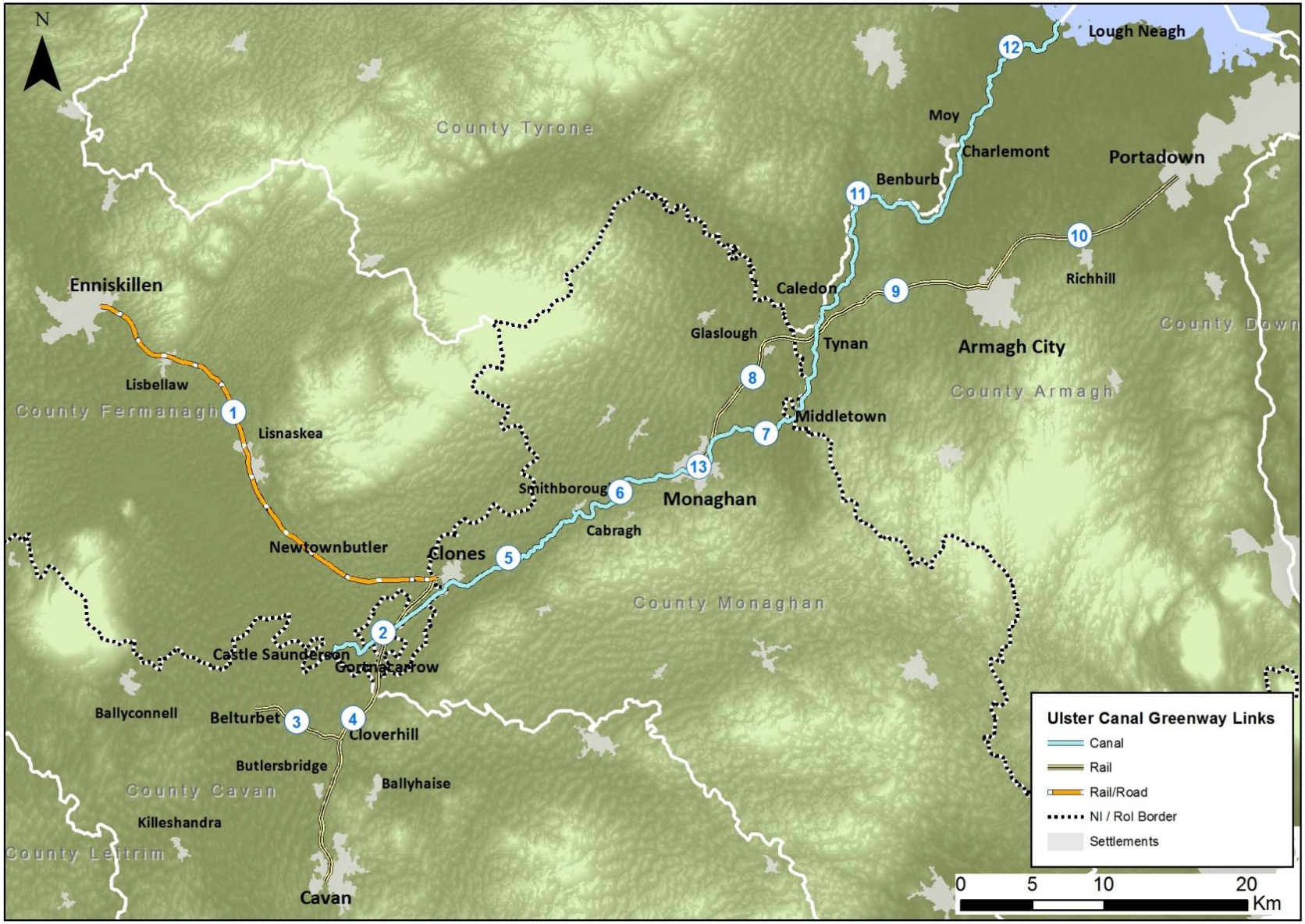
(ii) an appropriate assessment is made of the implications of a plan or project, alone and in combination with other plans and projects, on the integrity of a European site in view of its conservation objectives, and

(iii) where it can be determined following that assessment that the plan or project will not adversely affect the integrity of the site concerned and, if appropriate, after having obtained the opinion of the general public.

An Article 6(3) compliant consent cannot be permitted under any other scenario, except under terms of Article 6(4) derogation.

It must be stated quite clearly at the outset that the project considered here is not directly connected with or necessary to the management of any site as a European Site.

Figure 1: Project Phases or Sections and Original Infrastructure being utilised



2 METHODOLOGY

2.1 GUIDANCE ON APPROPRIATE ASSESSMENT

The Northern Ireland Environment Agency (NIEA) is an Executive Agency of the Department of Agriculture, Environment and Rural Affairs (DAERA). It has published guidance notes on Habitat Regulations Assessment for Competent Authorities (EHS, 2002).

In addition to the advice available from the Department, the European Commission has published a number of documents which provide significant guidance on the requirements of Appropriate Assessment, including, Assessment of Plans and Projects Significantly Affecting Natura 2000 sites - Methodological Guidance on the Provisions of Article 6(3) and (4) of the Habitats Directive 92/43/EEC, (EC, 2001), which sets out the principles of how to approach decision making during the process and these have been followed as closely as possible.

The assessment has been prepared having due regard to the following guidelines:

- Communication from the Commission on the Precautionary Principle., Office for Official Publications of the European Communities, Luxembourg (EC, 2000a);
- Managing Natura 2000 Sites: the provisions of Article 6 of the 'Habitats' Directive 92/43/EEC, Office for Official Publications of the European Communities, Luxembourg (EC, 2000b);
- Assessment of plans and projects significantly affecting Natura 2000 sites: Methodological guidance on the provisions of Articles 6(3) and (4) of the Habitats Directive 92/43/EEC. Office for Official Publications of the European Communities, Brussels (EC, 2001);
- Habitat Regulations Guidance Notes For Competent Authorities. Environment and Heritage Service, Belfast (EHS, 2002);
- Nature and biodiversity cases: Ruling of the European Court of Justice. Office for Official Publications of the European Communities, Luxembourg (EC, 2006);
- Guidance document on Article 6(4) of the 'Habitats Directive' 92/43/EEC – Clarification of the concepts of: alternative solutions, imperative reasons of overriding public interest, compensatory measures, overall coherence, opinion of the commission; (EC, 2007);
- Interpretation Manual of European Union Habitats. Version EUR 28. European Commission (EC, 2013); and
- Habitat Regulations Assessment relevant to nationally significant infrastructure projects: Advice note ten. The Planning Inspectorate, Department for Communities and Local Government (2013).
- Strategic Planning Policy Statement for Northern Ireland (SPPS): Planning for Sustainable Development (DOE, 2015).

3 THE PROJECT

Greenway sections are listed below and illustrated in **Figure 1**.

1. Enniskillen to Clones
2. Castlesaunderson to Clones
3. Belturbet to Cloverhill
4. Cavan to Clones
5. Clones to Smithboro
6. Smithboro to Monaghan
7. Monaghan to Middletown via Ulster Canal
8. Monaghan to Ulster Canal via Glaslough
9. Middletown to Armagh
10. Armagh to Portadown
11. Middletown to Benburb
12. Benburb to Lough Neagh

3.1 GREENWAY CONSTRUCTION

Excavation and levelling of materials will be carried out using traditional plant such as excavators and mini excavators in restricted areas. Excavation of the existing surface will be kept to a minimum and avoided completely where there is a risk of damaging existing tree roots. Excavated material will be used for the reinstatement of the edges of the new trail to reduce material importation costs as well as minimise the risk of the introduction of invasive species. It is not envisaged that there will be a need to remove any large quantities of excavated material from within the site boundary. A typical construction sequence of a section of Greenway would entail the following:

1. Firstly the topsoil will be excavated.
2. Next the formation tray will be created – this is the width required during construction stage to overlay the final surface finish. Whilst the desirable width is 3m this may vary from a maximum 3m wide and reduce to suit existing restricted access widths due to engineering, ecological or heritage constraints. In this way the Greenway will constructed to fit the surrounding landscape and not the other way round.
3. Using a excavator, excavate the ground to expose sub-soil and grade out irregularities to form 3.5m wide formation tray (width of formation tray to be approximately 300-500mm wider than the path width) to maximum depth of 100mm below ground level. (Actual depth will depend on depth of sub-

base being used, which will vary depending on ground conditions. Where possible new construction will overlay existing).

4. Formation tray should be rectangular in section with vertical sides and level base.

5. Stripped vegetation and excavated topsoil to be stacked neatly either side of formation tray to be used for reinstatement of path shoulders.

6. If soft spots are present in the base of the formation tray, excavation will continue below formation level until the sub-grade is stable. The excavation will be back-filled with stone to formation level and compacted.

7. There will be no excavation requirements with regard to the overlay of the existing Compacted Stone and Dust surface other than to address issues with soft spots as detailed above e.g. current Greenway around Monaghan Town.

