



DRAFT Strategy
for a Long Distance, Off-Road,
Multipurpose, Recreational
Path through Central Ulster

April 2017

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Foreword

This proposed Ulster Canal Greenway Strategy utilises the original route of the Ulster Canal, in addition to other historical industrial heritage infrastructure such as disused railway lines, to connect the main market towns of Mid Ulster, creating a network of continuous, high quality walking and cycling paths. This will cater for local communities, domestic visitors and foreign tourists, through the intimate drumlin and Lakeland landscapes of mid Ulster – *a land of myths and poets, where gentle spirits will find sustenance and lovers of life will flourish*. Waterways Ireland and the local authorities of counties Monaghan, Cavan, Fermanagh, Armagh, and Tyrone are investing in the ‘Borderlands’ – Ireland’s undiscovered gem, where time slows down to a walking pace and people are connecting once more with nature, and with all that is natural including sustainable transport, biodiversity, ethical food production, eating local produce and living well. There are numerous tangible and intangible benefits of this proposal that will positively impact a wide cross section of Border community along this *shared heritage landscape*.

The Ulster Canal Greenway will provide a physical and metaphorical ‘spine’ for our work. It will enable the visitor to get around the region in a sustainable way, while encouraging them to stay in the region for a few days rather than pass through in a few hours by car on their way to the coast. It will encourage local entrepreneurs to develop businesses with a green theme along the route. Future development of this Greenway will in no way preclude a future restoration proposal for the Ulster Canal as a navigation. If anything, we envisage development of the Greenway will renew an appreciation of the historic canal and whet the appetite for a fully restored canal, while at the same time aid in protecting the line of the canal from further development, thus ensuring its restoration in the future is still achievable. This is a truly visionary project, which will require a remarkable level of collaboration between the local authorities, the private sector and local landowners on both sides of the border. The amenity once complete has the potential to drive economic growth and transform lives in this relatively undeveloped part of Ireland. Similarly, the legacy to the region from the shared learning and close working relationships, which develop between the partner organisations during the delivery of this project, will reap benefits for the region for many years to come.

Our Mission – The Partnership

Waterways Ireland and the Local Authorities have come together to form a partnership for the benefit of the people of Mid Ulster and the Island of Ireland. Our mission is to create a strategic long distance network of off-road walking & cycling trails using the Ulster Canal and disused railway network to achieve connectivity with the main towns across the region. The vision is that in addition to providing a quality sustainable transportation corridor and leisure amenity for use by local people, the network will be of sufficient quality and length to serve as a beacon to attract visitors into this underdeveloped tourist region. This will ensure that tourism plays a more significant role in driving sustainable economic development in the region going forward. As a multi-agency partnership, it is our unified mission to provide and promote high quality recreational environments centred on the Ulster Canal, for the benefit of our stakeholders, user groups and the wider community. In doing this, we aim to encourage visitors to the Ulster Canal and Central Ulster by providing facilities which are fit for purpose, accommodate a wide range of activities, accessible to all, environmentally sensitive and take into account heritage values.

1. Introduction

1.1 Waterways Ireland

Waterways Ireland is the North/ South Implementation Body responsible for the inland navigable waterway systems in Ireland. The Body was formally established by means of an international treaty made on 8th March 1999 between the British & Irish Governments. This treaty was given domestic effect, North and South, by means of the North/ South Co-Operation (Implementation Bodies) (Northern Ireland) Order, 1999 and the British Irish Agreement Act, 1999 respectively.

The Department of Infrastructure in Northern Ireland and the Department of Regional Development, Rural Affairs, Arts and the Gaeltacht in the Republic of Ireland are the sponsoring Departments with responsibility for the Body.

Waterways Ireland operates under the policy direction of the North South Ministerial Council (NSMC) and the two Governments, and is accountable to the Northern Ireland Assembly and the Houses of the Oireachtas.

The main functions of Waterways Ireland are the management, maintenance, development and restoration of the inland navigable waterway system throughout the island of Ireland, principally for recreational purposes.

1.2 The Local Authorities

Local Authorities, in both the Republic of Ireland and Northern Ireland, form part of government. They are the arm of government, which is local to the citizen, and are responsible for delivering many local services, including the provision of local recreational amenities. They are also responsible for the rollout of national policy at a local level.

The area covered by this Strategy crosses through the administrative areas of a number of Local Authorities. They are:

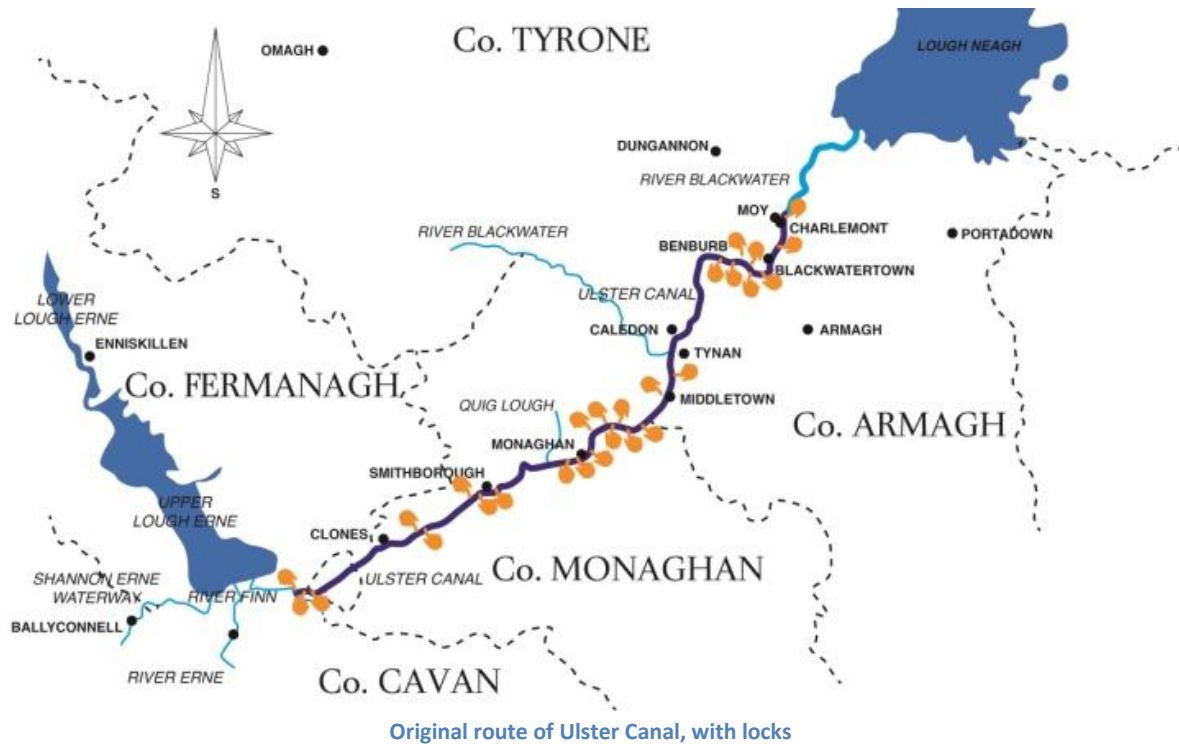
- Armagh City Banbridge Craigavon Borough Council (ACBCBC)
- Fermanagh & Omagh Council (FOC)
- Monaghan County Council (MCC)
- Cavan County Council (CCC)
- Mid Ulster Council (MUC)

The following functions or powers of local authorities are relevant to this project:

- Provision of recreational amenities
- Provision of cycle infrastructure
- Development of local tourism amenities
- Promotion of local tourism
- Promotion of the UN Sustainable Development Goals at a local level
- Promotion of the Smarter Travel agenda at a local level
- Creation of a high quality environment in which to both live and work

This project provides the local authorities with a unique opportunity to collaborate on a project, which will help each local authority area to connect into the wider region. Local authorities are key drivers of development in local communities. The footfall created by users of the Ulster Canal Greenway will provide opportunities for local entrepreneurs to establish and enhance businesses, and bring much-needed prosperity to this part of rural Ireland.

1.3 The Ulster Canal



The Ulster Canal forms the backbone of our proposed long-distance route. It was to be the final link in Ireland's inland navigation system, providing a connection between the Shannon-Erne system and the Lough Neagh basin. The navigation route was 93km long, comprising 74km of canal which included 26 locks. After several delays and redesigns to combat budget over-runs, the canal finally opened in 1841. There were many problems from the outset, including that to save money, the width of the locks and bridges had been reduced, meaning that loads coming from the Shannon system had to be transferred to special narrower 'lighters' for the Ulster Canal portion of the trip, adding to journey time and expense.

There were also issues around maintaining sufficient water depth in the highest reaches during summer months. Finally, the railway reached Ulster and took over as being a faster and cheaper mode of transport. The last trading boat used the canal in 1929 after which it officially closed two years later. In Northern Ireland, a Warrant of Abandonment was granted and the canal was sold off to adjoining landowners. In the newly formed Republic, the warrant was refused. When the Lagan Navigation Co was dissolved in the 1930's, the canal became 'ownerless goods' in the eyes of the law, and as such passed to the Minister for Finance, who transferred ownership through the State Properties Act to the Office of Public Works. Monaghan County Council acquired approximately 50% of the Republic of Ireland section of canal in 1974 under the Derelicts Sites Act. Ownership of the remainder – mainly from Smithboro to Clones – still lies with the OPW.