8. Lay and secure geotextile sheet in formation tray or on top of the existing ground. Overlap joining sheets.

9. Creation of the sub-base layer. This will be accomplished by using either a drag box or mini excavator lay the required depth of Clause 804 granular sub-base upon the geotextile sheet

10. This sub-base layer will be thoroughly compacted using a roller until full compaction is achieved.

11. Once sub-base layer is compacted, check levels of the surface at regular intervals along the compacted sub-base layer for consistent even surface regularity. Any part of the sub-base layer deviating from the required level must be raked off or topped up with additional Clause 804 granular sub-base and re-compacted to the correct levels.

12. Surface Layer: using either a drag box or mini excavator lay 25mm depth of 6mm limestone dust to falls and levels, to form 1.5m to 2.5m wide path surface with 1:50 (2%) camber or 1:40 (2.5%) crossfall along the centre line of compacted sub-base layer.

13. Compact surface layer thoroughly using a roller until full compaction is achieved.

14. Once rolling is finished, check levels of the surface at regular intervals along the compacted surface layer for consistent even surface regularity. Any part of the surface layer deviating from the required level must be raked off or topped up with additional 6mm limestone dust and re-compacted to the correct levels.

15. Landscaping: using available topsoil and turfs (if necessary imported topsoil) from excavations cover path base edges butting turfs tightly together to cover exposed roots and topsoil. Landscaped verges and edges should be finished level with path surface and taper down and away from the path surface to allow surface water to run off onto adjacent verges

The preferred surface for the greenway shall is an unbound dust surface. This surface has a more natural appearance suitable along the towpaths and river banks. On the approach to and near settlements, the preferred surface for the greenway is a bound (sealed) surface on any route within close proximity to an urban area or village environment. Bound and unbound surfaces are demonstrated in Appendix 1 of this report.

4 SCREENING OR TEST OF LIKELY SIGNIFICANCE

4.1 EUROPEAN SITES

In Northern Ireland the project spans three planning authority areas crossing three counties. In the Republic of Ireland it spans two planning authority areas, Counties Cavan and Monaghan.

It project spans two international river basin districts and three river catchments. The current proposal is to cross watercourses via existing road network, abandoned railway or pedestrian crossings.

Figure 2 illustrates the individual project sections and their proximity to Special Areas of Conservation; **Figure 3** illustrates their proximity to Special Protection Areas; and **Figure 4** illustrates their proximity to Ramsar sites, which fall within the scope of this assessment in accordance with Northern Ireland planning policy (DOE, 2015).

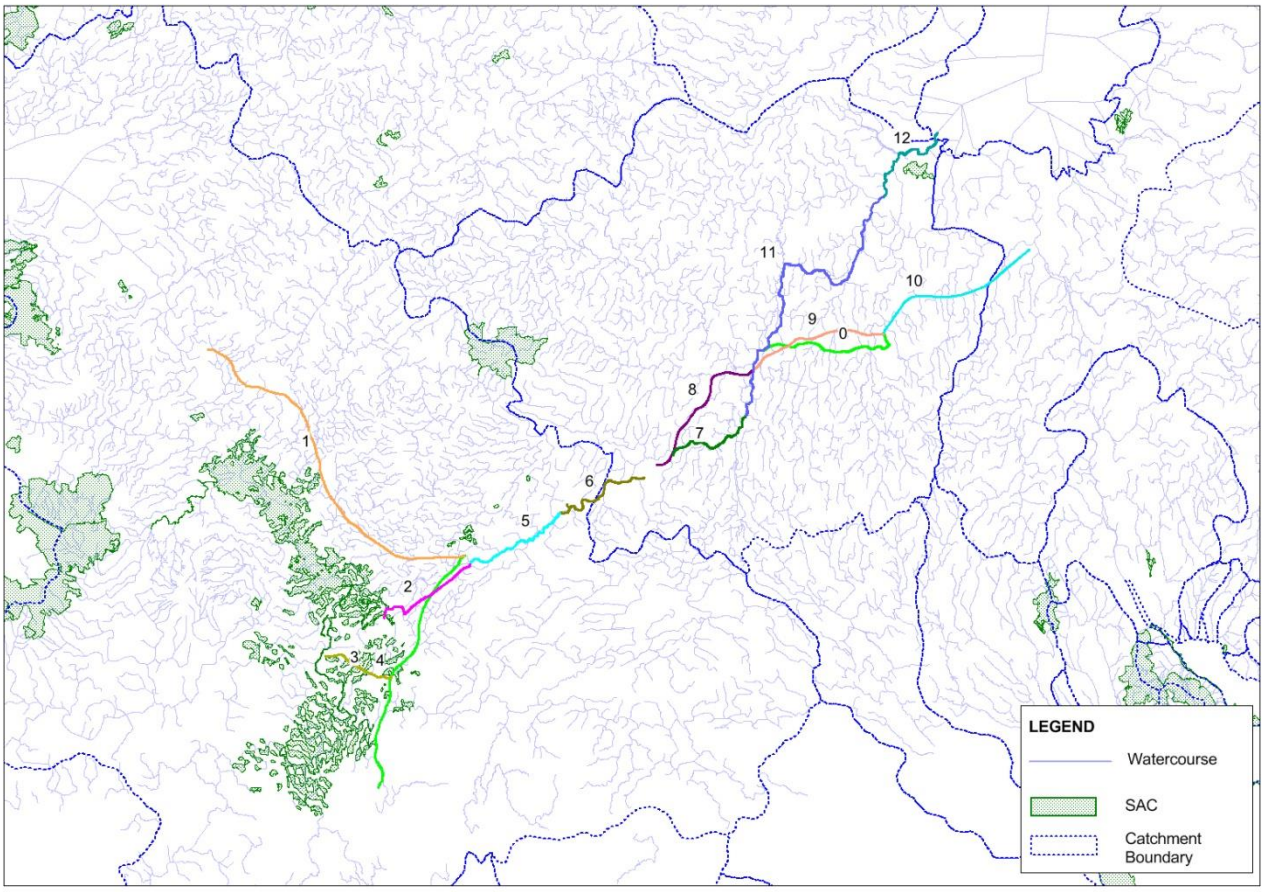


Figure 2: Project Sections and their Proximity to SACs

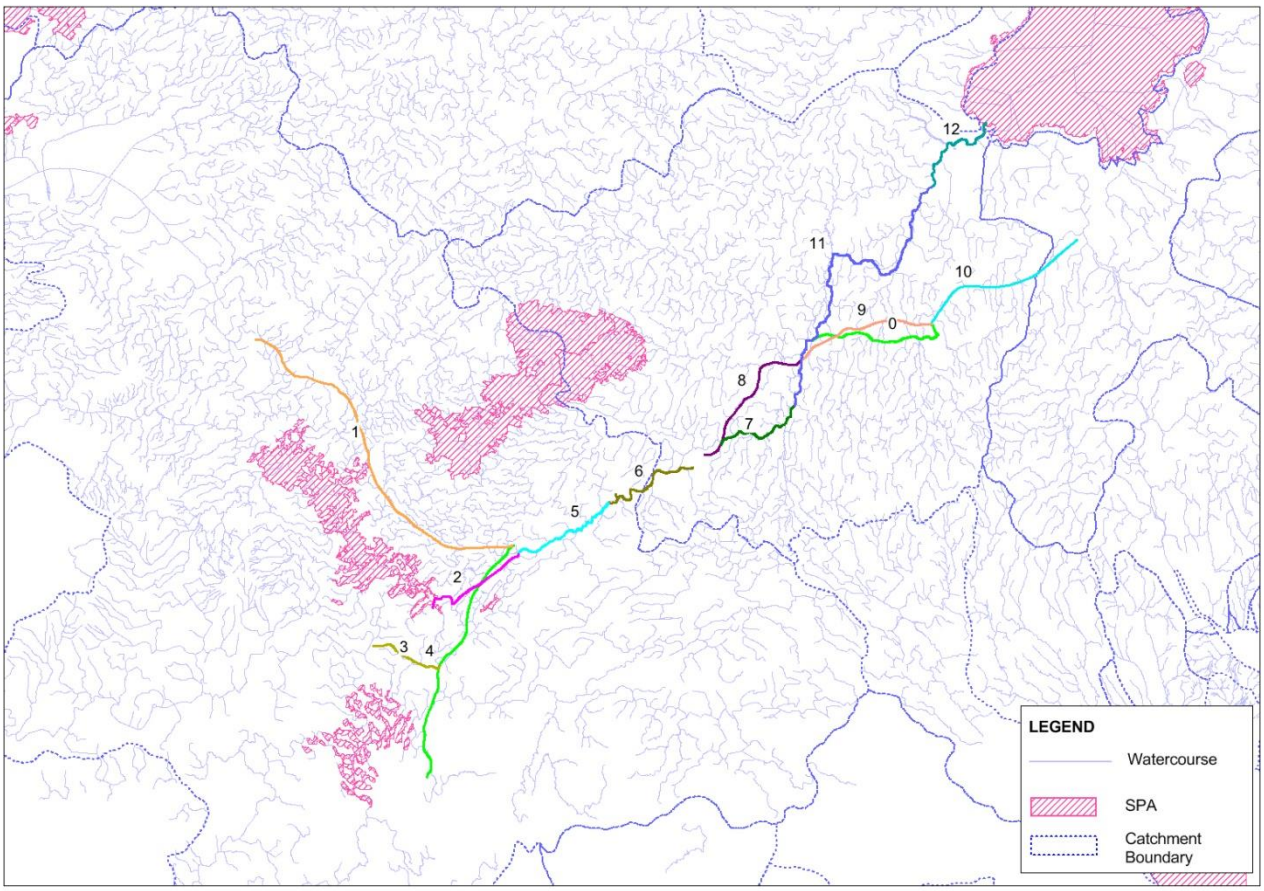


Figure 3: Project Sections and their Proximity to SPAs

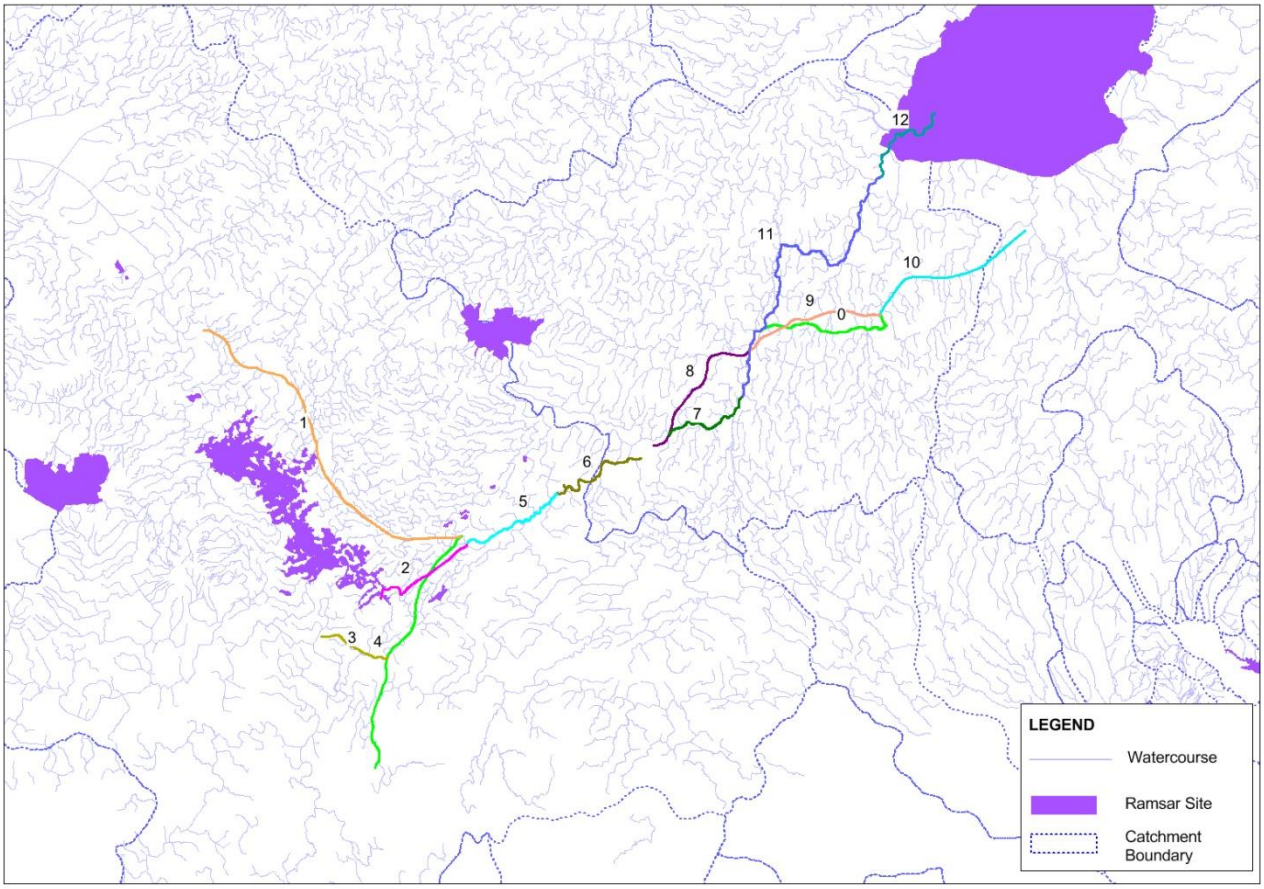


Figure 4: Project Sections and their proximity to Ramsar Sites.

Table 1 indicates the European sites considered, their selection features and relative distances from the nearest project sections. Where a clear downstream hydrological link to a European Site occurs this is stated.

Table 1: European sites considered, their selection features and relative distances from the proposed development

European site	Selection / Qualifying Feature	Catchment	Greenway Sections Having a Potential Impact	Distance Direct	Downstream Hydrological Link
Lough Neagh and Lough Beg SPA	*Feature species (breeding populations)* Common Tern, Great Crested Grebe *Feature species (passage populations)* Great Crested Grebe *Feature species (wintering populations)* Whooper Swan, Bewick's Swan, Golden Plover, Great Crested Grebe, Pochard, Tufted Duck, Scaup, Goldeneye *Waterfowl assemblage (wintering population)* Whooper Swan, Bewick's Swan, Golden Plover, Great Crested Grebe, Pochard, Tufted Duck, Scaup, Goldeneye, Little Grebe, Cormorant, Greylag Goose, Shelduck, Wigeon, Gadwall, Teal, Mallard, Shoveler, Coot, Lapwing	068	6, 7, 8, 9, 10, 11 & 12	Variable	Yes
		0UN3	10	Variable	
Lough Neagh and Lough Beg Ramsar	*Criterion 1* The largest freshwater lake in the United Kingdom. *Criterion 2* Supporting rare or local vascular plants and rare or local invertebrates. *Criterion 3* Substantial numbers of individuals from particular groups of waterfowl which are indicative of wetland values, productivity and diversity. *Criterion 4* Important assemblage of breeding birds *Criterion 7* The site supports a population of pollan *Coregonus autumnalis*.	068	6, 7, 8, 9, 10, 11 & 12	Variable	Yes
		0UN3	10	Variable	
Peatlands Park SAC	*Habitats* Degraded raised bog Bog Woodland Old sessile oak woods with *Ilex* and *Blechnum* in the British Isles Active raised bog	00068	12	0.74km	No

European site	Selection / Qualifying Feature	Catchment	Greenway Sections Having a Potential Impact	Distance Direct	Downstream Hydrological Link
Magheraveely Marl Loughs SAC	*Habitats* Hard oligo-mesotrophic waters with benthic vegetation of *Chara* spp. Alkaline fens Calcareous fens with *Cladium mariscus* and species of the *Caricion davallianae* White-clawed (or Atlantic stream) crayfish	0123	1	0.95km	No
			4	1.2km	
			5	1.9km	
			6	4.1km	
Magheraveely Marl Loughs Ramsar Site	*Criterion 1* These loughs are a relatively rare lake type in Northern Ireland characterised by the presence of calcium carbonate deposits, or marl, which are precipitated out of the calcium-rich water to produce marl loughs. *Criterion 2* They support vulnerable vegetation communities and species notably the Annex II species white-clawed crayfish.	0123	1	0.95km	No
			4	1.2km	
			5	1.9km	
			6	4.1km	
Kilroosky Lough Cluster SAC (Rep. of Ireland)	*Habitats* Hard oligo-mesotrophic waters with benthic vegetation of *Chara* spp. Alkaline fens Calcareous fens with *Cladium mariscus* and species of the *Caricion davallianae* White-clawed (or Atlantic stream) crayfish	0123	4	1.2km	No
			5	1.9km	
			6	4.1km	
Slieve Beagh-Mullaghfad-Lisnaskea SPA	Hen Harrier (breeding population)	068 0123	1	4.9km	No
			5	9.1km	
			6	10.1km	
			8	13.2km	