2. Vision

Our vision is to create a network of interconnected, off-road walking and cycling trails using disused rail and canal infrastructure, linking the towns and villages of central Ulster and creating a way for local people and visitors alike to enjoy our high quality landscape, whilst providing a catalyst for economic development to this deprived border region.

2.1 The Vision: Ulster Canal Greenway

At the North South Ministerial Council meeting in June 2015, Waterways Ireland was instructed to pursue the development of the banks of the Ulster Canal as a greenway. This was seen by the NSMC as a practical means of preserving the route of the canal to protect it against further erosion from development, which would make its restoration at a future date increasingly difficult.

The central spine of the route therefore started to form around the Ulster Canal. However, the Local Authorities were anxious that the route served the population centres of the region, so that it could support the local authorities' work on promoting Local Agenda 21 around sustainable development, and in particular smarter travel choices.

Therefore, the route expanded to include the main commuter destinations in the region, namely:

- Armagh,
- Enniskillen and
- Cavan.



Figure 1: Ulster Canal Greenway, Monaghan

The Partners finally considered the project in terms of the National Cycle Network (NCN) and the latest strategic thinking around tourism. They realised that the proposed route very closely aligned to recommendations being made by both the NCN and Fáilte Ireland, and these were also brought into the Strategic Vision of the project.

2.2 Policies in Support of this Vision

Our vision of a long distance greenway fits with national, regional and local policy on many levels, as outlined in the table below. A comprehensive document is available which gives a lot of information on each of these policies. You can access it on www.ulstercanalgreenway.com. Below is an overview of the main points:

Policy Categories	Northern Ireland	Republic of Ireland
Sustainable transport	Bicycle Strategy for Northern Ireland Exercise – Explore – Enjoy: A Strategic Plan for Greenways	National Sustainable Transport Policy – Republic of Ireland A Sustainable Transport Future - Smarter Travel
Spatial Planning	The Spatial Strategies on the Island of Ireland – Framework for Collaboration Regional Development Strategy (RDS) 2035 in Northern Ireland	The Spatial Strategies on the Island of Ireland – Framework for Collaboration National Spatial Strategy (NSS)
	Cross-border spatial planning project, CROSPLAN	Cross-border spatial planning project, CROSPLAN
	Local Development Plans & Strategic Planning Policy Statements (SPPS)	Respective County Development Plans
Tourism, Recreation & Amenity	Towards a Border Development Zone: Scoping Study – Tourism & Recreation Local Development Plans	Fáilte Ireland research has recognised three distinct categories that would utilise a Greenway; Social Energisers, Culturally Curious and Great Escapers. Respective County Development Plans
Biodiversity	Northern Ireland Biodiversity Strategy, Local Biodiversity Action Plans	National Biodiversity Plan, Sectoral Biodiversity Plans
Peace building	Development of the Greenway affords the opportunity to create a unique Shared Space, symbolising the region’s journey towards peace in support of many border county Development Plans, policies and strategies. Waterways Ireland by its very nature as a North South Body embodies the peace building process between Northern Ireland and the Republic of Ireland	
Health & Well-being	What is the Best Dose of Nature and Green Exercise for Improving Mental Health? A Multi-Study Analysis	Healthy Ireland - A Framework for Improved Health and Wellbeing (2013-2025)
Heritage, Arts & Culture	NIEA Guidance on Re-use of Canals and Navigations in Northern Ireland Waterways Ireland Heritage Plans Local Development Plans	National Heritage Plan, Local Authority and Waterways Ireland Heritage Plans Respective County Development Plans

2.3 How we propose to achieve the Vision

The long term goal for this project is the creation of off-road walking and cycling paths using the original route of the disused Ulster Canal (as far as is practicable) and abandoned railway lines which link into it. Pathways which bring disused transportation infrastructure back into use are popularly known as 'greenways'. The route will link central Ulster to the eastern coast, particularly through Portadown to Newry and onwards towards Dublin, and through Lisburn towards Belfast and Larne. To the west, the route will reach towards Sligo and Donegal via Enniskillen and to Leitrim and Mayo via Cavan.

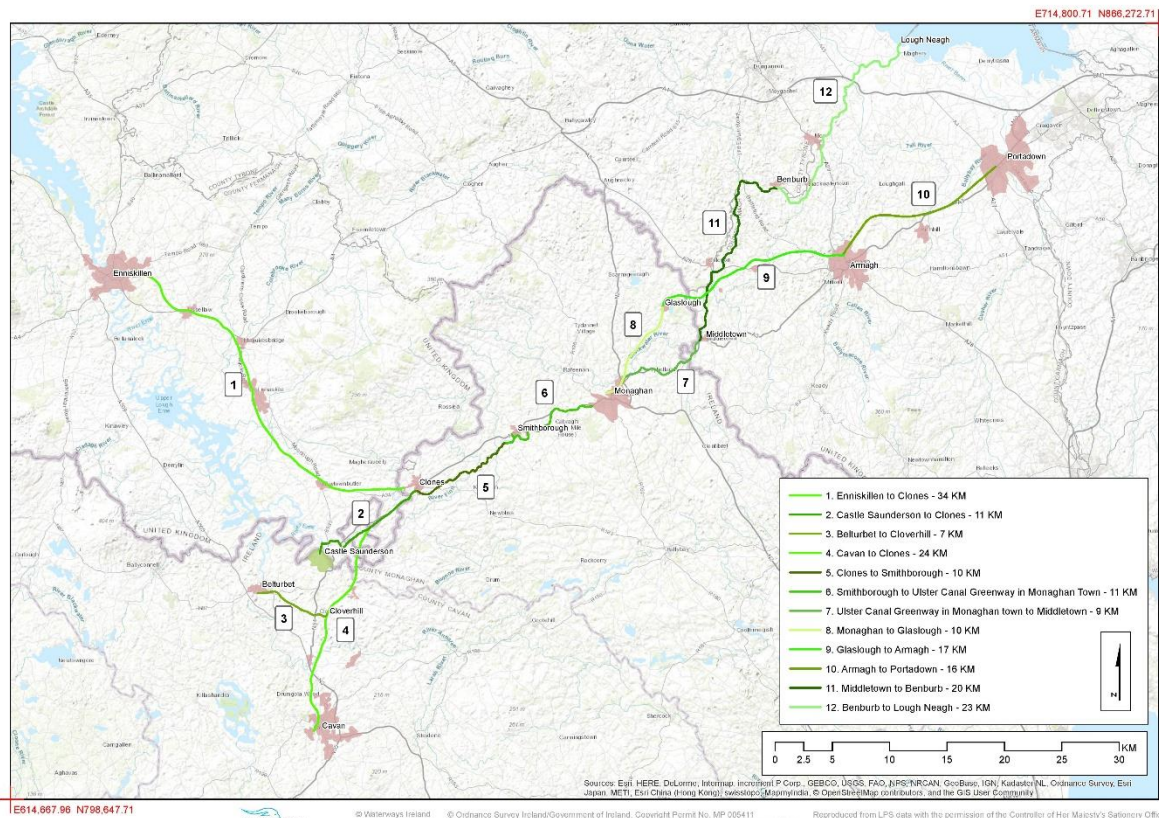


Figure 2: Overview of the routes linked in to the Ulster Canal Greenway & subject to this Strategic Environment Assessment process

Due to the length of the overall route, it is envisaged that the project will be achieved in phases. The first phase, a 4.2km section through Monaghan town, has already been completed in 2013, and was used over 100,000 times in both 2014 and 2015.

3 Strategic Environmental Assessment

Following consultation with the statutory environmental authorities in Northern Ireland (Northern Ireland Environment Agency) and the Republic of Ireland (Environmental Protection Agency), Waterways Ireland and its project partners agreed that the Strategy would benefit from a Strategic Environmental Assessment (SEA). In this way, the final proposal would have sustainability enshrined in its core objectives and the routes could be chosen in a more holistic and strategic manner.

3.1 Why an SEA?

Strategic Environmental Assessment is being applied to this Greenway Strategy to ensure potential environmental impacts, both positive and negative, that could occur due to the development of the Ulster Canal Greenway are identified at the earliest possible stage. The purpose of the SEA is to ensure that environmental considerations are built into the plan making process and the plan is as robust as possible in the wider environmental context.

The SEA is required under EU Directive 2001/42/EC, which was transposed in Northern Ireland through SR No. 280 of 2004 and in Ireland through S.I. 435 of 2004 and S.I. 436 of 2004. At this draft Plan stage the output of the SEA is a SEA Environmental Report.

Habitats Regulation Assessment may also be required for the routes from the Greenway Strategy due to the proximity to, and potential for impacts to, EU designated environmental areas: Special Areas of Conservation and Special Protection Areas. These protected environmental areas are designated under the Habitats Directive (92/43/EEC) and the Birds Directive (EC/79/409) respectively and are called Natura 2000 sites. Both Directives seek to protect and conserve designated habitats and species of Community importance. At this draft Strategy stage a Habitats Regulation Assessment (HRA) Screening Report has been undertaken.

3.2 SEA and Strategy Integration

Regular meetings between RPS (consultants undertaking the Environmental Assessments) and Waterways Ireland and their project partners ensured ongoing communication and information exchange which allowed the organisation to evaluate all of the route options from an environmental perspective.

3.3 Statutory SEA Consultees

To start the SEA consultation process, we have contacted a number of statutory agencies to get their views on the proposed project. The statutory consultees in the SEA process are:

- Northern Ireland Environment Agency (NIEA) (formerly Environment and Heritage Service).
- Environmental Protection Agency (EPA);
- Department of Environment, Community and Local Government (DECLG);
- Department of Agriculture, Food and the Marine (DAFM);
- Department of Communications, Energy and Natural Resources (DCENR); and
- Department of Arts, Heritage, Regional, Rural and Gaeltacht Affairs (DAHRRG).

3.4 Non-Statutory SEA Consultees

The Partners are very aware of the many angles to this project, including heritage, tourism, biodiversity, sustainable travel, climate change, rural transport, healthy living and rural development. Therefore, we have consulted as widely as possible with as many stakeholders as possible. These include:

Birdwatch Ireland	Inland Fisheries (DAERA)
Coillte	Inland Waterways Association of Ireland
Council for Nature Conservation and the Countryside (DAERA)	Irish Farmers Association
Cycling Ireland	Irish Central Border Area Network Ltd (ICBAN)
Department for Infrastructure	Irish Rail
Department for Infrastructure - Rivers Agency	Irish Wildlife Trust
Dept of Agriculture, Environment and Rural Affairs	Local Authority Waters and Communities Office (LAWCO)
Department of Agriculture Food and the Marine	Neagh Bann International River Basin District - NIEA and LAWCO
Department of Arts, Heritage, Regional, Rural and Gaeltacht Affairs	NI Environment Link
Dept of Communications, Climate Action and Environment	NI Forest Service
Dept of Communities - Historic Env Division	North Western International River Basin District - NIEA and LAWCO
Dept. for the Economy	Northern and Western Regional Assembly
Dept. of Communications, Energy and Natural Resources	OPW
Eirgrid	Outdoor Recreation NI (Includes Outdoor NI and Cycle NI)
ESB	RSPB
Environmental Protection Agency	SONI
Fáilte Ireland	Sustrans
Fisheries Ireland	Tourism Ireland
GSI	Tourism NI
Geological Survey of Northern Ireland (GSNI)	Translink
Heritage Council	Transport Infrastructure Ireland
Infrastructure NI	Ulster Farmers Union
	Ulster Wildlife
	Woodland Trust

3.5 Engaging with the Public

The development of this draft Greenway Strategy and accompanying SEA /AA is an iterative process that enables both environmental authorities and the general public to get involved early on in the process in order to give submissions and comments before any final decisions are adopted. To fully engage with the public, this draft Greenway Strategy and associated SEA and AA will be:

- put on public display at both Council and Waterways Ireland premises,
- presented at a number of public consultation meetings at community centres along the proposed routes
- sent to the prescribed regulators and environmental authorities
- written submissions are invited on both the Environmental Reports and draft Plan
- Members of the public, community groups, or organisations could engage with us by:
 - Attending a public meeting
 - Requesting a one-to-one meeting with an officer
 - Submitting a written comment on the Plan or SEA
 - Completing the online survey

Waterways Ireland and its project partners will also take the proactive step of placing all documentation associated with every step of the Greenway Strategy and SEA process on their website: www.waterwaysireland.org

The screenshot displays the Waterways Ireland website interface. At the top left is the logo for Waterways Ireland, featuring a stylized blue wave and the text 'Waterways Ireland' with the Irish name 'Uiscebhéalí Éireann' and 'Waterways Aillean' below it. To the right of the logo are social media icons for Facebook, Twitter, and YouTube, along with a 'Select Language' dropdown menu and a search bar. Below the header is a dark navigation bar with links: Home, Using the Waterways, Events, Do it online, Learning, Corporate, Media, Commercial Activity, Visitors Centre, and Contact Us. The main content area has a teal header with 'Home > Ulster Canal'. A purple banner is at the top of the article. The article title is 'The Ulster Canal Greenway Development Strategy'. The text describes a long-distance Greenway project in Northern Ireland and the Republic of Ireland, linking Castle Saunderson in Co. Cavan to Charlemont in Co. Armagh. It mentions that the project is being developed voluntarily to plan a Greenway that encourages sustainable travel and visitor trips, while preserving heritage elements and providing recreational facilities. A 'Strategic Environmental Assessment' section follows, detailing the planning process and the involvement of the Northern Ireland Environment Agency and the Environmental Protection Agency. A 'Quick Finder' sidebar on the right allows users to 'Choose a Waterway' (listing Barrow Navigation, Erne System, Grand Canal, Lower Bann Navigation, Royal Canal, Shannon Erne Waterway, and Shannon Navigation) and 'Choose an activity' (listing Walking, Cycling, Boating, Power Sports, Canoeing, Sailing, and Angling). At the bottom of the article is a photograph of two people riding bicycles through a stone archway over a path.

Figure 3: Waterways Ireland website

4. Issues Affecting the Strategy

There are many things to be considered in devising this draft Strategy and selecting the route. Many issues we can extract from documents and policies and from listening to advice from statutory agencies. Other issues will only become apparent when we commence engagement exercises with local stakeholders and communities. Central to the success of this Strategy and completion of the SEA is to gather the information from all the sources through this consultation exercise, then fit it together with the SEA, consider its implications, then make any adjustments necessary to the proposed project to take account of the information we have received. Some of the issues we will be looking at are outlined below. It should be noted that there are interrelationships between many of the categories below. The natural and built environment are key components of our cultural landscape. Wildlife inhabits not only the natural habitats that surround us but also our built heritage such as roosting bats and birds. Wildlife and heritage appreciation also has a direct bearing on our health as had been widely documented through documents such as *Wellbeing through wildlife* by the RSPB. Throughout this process we will be mindful of these relationships between our various forms of heritage (built, natural, cultural, industrial and landscape):

4.1 Natural Environment

The Greenway will connect a number of urban areas, but will for the most part run through open countryside and agricultural land. While the greenway itself will not be built on any watercourses, it will run parallel to the disused Ulster Canal, sections of which remain watered. Other sections of the Ulster Canal connect via adjacent rivers to Special Areas of Protection and Special Areas of Conservation. These include Upper Lough Erne and the Lough Oughter Complex, which are designated as part of the European Natura 2000 network, and encompass two SAC's and one SPA, and Lough Neagh, which is an SPA. Figure 4 demonstrates the International and European environmental sites in the vicinity of the Ulster Canal Greenway.

There are also other internationally and nationally protected environmental designations, such as wetland Ramsar Sites, Areas of Special Scientific Interest, Natural Heritage Areas, and Salmonid Lakes and Rivers. The lakes, rivers, wetlands, hedgerows, woodlands and bogs across the central Ulster region support a large diversity of plant and animal life. The Greenway also offers potential to connect green spaces through provision of Green Infrastructure in line with the European Commission 2013 Green Infrastructure (GI) – Enhancing Europe's Natural Capital. Figure 5 demonstrates the National environmental designated sites in the vicinity of the Ulster Canal Greenway.

Phase I of the Greenway through Monaghan town was carried out under the guidance of a 'Biodiversity Team' and a biodiversity management plan was put in place to ensure that the amenity itself provided maximum benefits for wildlife, but also that the project was delivered in a way that minimised the impact on wildlife during the construction phase. Consideration was also given to how to use the amenity to raise public awareness of issues around biodiversity. This approach has been very successful, and we intend to continue to treat Greenway as a learning resource, and as a key facet in the Councils' public awareness programmes around biodiversity, sustainable development and climate change.