European site	Selection / Qualifying Feature	Catchment	Greenway Sections Having a Potential Impact	Distance Direct	Downstream Hydrological Link
Slieve Beagh SAC	*Habitats* Active blanket bog Natural dystrophic lakes and pools European dry heaths	068 0123	1	16.6km	No
			5	13.4km	
			6	12.7km	
			8	14.7km	
Slieve Beagh Ramsar	*Criterion 1* A large and relatively intact example of a blanket bog and one of the best examples of this habitat in the UK. Also present are nationally important examples of transitional and alkaline fen and oligotrophic/mesotrophic lakes.	068 0123	1	16.6km	No
			5	13.4km	
			6	12.7km	
			8	14.7km	
Upper Lough Erne SAC	*Habitats* Natural eutrophic lakes with Magnopotamion or Hydrocharitiontype vegetation Old sessile oak woods with *Ilex* and *Blechnum* in the British Isles Alluvial forests with *Alnus glutinosa* and *Fraxinus excelsior* (Alno-Padion, Alnion incanae, Salicion alvae) *Species* Otter	068 0123	1	0.170km	Yes
			2	0km	
Upper Lough Erne SPA	*Feature Species* Whooper Swan (wintering population)	0123	1	0.17km	Yes
			2	0km	
			4	1.2km	

European site	Selection / Qualifying Feature	Catchment	Greenway Sections Having a Potential Impact	Distance Direct	Downstream Hydrological Link
Upper Lough Erne Ramsar Site	*Criterion 1* A good representative example of a eutrophic lake and associated swamp, fen and wet grassland. Also a good representative example of wetland, which plays a substantial hydrological, biological and ecological system role in the natural functioning of a major river basin located in a trans-border position. *Criterion 2* A site supporting an appreciable assemblage of rare, vulnerable or endangered species or sub-species of plant and animal. *Criterion 3* A site of special value for maintaining the genetic and ecological diversity of Northern Ireland because of the quality and peculiarities of its flora and fauna. *Criterion 6* A site regularly supporting internationally important numbers of wintering whooper swan.	0123	1	0.17km	Yes
			2	0km	
			4	1.2km	
Lough Oughter and Associated Loughs SAC	Natural eutrophic lakes with *Magnopotamion* or *Hydrocharition* - type vegetation [3150] Bog woodland [91D0] Lutra lutra (Otter) [1355]	0123	2	0km	Yes
			3	0km	
			4	0km	

European site	Selection / Qualifying Feature	Catchment	Greenway Sections Having a Potential Impact	Distance Direct	Downstream Hydrological Link
Lough Oughter Complex SPA	Great Crested Grebe (Podiceps cristatus) [A005] Whooper Swan (Cygnus cygnus) [A038] Wigeon (Anas penelope) [A050] Wetland and Waterbirds [A999]	0123	4	0.9km	Yes
Lough Oughter Ramsar	No specific Criteria are available for this Ramsar Site on the official Ramsar website. However, an 'information sheet' does outline the following features: The lakes and basins are shallow, and the water well mixed and nutrient rich (eutrophic). The site as a whole is the best inland example of a flooded drumlin landscape with many rich and varied biological communities. Nowhere else in the Republic of Ireland does such an intimate mixture of land and water occur over a comparable area. Many of the species of wetland plant, some considered quite commonplace in the Oughter system, are scarce elsewhere. The wintering whooper swan population represents about 3% of the total European population, underlining the international status of the site. Well developed swamp and marsh communities adjoin much of the shoreline. Typically, bulrush *Schoenoplectus lacustris* occurs in front common reed *Phragmites australis* which is in turn backed by a more species rich zone of sedges, grasses and herbs.	0123	4	0.9km	Yes

European site	Selection / Qualifying Feature	Catchment	Greenway Sections Having a Potential Impact	Distance Direct	Downstream Hydrological Link
	The lough supports a substantial population of waterbirds including internationally important numbers of whooper swan (average peak 165) and nationally important numbers of tufted duck (average peak 247) and cormorant (average peak 130) as well as important numbers of species such as great crested grebe, wigeon, teal and pochard. Lapwing and golden plover also utilise the wet grassland areas.				

4.2 ESTABLISHING AN IMPACT PATHWAY

The possibility of significant effects is considered in this report using the source-pathway-receptor model. 'Source' is defined as the individual elements of the proposed works that have the potential to affect the identified ecological feature (or receptor). 'Pathway' is defined as the means or route by which a source can affect the ecological feature. An 'Ecological feature' is defined as the European site selection feature for which conservation objectives have been set for the European sites being screened. Each element can exist independently however an effect is created when there is a linkage between the source, pathway and receptor.

4.2.1 Hydrological Link Affecting Qualifying Habitats and Species

Suspended sediments can enter surface waters as a result of the construction of infrastructure projects where soils are exposed and stockpiled in proximity to surface waters. Contaminants can likewise enter surface waters where construction plant and machinery is being used in proximity to surface waters.

In the absence of specific mitigating measures aimed at preventing suspended sediments or contaminants entering surface waters, it is possible that suspended sediments or contaminants entering surface waters may result in deterioration of water quality and dependent wetland habitats of one or more European sites listed in **Table 1**. It cannot be concluded that the proposed development is not likely to have significant effects on a European site in view of the site's conservation objectives, or Qualifying Criteria with respect to Ramsar Sites.

Figures 2, 3 and **4** above indicate the numerous instances the project travels over a water course. Therefore, numerous hydrological pathways occur in the 00123 and 068 catchments; and in small part 0UN3 catchment. These interactions are typically higher for longer sections such as Sections 1 and 11.

The current proposal is to cross watercourses via existing road network, abandoned railway or pedestrian infrastructure. This negates the requirement for new bridge infrastructure and associated pollution risk.

The main risks therefore considered are where greenway is constructed immediately adjacent to alongside to a watercourse clear example being Sections 7, 11 and 12 which in part travel adjacent to the River Blackwater (see Table 2).

Also considered are works adjacent to a viable small streams or drainage ditch feeding into a river lough that is, or linked to designated site.

Table 2: Sections that align the River Blackwater including approximate distance travelled and downstream designated site.

Section	Catchment	Approximate distance travelled along watercourse	Downstream Site
12	068	10.6km	Lough Neagh and Lough Beg SPA Lough Neagh and Lough Beg Ramsar
11	068	3.3km 4.8km 1.4km	Lough Neagh and Lough Beg SPA Lough Neagh and Lough Beg Ramsar
7	068	0.6	Lough Neagh and Lough Beg SPA Lough Neagh and Lough Beg Ramsar

4.2.2 Effects on Qualifying Species and Habitats

Of the European sites listed in **Table 1**, eleven contain selection features including mobile species capable of behavioural response to construction stage stimuli which may or may not be classed as disturbance.

Lough Neagh and Lough Beg SPA contains selection features including 1 breeding, 1 passage and 19 overwintering species populations of wild birds. Section 12 and wider project terminates at Lough Neagh and Lough Beg SPA (as shown in **Figure 5**). Construction of the proposed development has the potential to result in significant disturbance effects upon these species.

Approximately 7.2km of Section 12 travels through Lough Neagh and Lough Beg Ramsar site (as shown in **Figure 5**). Construction has the potential to impact on habitats and species outlined in Criteria 1, 2, 3, 4 and 7. These include for example lapwing *Vanellus vanellus* and curlew *Numenius arquata* outlined in Criterion 4. Construction of the proposed development has the potential to result in significant disturbance effects upon these species.

A potential impact on pollan *C. autumnalis* in Lough Neagh (Criterion 7) with respect to an upstream pollution event(s) (see Section 4.2.1 above) cannot be excluded in the absence of mitigation.

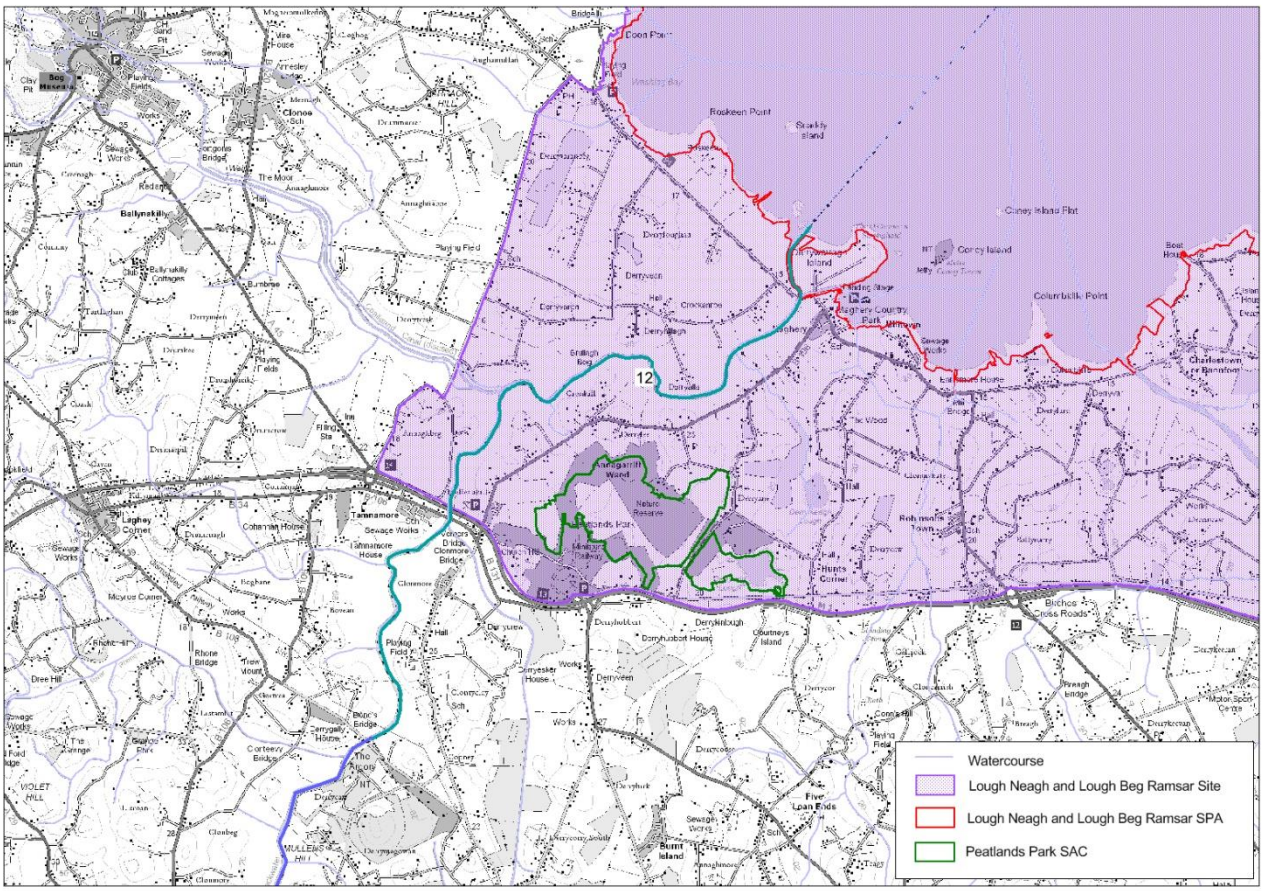


Figure 5: Section 12 relative to Lough Neagh and Lough Beg Ramsar Site.

Magheraveely Marl Loughs SAC (N. Ireland) and Kilroosky Lough Cluster SAC (Rep. of Ireland) are both designated for white clawed crayfish. These waterbodies are either upstream of Sections or have no identifiable hydrological link. In both instances therefore, no impact is predicated upon this species.

Magheraveely Marl Loughs Ramsar Site (Northern Ireland only) has two Qualifying Criteria. No impact is predicted on these Criteria. These sites are upstream of Sections or have no identifiable hydrological link.

Slieve Beagh-Mullaghfad-Lisnaskea SPA contains a small breeding population of hen harrier *Circus cyaneus*. The nearest section, Section 1 is 4.9km from this SPA. The lands between the site and Section 1 (and other sections) comprise of farmland, settlements and various public roads. The construction of any Sections considered in **Table 1** will not result in significant disturbance effects upon this species.

The rationale for this is SNH (2012) advise in their guidance on connectivity for SPAs that a female Hen Harrier core range is 1km, with majority of foraging within 2-3km, and a male has a core foraging range of 2km. As the SPA boundary takes account of the core foraging range of the species surrounding nest sites, the proposed development occurs beyond that range. It is not likely that construction of the proposed development shall result in significant disturbance effects upon this species.

Upper Lough Erne SAC contains one qualifying species namely otter *Lutra lutra*. Otters will use the riparian corridor, lakeshore and associated terrestrial habitats through which Sections 1 and 2 travel. As these works

may impact an otter resting place (a holt or couch) it must therefore be further considered, particularly given the close proximity of Sections 1 and 2 to this SAC.

Deteriorating water quality may have implications for otter, a qualifying feature of Upper Lough Erne SAC. A pollution event(s) impacting a lake or water course (see Section 4.2.1 above) cannot be excluded in the absence of mitigation.

Upper Lough Erne SPA and Upper Lough Erne Ramsar Site share the same designation boundary. Upper Lough Erne SPA has a wintering population of whooper swan. Whooper swan will use riparian corridor, lake shore and associated terrestrial habitats to forage, through which Sections 1 and 2 travel. As these works have the potential to interfere with this species, it must therefore be further considered.

Section 1 is approximately 170m from the shared boundary of Upper Lough Erne SPA, SAC and Ramsar Site at Lisnaskea. The designated area here comprises Lough Head and associated marginal vegetation. Orthophotography show agricultural field enclosures between this shared boundary and Section 1. Section 1 uses the dismantled railway line. Section 2 travels through Upper Lough Erne SPA, SAC and Ramsar Sites (as shown in Figure 6 below). Orthophotography indicates agricultural field enclosures adjoining the designated area comprising the River Finn and associated marginal plant communities.

Woodland abuts the Finn River on the Irish Republic side of this water course within Lough Oughter and Associated Loughs SAC. It may represent an example of the Annex I habitat, 'Alluvial forests with *Alnus glutinosa* and *Fraxinus excelsior*'. However, this Annex I habitat is not a qualifying feature one of Lough Oughter and Associated Loughs SAC. It is a qualifying 'priority' feature for Upper Lough Erne SAC. A subset of Annex I types are considered 'priority' habitat because they are particularly vulnerable and are mainly, or exclusively found within the European Union (JNCC, 2017).

Given the projects proximity to these features a direct physical impact, though unlikely, cannot but ruled out.

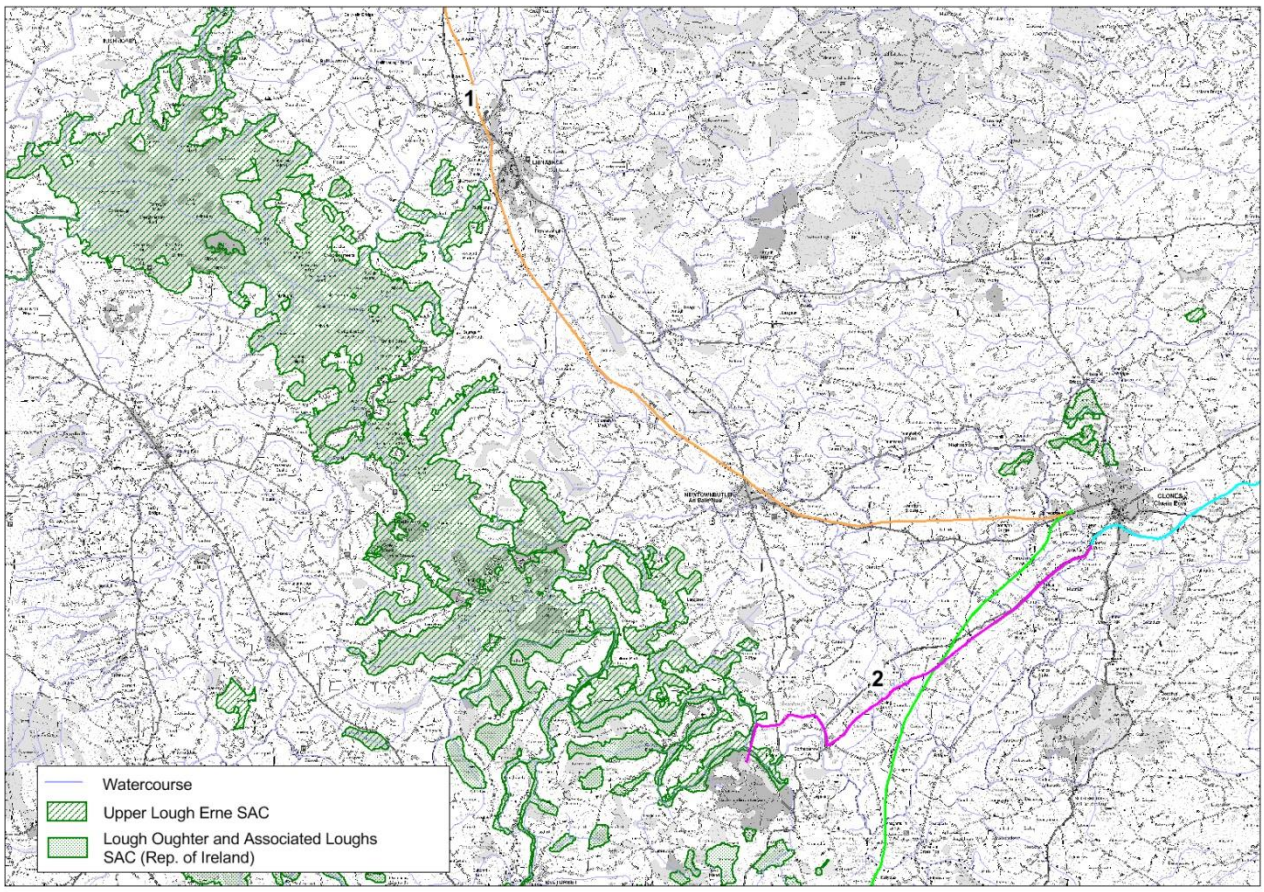


Figure 6: Showing Section 1 relative to Upper Lough Erne SAC (SPA and Ramsar Site); and Section 2 crossing Upper Lough Erne SAC (SPA and Ramsar Site) and Lough Oughter and Associated Loughs SAC.