Figure 4 International and European Environmental Designations

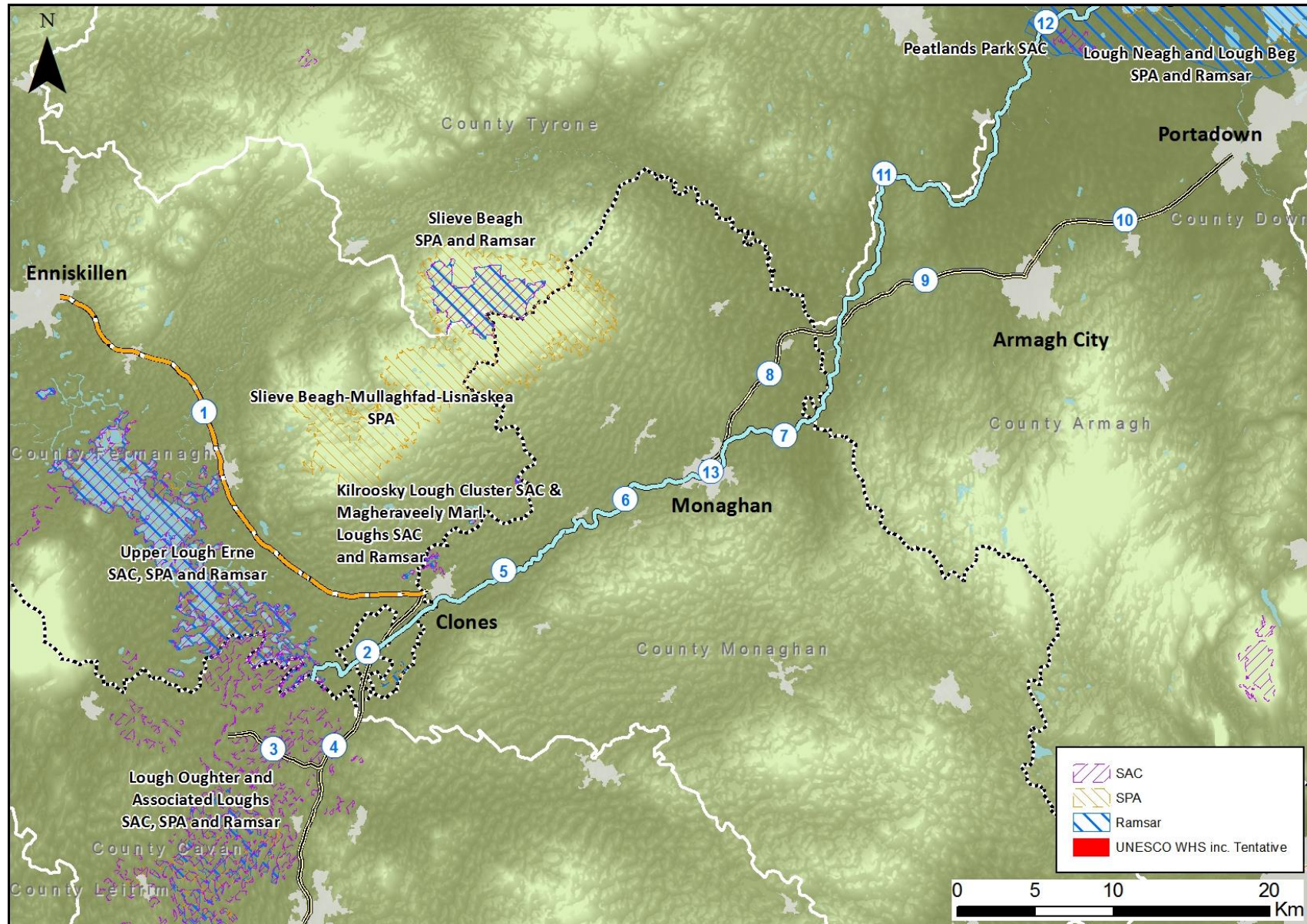
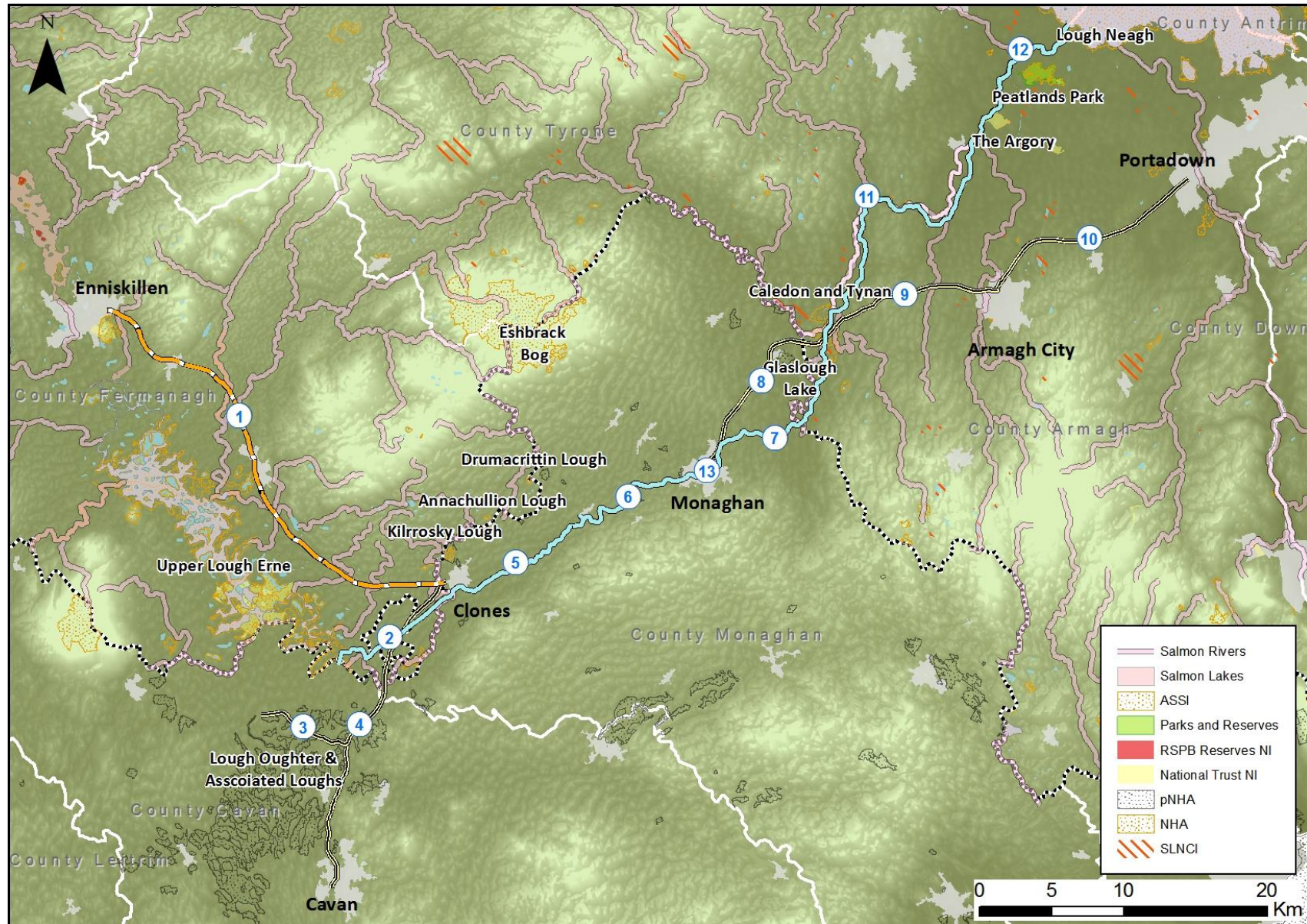


Figure 5 National Environmental Designations



4.2 Cultural, Architectural & Archaeological Heritage

The original development of the Ulster Canal and the railways has left us with a wealth of industrial heritage structures. The architecture of many of the buildings and structures along the proposed route are of conservation value.

Where possible, we will endeavour to restore and reuse these built heritage features as part of the route, thereby ensuring their preservation status into the future. Many of the heritage features are in private ownership. In some cases, their rural location has left them economically unviable and they have fallen into disrepair. The Greenway offers an opportunity to develop some of these premises to provide services to greenway users, such as accommodation, cycle storage, tea rooms, and other tourism-related business opportunities. This may assist in the continued battle to ensure that such structures are not lost to the ravages of time.

4.3 Climate Change

Climate change has been acknowledged as being one of the biggest threats facing our society over the next twenty years. Wetter winters and rising water levels will affect ground conditions and impact on the plant and animal communities along the proposed route. The SEA will include an assessment of the implications of new challenges which are likely to be posed due to climate change.

Information points along the route will help the Councils to raise public awareness of this important issue. The Councils also have plans to install weather stations at locations close to schools, and to encourage schools across the region to link together to collect and monitor the data. The symbolism of these lost transportation links across the central Ulster region helping to link its people up once again to meet this new threat to our sustainability is a powerful one.

4.4 Health & Safety

Health and safety of greenway users is of paramount importance, and measures to safeguard the safety of users will need to be built in to the design of the route. Things like access points for ambulances, for example. However the responsibility on the user to do so according to a code of good practice needs to be considered, as does how incidents with livestock might be avoided.

4.5 Connectivity

We will endeavour to connect as many urban centres as possible to the Greenway, so that the route can serve as a transportation corridor for commuters. Within towns, connections from residential areas and the main centres of employment will be investigated. From a tourism perspective, we propose to bring the greenway as close as possible to the amenities that visitors wish to access. These might be practical access sites such as accommodation bases, restaurants, tourist information points and visitor attractions.

4.6 Access for All

The Local Authorities are key agents in rolling out government objectives around the Barcelona Declaration. We are committed to making all our amenities 100% accessible, and we intend that our greenways will be no different in this regard. Waterways Ireland is also committed to providing

equality of opportunity for all users of their amenities and to developing an inclusive recreational environment. Their commitment was recognised in the O2 Ability Awards 2010, where the organisation received the coveted award for Environmental Accessibility. We intend to bring the learning from past projects forward and apply it to the Ulster Canal Greenway, to create a Model of Best Practice in Environmental Accessibility on an international scale.



Figure 6: Testing out the accessibility features of the Monaghan section of the Ulster Canal Greenway

Due to the level gradient of the canal, the greenway will be a very suitable environment for people with limited mobility. Co Monaghan was one of the first in Ireland to sign up to the Dublin Declaration and become an Age Friendly County. Its commitment to making all amenities suitable for use by older people as well as those with disabilities will be considered when designing the placement of seating etc. along the greenway.

5. Route Details

5.1 What will it look like?

The Greenway will look like a wide footpath, or narrow lane. The 'paved' surface will be about 3 metres in width. There will be about a metre of a verge to either side of this. Where needed, fencing and hedging will be provided, to prevent animals from surrounding farmland getting on to the greenway. Where it passes housing, screening such as a planting scheme, closed board fencing or security fencing may be provided.



Figure7: Monaghan section of the Ulster Canal Greenway

The actual surface of the greenway will vary. In rural areas, it will be finished with dust/ gravel.

In urban areas, it will fit in with the surrounding finishes, so may be finished with concrete or tarmac, or may be finished with a red resin to make it clear to road users that it is a cycle lane.

This is in accordance with best practice and relevant guidelines: the preferred surface for the greenway in rural areas is an unbound dust surface, to give a sense of the environment, and to maintain the attractiveness of the route, which is seen as equally as important as the comfort of the cyclist.

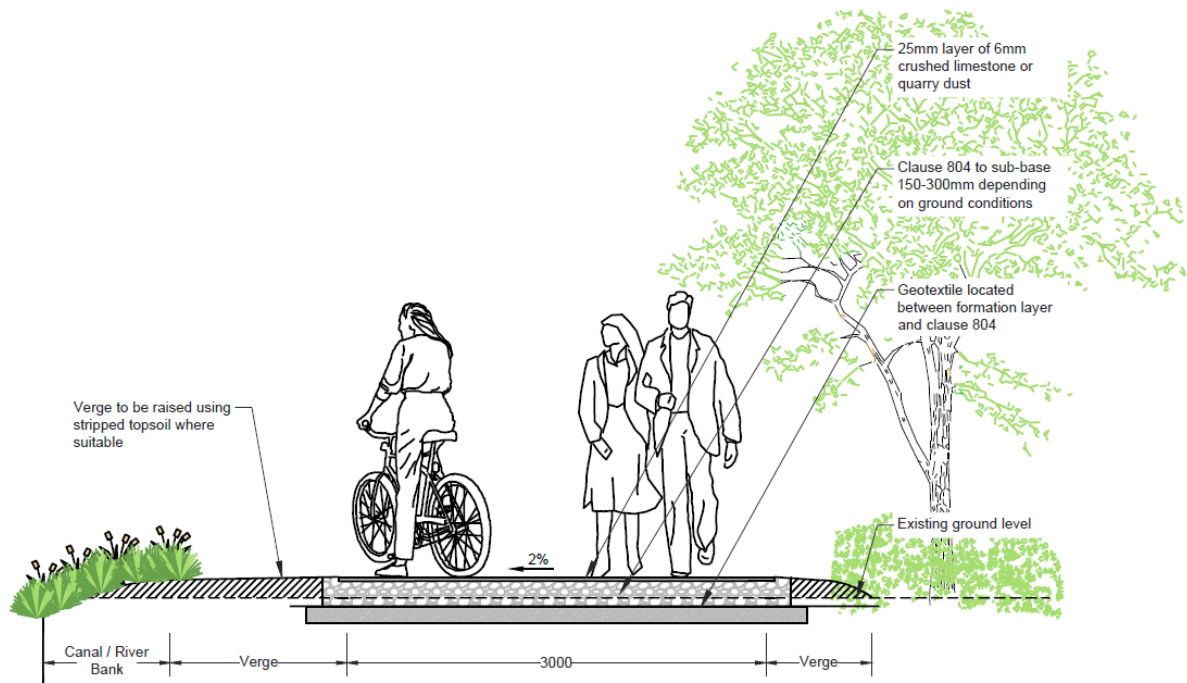
The unbound surface will complement and enhance the existing areas that it passes through whilst been sensitive to the surrounding environment.

In urban areas, the surface design will follow best practice laid out in the Road Design Manual, which specifies the design for all roads in Ireland.

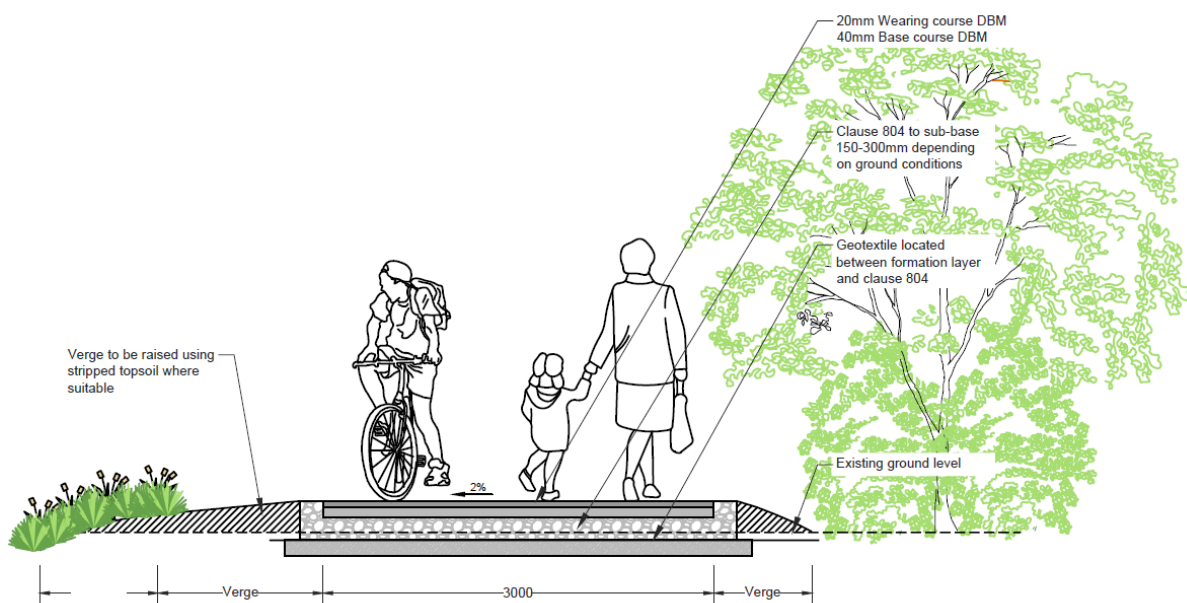


Figure 8: Another of the canal bridges. The pathway is laid on top of gabion baskets which are set onto the bed of the canal. Nothing is fixed to the bridge, and should the canal ever be re-watered, the greenway path can easily be lifted again

Below you will find a typical cross section of the proposed Greenway for both unbound and bound surfaces.



TYPICAL UNBOUND SURFACE
SCALE 1:25



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

5.2 Typical features along greenway

It is proposed to provide a range of complimentary amenity features along the Greenway route including access to the trail and also rest areas, consisting of seats, picnic tables, bicycle stands, information and route signage. Seating for rest areas will also be provided at locations along the route between these locations.



Figure 9: Outdoor classroom along the Monaghan greenway and proposed Green way signage

Lighting of the Greenway will only be considered within settlements for health and safety purposes. It is not our intention to light rural sections of the Greenway. The reason for this are both grounded in ensuring the health and safety of prospective users whilst also being cognisant of the potential impacts to wildlife (e.g. bats) as well as contributing to light pollution.

5.3 Safety features & crossings

A detailed safety audit will be undertaken as part of the detailed route assessment. However, from



Figure 4: a simple railing pushes users out from the low side of the arch. Railings and fencing prevent any watery mishaps!

the extensive experience gained by the project partners in development of Greenways and Blueways, mitigating measures such as utilising bridge underpasses for crossing points will be utilised, where possible (see left). Regardless, all of the crossings will be provided with both road signage and trail warning signage in accordance with Department of Transport Traffic Signs Manual. In order to mitigate safety

risks at road crossings, a bound surface for a distance of approximately 10m either side of the crossing shall be provided. Locked chicane barriers in the form of a two-part gate system (see right) shall also be provided at these



Figure 10: staggered gates prevent unauthorised vehicular access. The gates can be opened on request for events with large footfalls

locations. This will allow unimpeded access to the trail for cyclists and others, but prevent any unauthorised access, whilst also allowing access for maintenance vehicles. Additional measures to prevent access by livestock, given the largely rural nature of the route, will be installed to ensure user safety.

5.4 How greenway is to be constructed



Figure 11: View of Monaghan greenway under 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, as any topsoil can usually be relaid along the margins.

A typical construction sequence of a section of Greenway would entail the following:

1. First, the topsoil is scraped off and put to one side
2. The towpath was originally used as a pathway, so mostly the ground conditions are pretty uniform and little more needs to be done other than scrape back the topsoil. Sometimes, a little drainage is needed in places
3. A geotextile membrane is laid down
4. A layer of stones is laid (usually '804') and compacted with a roller
5. The path is finished off with a layer of finer stones or 'dust'. This is laid in such a way that any surface water runs off to the verges.
6. The verges are laid, using the topsoil that was saved from earlier
7. Any fencing, hedging etc is finished off
8. Signage is erected.