Figure 7: Showing Section 3 relative to Lough Oughter and Associated Loughs SAC.

Section 3 is utilising the dismantled railway. The proposed route adjoins or lies in close proximity to marginal or associated habitats (within Lough Oughter SAC) surrounding Dawson's and Holy Loughs, Commons Lough, Round Lough, Parisee Lough and Drumellis and Tullyroane Loughs as shown in Figure 7.

In the absence of mitigation, a pollution event(s) could lead to deteriorating water quality may have adversely impact the Annex I selection feature 'eutrophic lake with *Magnopotamion* or *Hydrocharition* - type vegetation'. A directed or indirect impact upon the Annex selection feature 'bog woodland' is considered unlikely.

Otter is a qualifying feature of Lough Oughter and Associated Loughs SAC. In the absence of mitigation, a pollution event(s) could lead to a deterioration of water quality which may in turn negatively impact otter habitat. A likely significant effect therefore cannot be excluded.

Otters will use the lakeshores and associated habitats through which Section 3 travels. As these works may impact an otter resting place (a holt or couch), a significant effect therefore cannot be excluded.

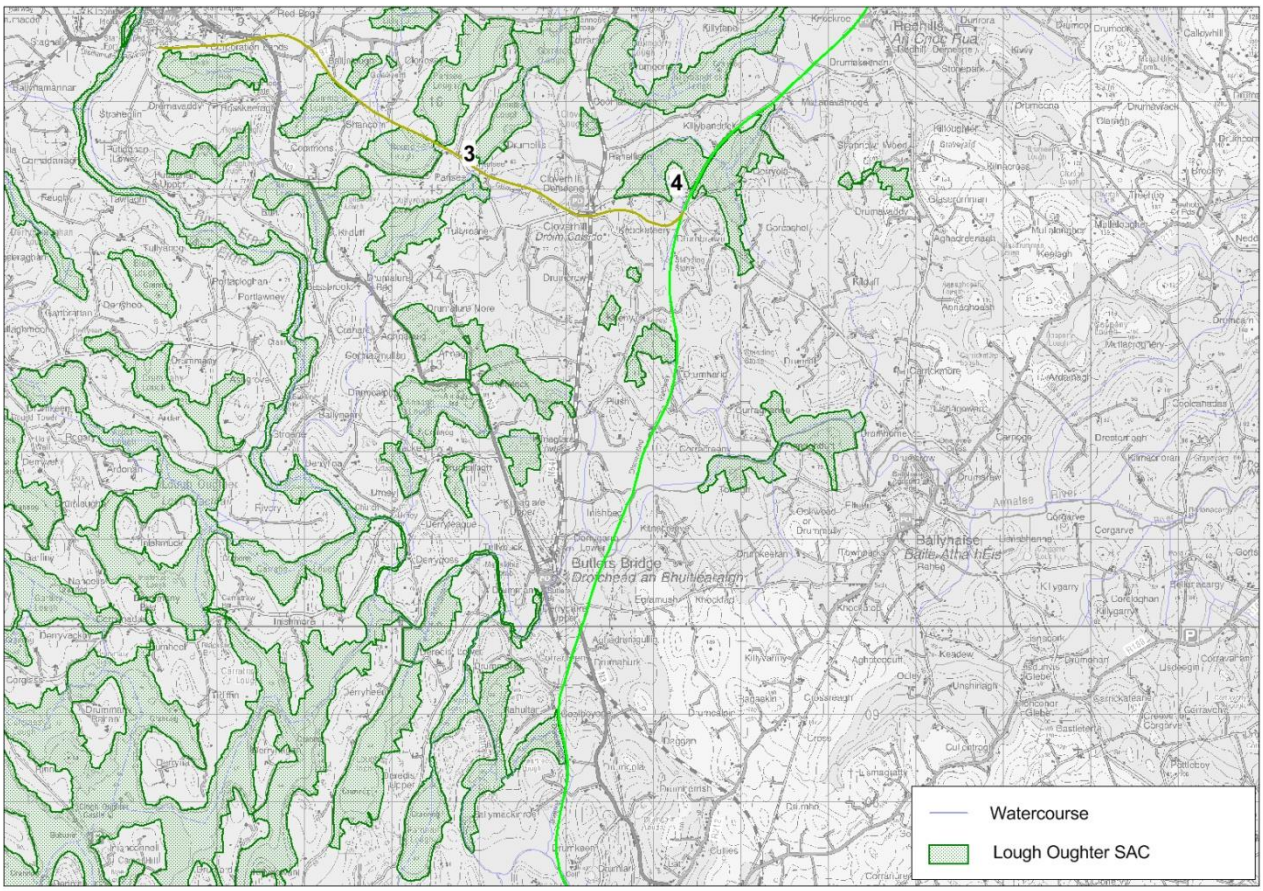


Figure 8: Showing Section 4 relative to Lough Oughter and Associated Loughs SAC.

Section 4 travels through woodland at Rahellistin via the Killybandrick Road as indicated in Figure 8 above. This section also adjoins Lough Oughter and Associated Loughs SAC at two locations further south where it utilises dismantled railway. These are Keeny Lough and associated habitats (including woodland) at Drumharid and Peartree Lough and associated habitats (including woodland) Coolboyoge. The woodlands at these locations may be examples of the Annex I habitat, bog woodland, one of two habitats which are the primary reason for site selection. Bog woodland is also one of a subset of 'priority' habitats.

Given the projects proximity to these features, in the absence of avoidance mitigation a direct physical impact, though unlikely, cannot but ruled out.

Otters may use the lakeshores and associated habitats at Keeny Lough and Peartree Lough. As these works may impact an otter resting place (a holt or couch), a significant effect therefore cannot be excluded.

During Section 4 construction a pollution event(s) could lead to a deterioration of water quality which may in turn negatively impact otter habitat. A likely significant effect therefore cannot be excluded in the absence of mitigation.

Section 4 at its nearest location lies approximately 0.9km east of Lough Oughter Complex SPA and Lough Oughter and Associated Lakes Ramsar Site (both sharing the same boundary). This distance is considered too great to warrant any concerns with respect to disturbance of qualifying bird species for which this SPA is designated. The same conclusion is reached for Ramsar site with respect to associated bird species. However, none of the 'nine criteria for identifying Wetlands of International Importance' are listed for Lough Oughter and Associated Lakes Ramsar Site.

Tenuous hydrological links between Section 4 and this SPA and Ramsar Site do occur. In the absence of mitigation a pollution event(s), (though unlikely given the distance pollutants must travel) a likely significant effect cannot be excluded.

4.3 SUMMARY OF SCREENING ASSESSMENT

Tables 3 and **4** summarise the above considerations in relation to potential impact pathways upon the selection features of European sites in relation to species and habitats considered in this screening exercise.

Table 3: European site SPECIES selection features screened for possible impact pathways

European site	Selection feature (Species)	Impact pathway	Are effects above a de minimis threshold likely?
Lough Neagh & Lough Beg SPA (UK)	• Common Tern • Great Crested Grebe • Whooper Swan • Bewick's Swan • Golden Plover • Pochard • Tufted Duck • Scaup • Goldeneye • Waterfowl assemblage	• Disturbance	A pathway of effect has been established, and likely significant effects cannot be discounted without mitigation measures.
Slieve Beagh – Mullaghfad - Lisnaskea SPA (UK)	• Hen Harrier	• None	No pathway to effect has been established. Likely significant effects are not possible.
Magheraveely Marl Loughs SAC (ROI)	• White-clawed crayfish	• None	No pathway to effect has been established. Likely significant effects are not possible.
Upper Lough Erne SAC (UK)	• Otter	• Habitat deterioration	A pathway of effect has been established, and likely significant effects cannot be discounted without mitigation measures.
Upper Lough Erne SPA (UK)	• Whooper Swan	• Disturbance	A pathway of effect has been established, and likely significant effects cannot be discounted without mitigation measures.
Kilroosky Lough Cluster SAC (ROI)	• White-clawed crayfish	• None	No pathway to effect has been established. Likely significant effects are not possible.
Lough Oughter Complex SPA (ROI)	• Great Crested Grebe • Whooper Swan • Wigeon • Wetland and Waterbirds	• None	A pathway of effect has been established, and likely significant effects cannot be discounted without mitigation measures.
Lough Oughter & Associated Loughs SAC (ROI)	• Otter	• Habitat deterioration and/or Disturbance	A pathway of effect has been established, and likely significant effects cannot be discounted without mitigation measures.