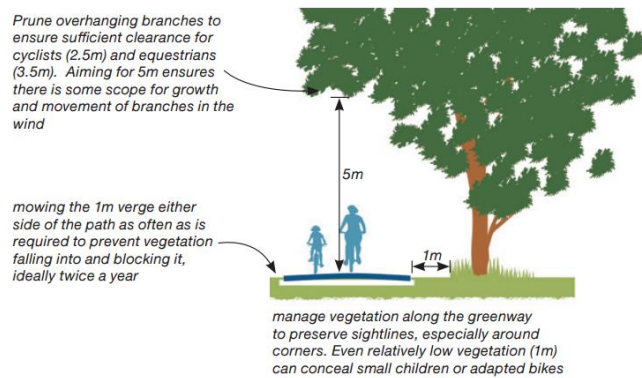
5.5 General maintenance requirements

As outlined in the Sustrans Greenway Management Handbook (2016); *'High maintenance, overly manicured green spaces are becoming a thing of the past. Balancing the needs of wildlife, people and the environment requires a different approach.'* It is our aim to implement a management protocol that serves both the recreational users and is of benefit to the surrounding landscape. To this end we envisage the four main aspects of the greenway requiring maintenance regimes as:

Greenway Surface: the surface of the final Greenway will require continual inspection and maintenance to ensure it is fit for purpose

Vegetation Growth: whilst grass encroachment will have to be controlled we envisage limiting this maintenance to a minimal strip adjacent the Greenway and monitoring overhead branches, where present (see right: source *Sustrans Greenway Management Handbook*)). Outside this we will promote a variety of habitat structure

from mown verges to taller grassy verges to strategic planting of habitat enhancement measures (e.g. hedges, copses, grasslands, etc.) at locations along the Greenway, where feasible and appropriate. This will be of benefit to biodiversity but also result in greater customer satisfaction levels. Control of invasive species, where present, will also form part of the maintenance regime through development of strict Biosecurity Protocols. *Adaptive management* will be key to ensuring appropriate vegetation control and promotion of local biodiversity takes place.



Signage: signage, both in terms of users (directional signage) and wide awareness raising of the surrounding heritage will be a key component of the Greenway. Other offline interpretive measures such as apps, QR codes and NFC chips will also be used to help raise awareness about this rich heritage corridor.

Amenity Furniture: amenities areas and their associated furniture will be subject to routine inspections and maintenance. Amenities areas will also be managed to promote biodiversity through minimal intervention in terms of manicures grassland.

Maintenance costs are based on both Sustrans guidance and actual costs incurred by Monaghan County Council and Waterways Ireland for maintaining similar recreational trails. These costs have been assessed at approximately €10,000 per kilometre, which would give an overall yearly maintenance cost of approximately € 220,000.

5.6 General construction timescales

From a review of similar trails it is estimated that construction work will take approximately 8-12 months per 20 km stretch of greenway. This estimate may be influenced by a number of aspects which can only be determined at detail design stage. The route length is quite substantial and as such is unlikely to be completed all at once. Therefore a phased approach is the most likely scenario. The route has been broken into sections and the exact timing of when each section will be delivered will depend on availability of funds, local support for the project and other local factors. The overall route that the SEA must assess will remain valid.

5.7 Section by Section

Outlined below is a detailed description of each section of the proposed Greenway.

An overview map of the entire route is illustrated below:

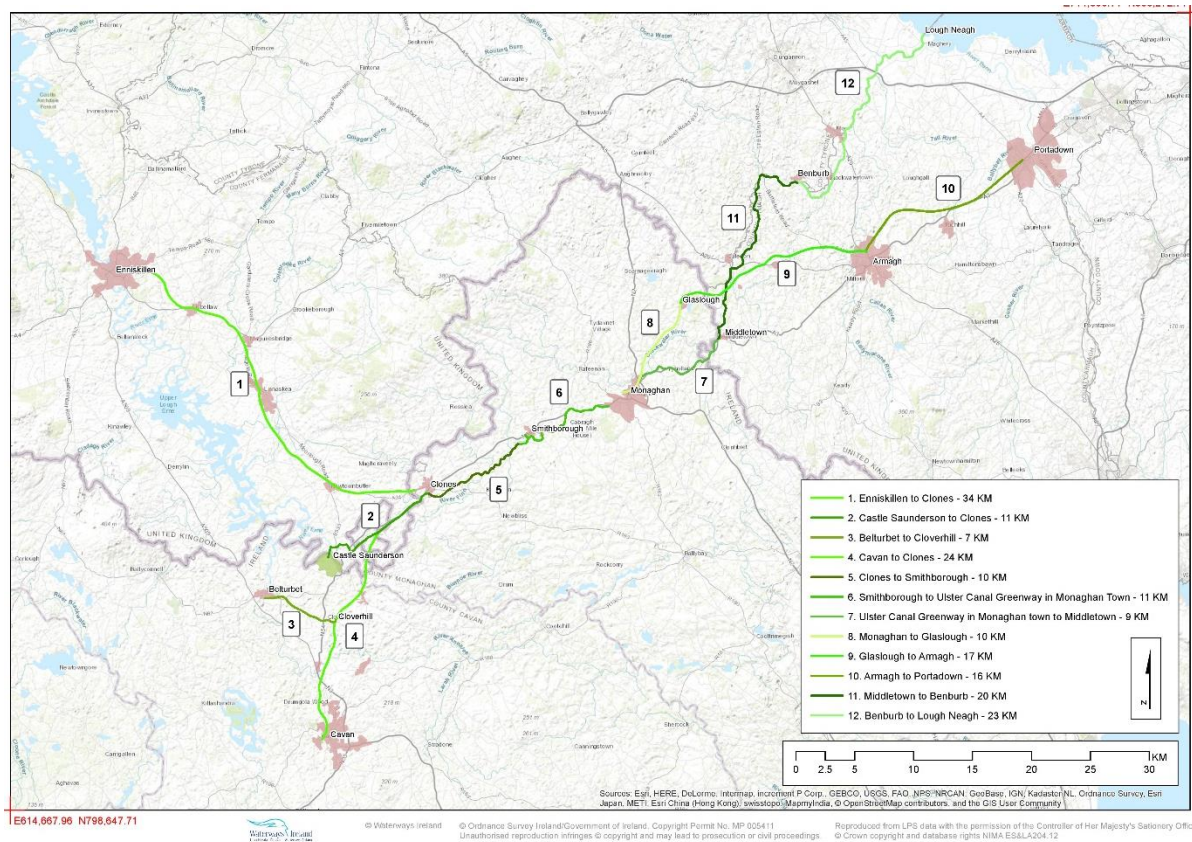


Figure 5: Map of entire route

5.7.1 Enniskillen to Clones

Length: 34 km

Disused Infrastructure type: Railway

Administrative Area: Fermanagh Omagh District Council 95% Monaghan County Council 5%

Cross Border: Yes

The proposed greenway will utilise the disused Great Northern Railway line between Clones and Enniskillen, passing through Newtownbutler, Lisnaskea, Maguiresbridge and Lisbellaw. As it approaches Clones, an option to connect to the Ulster Canal in addition to continuing into the town along the GNR presents an opportunity to create a looped route, which would mainly benefit Clones town.

County Fermanagh has a trail for every interest. This is excellent cycling country with routes of varying lengths and difficulties through stunning lakeland scenery. The history of this area stretches back over thousands of years with the prehistoric idols at Lough Erne's Boa and White Islands. Enniskillen Castle, once the stronghold of the Maguire chieftains, is now a museum complex. Gifted with natural assets, Fermanagh has many nature routes: Castle Archdale Country Park, Castle Caldwell Forest, Crom Demesne and Lough Navar Forest. Lough Erne offers an array of watersports,

including waterskiing and canoeing, as well as hidden underworld such as the Marble Arch Caves European Geopark.

County Monaghan is part of Ireland's Ancient East' Land of 5,000 Dawns. History and myth collide here in a place where almost every village, monument and great house comes with its own legend of warring giants or eccentric aristocrats. Clones Town began as a monastic settlement c.500, when St Tiernach founded his monastery there and this was the most important site in Monaghan for centuries afterwards. Several European sites of conservation interest are located near the proposed greenway including Upper Lough Erne SPA, Slieve Beagh-Mullaghfad-Lisnaskea SPA, Upper Lough Erne SAC and Magheraveely Marl Loughs SAC. In Monaghan, just north of Clones, there is Kilroosky Lough Cluster SAC, which is also a proposed Natural Heritage Area (pNHA). In addition, there are over 20 Areas of Special Scientific Interest (ASSIs) within 6 km of the proposed greenway. These protected areas represent the best of our wildlife and geological sites.

5.7.2 Castlesaunderson to Clones

Length: 11 km

Disused Infrastructure type: Ulster Canal

Administrative Area: Fermanagh & Omagh DC 30% Cavan Co Co 10% Monaghan Co Co 60%

Cross Border: Yes. This route crosses over and back across the border several times

Starting at Castlesaunderson, which originally dates back to 1573 but which is now an International Scouting Centre, the Greenway will initially follow the Finn river to Gortnacarrow, where it will join the canal proper and continue along the towpath of the canal to Clones town. Navigation has also been opened to Castlesaunderson with a new Castle Trail developed by Cavan County Council.

This route will be passing about 2 km of Kilroosky Lough Cluster SAC. Special Areas of Conservation (SACs) are areas which have been given greater protection under the European legislation of The Habitat's Directive. They have been designated because of a possible threat to the special habitats or species which they contain and to provide increased protection to a variety of animals, plants and habitats of importance to biodiversity both on a national and international scale. There are also 8 Areas of Special Scientific Interest (ASSIs) within 6 km of the proposed greenway.

Once a stronghold of the ruling O'Reilly tribe of Breifne, then later the family home of one of Ulster Unionism's most influential families, and now home to an International Scouting Centre and Peace Centre, the story of Castle Saunderson is the story of modern Ireland. This imposing 19th century castle, named for the esteemed British military family that first arrived in Cavan in the early 17th century, has three times been gutted by fire, yet it endures – a poignant reminder of past troubles, and equally, a symbol of the solid foundations on which a hopeful future has been built.

5.7.3 Belturbet to Cloverhill

Length: 7 km

Disused Infrastructure type: Railway

Administrative Area: Cavan County Council 100%

Cross Border: No

While short in length, this little link is an important one, as it connects the Ulster Canal Greenway network to the Shannon Erne Waterway and its Blueway network, and also the proposed greenway from Ballyconnell to Belturbet which is being developed by Cavan and Leitrim County Councils.

Belturbet is a historic town which boasts many heritage sites and is steeped in over 400 years of history. For instance, Belturbet Railway Station which opened in 1885 was built and operated by the Great Northern Railway Company of Ireland. The station served as the connecting point for the Great Northern Railway broad gauge and the Cavan and Leitrim Railway narrow gauge railway lines and accommodated both railway companies until its closure in 1959. The station was built entirely of locally sourced stone and is reputed to be the only Grade 1 station constructed entirely of cut stone. Since its refurbishment in 1995, a museum hosting an interesting collection of railway memorabilia and audiovisual footage of the Cavan and Leitrim railway and the restoration of the station itself is located in the Main Station Building. Belturbet is also surrounded by the Erne River and numerous lakes and is considered to be one of Ireland's best fishing destinations. Apart from fishing, there is stunning scenery to take in while, walking, cycling, golfing or horse riding. This proposed stretch of the Greenway will be passing north of Lough Oughter SPA. Special Protection Areas (SPAs) are designated under the European Commission Directive on the Conservation of Wild Birds. All European Community member States are required to identify internationally important areas for breeding, over-wintering and migrating birds and designate them as Special Protection Areas (SPAs) Just north of the border, Upper Lough Erne SPA , Upper Lough Erne SAC as well as 5 ASSIs are close to the proposed path.

5.7.4 Cavan to Clones

Length: 24 km

Disused Infrastructure type: Railway

Administrative Area: Cavan 80% Fermanagh 10% Monaghan 10%

Cross Border: yes, just outside Clones

Starting at Cavan town, the Greenway will follow the disused Great Northern Railway line through Ballyhaise and Redhills to where it intersects with the Ulster Canal. It will then follow the canal onwards to Clones.

Cavan was founded by the King of East Breifne, Giolla Íosa Ruadh O'Reilly, sometime during his lordship between 1300 and his death in 1330. Cavan has its own heritage trail through the town, including the interesting Town Hall, designed by a well known Dublin architect William Scott and was constructed between November 1908 and late 1909. County Cavan is a walker's paradise, with a wide variety of walks. There are rambling country lanes, winding forest tracks, breathtaking mountain roads, and tranquil lake shore paths, all within easy reach. It includes the national Way-Marked 'Cavan Way'. The Wildlife and Wetlands environment of County Cavan's loughs is nationally and internationally recognised and offers substantial and unique opportunities for Sustainable tourism development

5.7.5 Clones to Smithboro

Length: 10 km

Disused Infrastructure type: Ulster Canal

Administrative Area: Monaghan County Council 100%

Cross Border: No

The proposed route follows the disused Ulster Canal out of Clones to Smithboro village. Much of the canal is still intact, and the sections which are missing can be connected by following the course of the nearby Finn river instead. Features along this section of the canal include the Finn River Aqueduct and two cut stone lock keeper's cottages, which offer some potential for restoration.

Clones town is a unique heritage town, founded as a monastic settlement by St Tiarnach, The remains of an abbey and round tower are to be found still in the town, as are the ruins of a medieval castle (re-discovered as recently as 2016), a Norman-era Motte, and many fine buildings dating from the town's heyday as an important railway junction until the 1950's. The layout of the town dates from the Plantation of Ulster. The Ulster Canal stores on the western approach to the town have been restored and are in use as a visitor centre, where Clones Lace can be viewed. The cultural highlight of the year is Ulster Final day at St Tiarnach's GAA grounds, where the Ulster GAA football final is played in July.

The Ulster Canal originally opened in 1841 and linked the two major expanses of water, Lough Neagh and Lough Erne. The original plan, as now, was to create a navigable waterway, to link the ports of Belfast and Coleraine with the River Shannon and onwards to Limerick or Waterford. The canal is 46 miles long with 26 locks. The canal winds its way to Clones through some striking rural countryside, then weaves in and out of the border four times before reaching its destination. This section of the proposed Greenway will be passing south of Kilroosky Lough Cluster SAC and Magheraveely Marl Loughs SAC as well as 7 ASSIs.

5.7.6 Smithboro to Monaghan

Length: 11 km

Disused Infrastructure type: Ulster Canal

Administrative Area: Monaghan County Council 100%

Cross Border: No

Starting at Smithboro, the Greenway will follow the towpath of the canal to Monaghan town, where it will connect in with the already completed section at the Threemilehouse road on the western edge of Monaghan town. This section includes Drumsnat Lake, the only natural quay on the Ulster Canal. Oscar Wilde's half sisters are buried in the nearby Church of Ireland cemetery. This section of the route passes the edge of a number of large land holdings, and benefits from mature trees and hedgerows. There is even a waterfall, created by a diverted watercourse which uses the canal bed for a distance.

Monaghan town and its environs is a hive of arts and culture with two county arts venues and several art studios. It also has developed a walking trail through the town, with the Old Cross square located adjacent to the Ulster Canal, from where you can see the spire of St Macartan's Cathedral. For those who want to enjoy outdoor activities, Monaghan also offers a variety of trails, from the

Sliabh Beagh on-road cycling trails a few kilometres north, to the Monaghan way and the Monaghan Slí walking routes and the Rossmore Castle / Lake / Nature hiking trails.

Note: a 4.2km section of greenway through Monaghan town using the Ulster Canal towpath has already been completed by Monaghan County Council and does not form part of this document.

5.7.7 Monaghan to Middletown via Ulster Canal

Length: 9 km

Disused Infrastructure type: Ulster Canal

Administrative Area: Monaghan Co Co (90%) Armagh City Banbridge & Craigavon District Council (10%)

Cross Border: Yes

This section includes a 2km spur line following the N2 bypass from the Dublin Road across to the Armagh Road, to connect the southern approach to Monaghan town to the northern approach. It also provides connectivity to the town's largest employment campus at the new Combilift premises. It then picks up the current greenway where it emerges at the Armagh Road roundabout, and continues north along the Armagh Road N12/ A3 to Middletown.

The Ulster Canal originally opened in 1841 and linked Lough Neagh and Lough Erne. Out of all 26 locks on the 46 miles of the canal, the rise to Monaghan necessitated the building of 7 locks in quite close succession. Monaghan is well established as an 'activity and adventure' destination, with outdoor activities such as horse riding, angling, walking and cycling being strong attractors of visitors. And for those looking for tranquillity, the Market House, a refurbished stone building situated in the centre of Monaghan Town, is now a gallery and art venue. It was built in 1792 of local grey limestone. The carving and stonework are noted for their uncommon delicacy and clarity. The Greenway enhances these tourism offerings.

5.7.8 Monaghan to Ulster Canal via Glaslough

Length: 10 km

Disused Infrastructure type: Railway

Administrative Area: Monaghan County Council 80% Mid Ulster Council 15% Armagh City, Banbridge & Craigavon District Council 5%

Cross Border: Yes

Emerging from Monaghan town at the same point as 8.1.7 above, this section instead follows a more northerly course, using the former Great Northern Railway line to reach Glaslough before travelling onward to Tynan, then intersecting the Ulster Canal between Tynan and Caledon. A spur line to link Caledon village could be considered as part of this project, thus linking the three estate villages to the greenway. The railway station in Glaslough is vacant and in good repair, and presents an opportunity for refurbishment.

This section of the proposed greenway is located near 3 ASSIs: Caledon and Tynan ASSI, Tullybrick Lough ASSI and Kiltubbrid Loughs ASSI. For walkers, Castle Leslie Estate, set in 1000 acres of rolling parkland with ancient trees and glittering lakes teeming with wildlife is situated on the border near Glaslough.

5.7.9 Glaslough to Armagh

Length: 17 km

Disused Infrastructure type: rail

Administrative Area: ABC, (95%) Mid Ulster (5%)

Cross Border: no

This section will veer left in Middletown village and head towards Tynan/ Caledon. At a point between these two villages, the canal intersects with the Great Northern Railway line to Armagh. It is proposed to continue the greenway in both directions, thus achieving connectivity with the main population and tourist centre in the area, i.e. Armagh city, as well as following the canal to its conclusion.

Armagh, the ecclesiastical capital of Ireland, is famous for its two Cathedrals – St Patrick’s Catholic Cathedral and St Patrick’s Church of Ireland Cathedral. It also has a wide historic interest with Navan Fort, at the western edge the town, the Armagh county Museum or the Armagh Gaol. As well history, Armagh offers natural heritage with the Navan Centre Ecology Trail, the Armagh Apple Orchards, art through the Armagh City Centre Public Art Trail, science with the Armagh planetarium, and a multitude of other activities such as golf, fly fishing, walking (Highway to Health) or cycling. A total of 6 ASSIs are located with 6 km of the proposed greenway.