Table 4: European site HABITAT selection features screened for possible impact pathways

European site	Selection feature (Habitat)	Impact pathway	Are effects above a de minimis threshold likely?
Peatlands Park SAC (UK)	• Degraded raised bog • Bog Woodland • Old sessile oak woods with *Ilex* and *Blechnum* in the British Isles • Active raised bog	• None	No pathway to effect has been established. Likely significant effects are not possible.
Slieve Beagh SAC (UK)	• Active blanket bog • Natural dystrophic lakes and pools • European dry heaths	• None	No pathway to effect has been established. Likely significant effects are not possible.
Magheraveely Marl Loughs SAC (ROI)	• Hard oligo-mesotrophic waters with benthic vegetation of *Chara* spp. • Alkaline fens • Calcareous fens with *Cladium mariscus* and species of the *Caricion davallianae*	• None	No pathway to effect has been established. Likely significant effects are not possible.
Kilroosky Lough Cluster SAC (ROI)	• Hard oligo-mesotrophic waters with benthic vegetation of *Chara* spp. • Alkaline fens • Calcareous fens with *Cladium mariscus* and species of the *Caricion davallianae*	• None	No pathway to effect has been established. Likely significant effects are not possible.
Upper Lough Erne SAC (UK)	• Natural eutrophic lakes with Magnopotamion or Hydrocharitiontype vegetation • Old sessile oak woods with *Ilex* and *Blechnum* in the British Isles • Alluvial forests with Alnus glutinosa and Fraxinus excelsior	• None	No pathway to effect has been established. Likely significant effects are not possible.
Lough Oughter & Associated Loughs SAC (ROI)	• Natural eutrophic lakes with Magnopotamion or Hydrocharition - type vegetation • Bog woodland	• Habitat deterioration	A pathway of effect has been established, and likely significant effects cannot be discounted without mitigation measures.

5 CONCLUSION

Where a pathway of effect has been established, and likely significant effects cannot be discounted, the following ecology surveys are proposed at each section to ascertain if qualifying species are present. This can inform site specific mitigation tailored to negate any impact to a qualifying feature(s), species or groups of species.

With respect to water quality and impacts on the receiving water bodies downstream all sections have a pathway of effect. However, in most instances these pathways are long and tenuous; therefore a significant effect on the downstream European site is unlikely. Furthermore, the receiving waterbodies are large and therefore have the capacity to dissipate sediment or other pollutants through dilution. The movement of the stream or river would quickly dissipate sediment and quickly restore water to its original state.

In addition, construction works will not be of a scale or complexity to pose a heightened risk to watercourses i.e. there won't be large scale earthworks or use of hydrocarbons or chemicals that could negatively impact qualifying features downstream.

Where the hydrological link is short, adherence to a Construction Environmental Management Plan (CEMP) or similar document and the recommendations therein will suffice to prevent any impacts on qualify features of species.

Proposed Mitigation for each of the project sections are presented as follows:

Section 1

Whooper swan survey

- Contact Irish whooper swan study group and British Trust for Ornithology (BTO) for data identifying their whereabouts.
- 'Windscreen survey' or on foot - once a month all winter to identify presence / absence in fields affected by the project.

Pollution prevention

- Strict measures to prevent pollutants entering watercourses that enter Upper Lough Erne SAC.
- The contractor should adhere to a prescribed CEMP and measure therein to prevent soil or contaminants entering a watercourse during construction.

Section 2

Otter Survey

- Otter survey along the Finn River/pre defined zone of influence (typically 30m). Of primary concern here is damage to an otter holt or couch. This survey area can be defined once detailed greenway route is established.
- Surveys for otter can be conducted all year round.

Bird survey Whooper swan survey

- Contact Irish whooper swan study group and British Trust for Ornithology (BTO) for data identifying their whereabouts.

- 'Windscreen survey' or on foot - once a month all winter to identify presence / absence in fields affected by the project.

Pollution prevention

- Strict measures to prevent pollutants entering watercourses that enter Upper Lough Erne SAC in N. Ireland and Lough Oughter and Associated Loughs SAC in the Irish Republic.
- The contractor should adhere to a prescribed CEMP and measure therein to prevent soil or contaminants entering a watercourse during construction.

Section 3

Otter survey

- Otter survey along Dawson's and Holy Loughs, Commons Lough, Round Lough, Parisee Lough and Drumellis and Tullyroane Loughs. A zone of influence can be defined once detailed greenway route is established.
- Surveys for otter can be conducted all year round.

Pollution prevention

- Strict measures to prevent pollutants entering watercourses that enter Lough Oughter and Associated Loughs SAC.
- The contractor should adhere to a prescribed CEMP and measure therein to prevent soil or contaminants entering a watercourse during construction.

Section 4

Annex I Bog woodland

- The woodland at Rahellistin (through which Section 4 travels) and the woodlands at Keeny Lough (Drumharid) and Peartree Lough (Coolboyoge) alongside which Section 4 travels require survey to ascertain their Annex I status should works encroach on these habitats. Rahellistin has the potential to be Annex I bog woodland, a qualifying feature of Lough Oughter and associated Loughs SAC. The woodlands at Keeny Lough and Peartree Lough are unlikely to be examples of Annex I bog woodland. However, they should be ruled out as a precaution should works encroach upon these habitats.

Pollution prevention

- Strict measures to prevent pollutants entering watercourses that could enter Lough Oughter & Associated Loughs SAC and / or Lough Oughter Complex SPA.
- The contractor should adhere to a prescribed CEMP and measure therein to prevent soil or contaminants entering a watercourse during construction.

It is our opinion that bird surveys are not required for Section 4

Section 12

Bird surveys

- Contact the BTO for data indicating breeding wader sites along the greenway that travels within the Ramsar Site.
- Contact the Irish whooper swan study group for data indicating whooper swan along the greenway that travels within the Ramsar Site.
- Breeding wader survey, four visits (April to July) along the greenway that travels within the Ramsar Site so to identify breeding activity.
- Whooper swan survey (on foot) along proposed greenway within the Ramsar Site - surveying once a month all winter to identify presence / absence.

Pollution prevention

- Strict measures to prevent pollutants entering watercourses that enter Lough Neagh SPA and Ramsar Site.
- The contractor should adhere to a prescribed CEMP and measure therein to prevent soil or contaminants entering a watercourse during construction.

Sections 6, 7, 8, 9, 10 &11

Pollution prevention

- Strict measures to prevent pollutants entering watercourses that enter Lough Neagh SPA and Ramsar Site.
- The contractor should adhere to a prescribed CEMP and measures therein to prevent soil or contaminants entering a watercourse during construction.

General recommendations applicable to all sections

Abandoned railway lines have often escaped agricultural improvements - high organic and inorganic fertilizer inputs, silage cutting etc., more so where they occur on raised ground. As such, they often harbour plant species that are uncommon or rare in the wider country side and may support protected species. Similarly, for disused canal sections, where there are areas of standing water, there could be extant populations of breeding smooth newt.

6 REFERENCES

CIEEM (2013) *Guidelines for Preliminary Ecological Appraisal*, Technical Guidance Series, Chartered Institute of Ecology and Environmental Management, Winchester.

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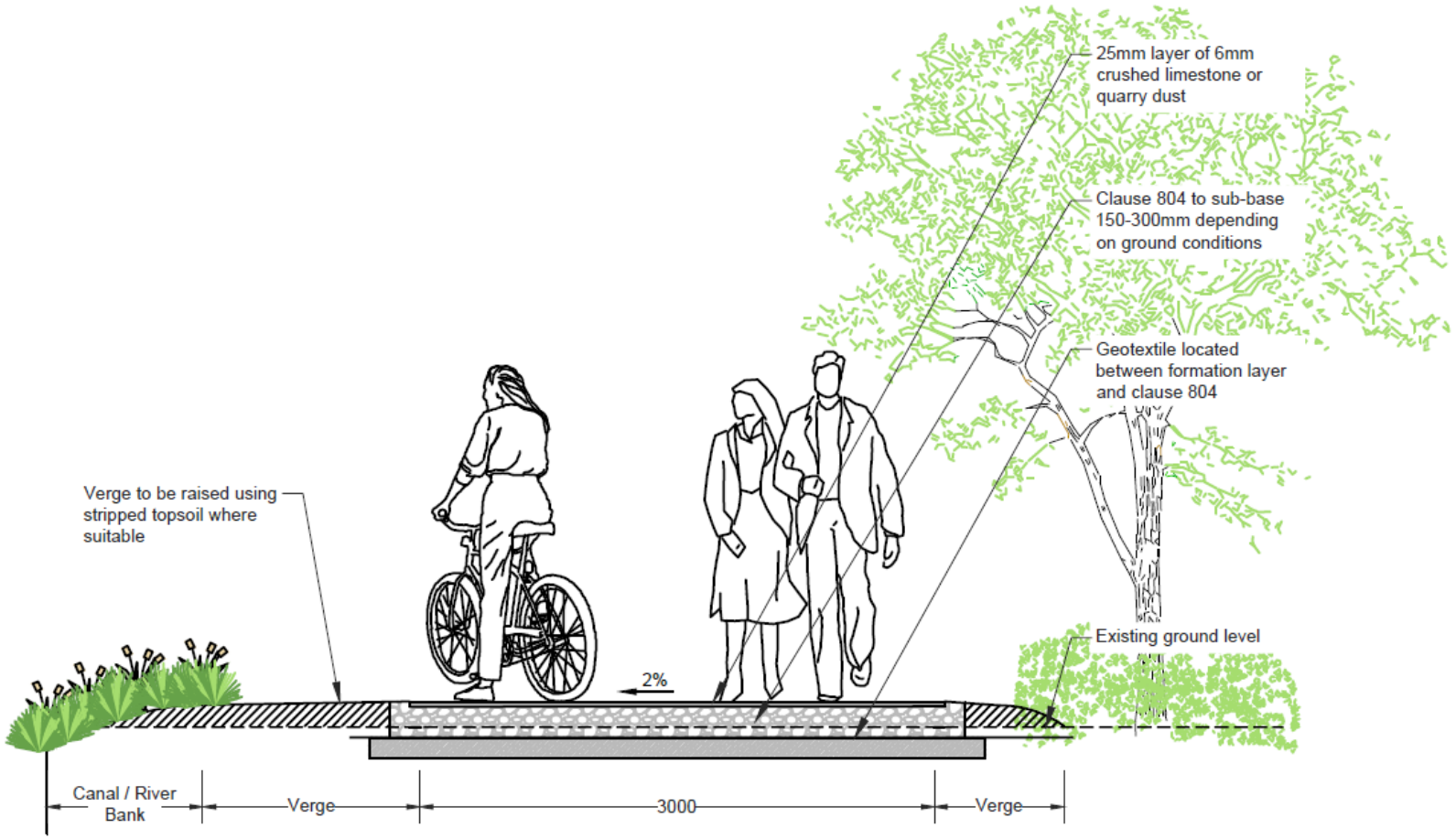
CIEEM (2016) Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater and Coastal, 2nd edition. Chartered Institute of Ecology and Environmental Management, Winchester.

CIEEM (2016b) *Code of Professional Conduct*, Chartered Institute of Ecology and Environmental Management, Winchester.

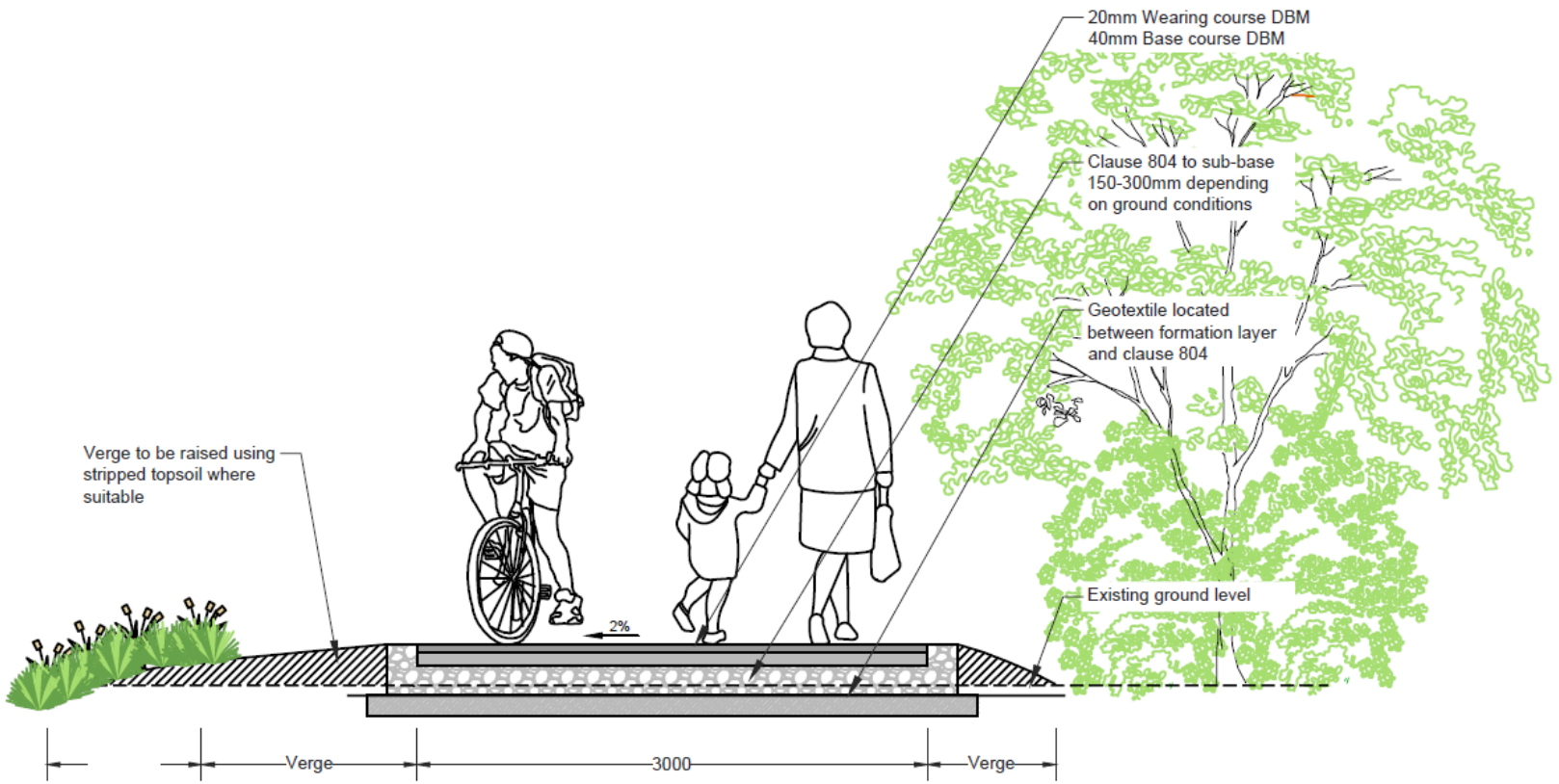
SNH (2012) Assessing Connectivity with Special Protection Areas (SPAs)

JNCC - Joint Nature Conservation Committee (2017) Habitat Types of European Interest, available at: http://jncc.defra.gov.uk/page-1467 accessed: 05/01/2016

APPENDIX 1:



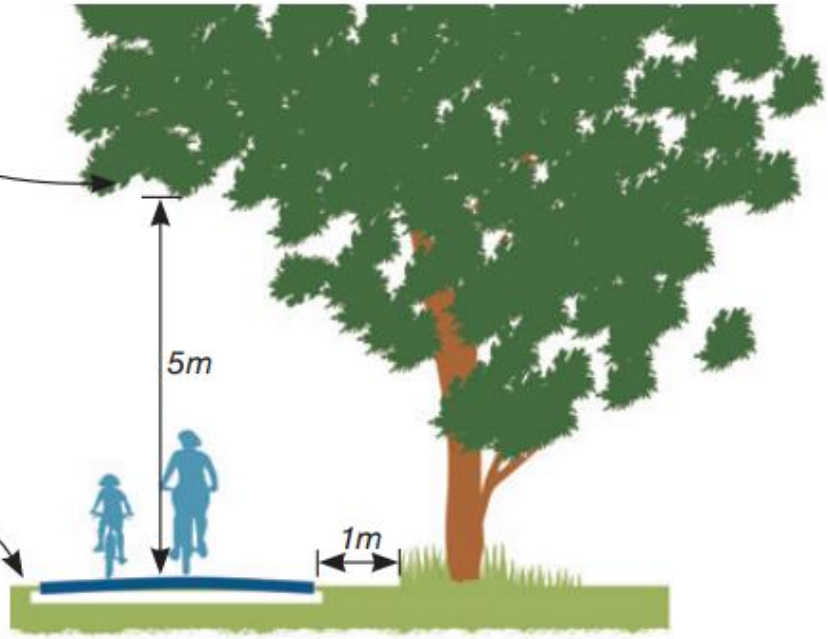
TYPICAL UNBOUND SURFACE
SCALE 1:25



TYPICAL BOUND SURFACE
(Approach to road crossings 10m either side)
SCALE 1:25

Prune overhanging branches to ensure sufficient clearance for cyclists (2.5m) and equestrians (3.5m). Aiming for 5m ensures there is some scope for growth and movement of branches in the wind

mowing the 1m verge either side of the path as often as is required to prevent vegetation falling into and blocking it, ideally twice a year



manage vegetation along the greenway to preserve sightlines, especially around corners. Even relatively low vegetation (1m) can conceal small children or adapted bikes