5.7.10 Armagh to Portadown

Length: 16 km

Disused Infrastructure type: railway

Administrative Area: ABC – 100%

Cross Border: No

This section will connect two of the most populated towns of this part of Ulster, and will facilitate sustainable commuting at a whole new level across the region.

Although Portadown can trace its origins to the early 17th century Plantation of Ulster, it was not until the Victorian era and the arrival of the railway that it became a major town. Most of the town is built on the western side of the River Bann, and owes much of its prosperity to the river. The Newry Canal Way is now a fully accessible restored canal towpath, usable as a bicycle route between Newry Town Hall and the Bann Bridge in Portadown. The Canal was the first summit level canal in Britain and Ireland and has 14 locks between its entrance at Carlingford Lough and Lough Neagh. One of the attractions on the Newry Canal Way is Moneypenny's Lock, a site that includes an 18th-century lock-keeper's house, stables and bothy.

5.7.11 Middletown to Benburb

Length: 20 km

Disused Infrastructure type: Ulster Canal

Administrative Area: ABC (10%) Mid Ulster (90%)

Cross Border: No

This section will follow the original route of the canal. Shortly after leaving the Blackwater, the original canal ascended seven locks, through the Benburb gorge, arguably the most spectacular yet

the most difficult engineering and costly aspect of the waterway, then on to its first border crossing at Middletown. This stretch was one of the most picturesque stretches, journeying past the National Trust property at The Argory and through the estates of Lord Caledon, the Stronge estate at Tynan Abbey and the Leslie estate at Glaslough.

Peatland Parks SAC is located north of Benburb. Special Areas of Conservation (SACs) are areas which have been given greater protection under the European legislation of The Habitat's Directive. They have been designated because of a possible threat to the special habitats or species which they contain and to provide increased protection to a variety of animals, plants and habitats of importance to biodiversity both on a national and international scale. There are also 7 Areas of Special Scientific Interest (ASSIs) within 6 km of the proposed greenway.

5.7.12 Benburb to Lough Neagh

Length: 23 km

Disused Infrastructure type: Ulster Canal

Administrative Area: Mid Ulster (100%)

Cross Border: No

The final section of the route will require a strategic level assessment, as the canal itself terminates at Charlemont. Therefore there is no towpath or bank to follow from there onward. We would envisage to continue on to provide the greenway with a logical end destination, such as the Discovery Centre at Lough Neagh.

Bordering five of Northern Ireland's six counties, Lough Neagh is the largest freshwater lake in the British Isles at 18 miles long and 7 miles wide and the third biggest in Europe. A haven for wildlife and home to a wealth of flora and fauna, the lough also has a rich Christian heritage, with the remnants of three round towers and one of the finest high crosses in the whole of Ireland, Ardboe Cross. The proposed path will be ending within Lough Neagh and Lough Beg SPA. Special Protection Areas (SPAs) All European Community member States are required to identify internationally important areas for breeding, over-wintering and migrating birds and designate them as Special Protection Areas (SPAs). This section of the Greenway will also be passing near Peatland Parks SAC, as well as 8 ASSIs.

6 Route Assessment

6.1 Environmental Assessment

We have secured the services of RPS Consultants to conduct a Strategic Environmental Assessment (SEA) and a Habitats Regulations Assessment (HRA) Screening of the potential greenway routes. Part of this process involves identifying the potential issues with the routes we have indicated, and advising us on options to avoid and mitigate for these issues. The assessments provide the likely environmental implications of developing the routes of the Ulster Canal Greenway Strategy in the short, medium and long term.

The SEA has taken account of the potential impacts of the greenway overall, and of each section individually, on a range of environmental topics, which are:

- Biodiversity, Flora and Fauna;
- Population and Human Health;
- Geology, Soils and Landuse;
- Water;
- Air;
- Climate;
- Material Assets;
- Cultural, Archaeological and Architectural Heritage, and
- Landscape and Visual Amenity.

The SEA has advised that for the majority of impacts on these environmental topics, development of the greenway sections is generally only likely to have negative effects in the short term, primarily due to disturbances during construction. Any negative effects from construction are expected to be slight, short-term and temporary in nature.

The assessment did highlight one topic where there was a higher potential for negative impacts on proposed greenway routes. It identified inundation from surface water and river flooding, and climate change exacerbated flooding, as a risk to the routes which should be taken into account at design stage, to minimise the impacts of high rainfall events on the greenway and to ensure that the greenway does not interfere with flood risk management of the lands through which it passes. The SEA recommends that the Strategy includes for potential climatic change in detailed planning, so that increased storminess, rainfall intensity and river flows do not significantly impact on the long term use of the greenway sections.

In assessing the environmental impacts of the development and use of the greenway sections the SEA pointed to the significant positive impacts the project is likely to have on a number of the environmental topics, including sustainable transport, where long term benefits in the reduction of carbon consumption and reliance on fossil fuels is highlighted. The positive impacts to the local and regional population's health, and the improvement in the quality of life through the provision of a high quality recreational amenity, were also seen as long term benefits of the project.

The SEA considered the project as a whole, and in its constituent sections. It concludes that the development of all 12 sections would provide the most significant positive benefits for the population of the region. It considers that once developed, the operation of the 12 routes as one continuous greenway is unlikely to have any additional negative impacts as compared to operating

each section individually. However, it recommends that the construction of all 12 sections simultaneously would have a bigger potential for a negative impacts on the wider environment than adopting a phased approach, which would cause less disturbance along the 'corridor'. Therefore it favours adopting a phased approach to developing the greenway, section by section.

The full environmental assessment outputs for all 12 of the route options can be found in Section 8 of the SEA Environmental Report.

The Habitats Regulation Assessment Screening for the Strategy determined that development of each of the routes, except Route 5 – Clones to Smithboro, had the potential for impacts on the habitats and species of designated European sites, such as the Lough Neagh and Lough Beg Special Protection Area and the Upper Lough Erne Special Area of Conservation. Although at times this potential for impacts would only be due to poor practices during development, likely significant effects cannot be discounted without mitigation measures. Further screening and Stage 2 Appropriate Assessment at the detailed feasibility / design stage is likely to be required for these routes. The full screening of options for all routes can be found in Section 4 of the HRA Screening Report.

Waterways Ireland and their project partners fully acknowledge these outputs of the environmental assessments and will use this information in their future detailed feasibility studies, surveys and designs at the next project stage of route development. Mitigation measures proposed in the SEA Environmental Report and HRA Screening are summarised in Section 6.2 and will be taken forward into the next stage of detailed feasibility / design.

6.2 Mitigation

Mitigation measures have been recommended where potential negative impacts from developing the greenway routes on environmental topic areas have been identified. These mitigation measures aim to prevent, reduce and as fully as possible offset any significant adverse effects on the environment due to implementation of the Strategy. The general mitigation measures provided in the environmental assessments can be summarised as follows:

- Construction in the vicinity of sensitive environmental areas should be well planned and timed to have the least disturbance impacts, with seasonality of works very important. Surface water runoff from the working strip should be managed to ensure no sedimentation or contamination to waterbodies.
- The detailed design of the route should aim to minimise any disturbance to the local population by routing the greenway around property boundaries. The construction management plan for the route should streamline the construction programme to provide the least disturbance and inconvenience to the local population.

- Detailed design of the route should aim to minimise any disturbance to agricultural lands, by routing the greenway around the periphery of lands and farmsteads and not directly through them.
- Greenway design and construction should allow for surface water infiltration to replicate greenfield conditions. Fringe vegetation on the greenway should be planned to screen, filter and as best possible, soak up surface water runoff.
- The greenway sections in these lower lying areas may need to be designed to be raised above the floodplain, while not displacing water and creating additional flood risk to nearby receptors through sufficient culverting, or the risk can be accepted as this is essentially low vulnerability infrastructure and the greenway designed not to be damaged by periodic inundation.
- Design of the greenway should ensure that the section is resilient to climate change and its anticipated impacts, such as increased pluvial and fluvial flooding from increased rainfall intensity.
- It is essential that safety considerations are taken into account in the detailed design and construction management plan where construction personnel and greenway users will be in close proximity to any significant infrastructure along the route.
- Detailed planning of the section can make best use of the heritage features along the route. Construction of the greenway may need to be sensitive in areas where there is known or the potential for heritage features.
- Detailed design of the greenway section should be in fitting with the local landscape and make the most of local views. The greenway should work with the local topography and be generally inconspicuous within the landscape.
- 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. These areas will need surveyed and studied further during the detailed planning and potentially monitored during the construction phase.
- If several greenway sections are to be constructed simultaneously the construction management plan will need to eliminate or mitigate for potential cumulative negative impacts on the wider environment, such as cumulative disturbance to local flora and fauna, or cumulative increased site runoff and sedimentation to waterways.

Environmental impact specific mitigation measures to help avoid or minimise the potential for negative impacts on the wider environment from developing the greenway routes are given in the Table below. These mitigation measures will be implemented and further developed at the next detailed design stage and project level study stage.

SEA Mitigation Measures

Impact	Proposed Mitigation
Temporary disturbance and destruction of existing habitats and flora, and the displacement of fauna, along the greenway route.	Good planning and timing of works to minimise footprint impacts. Where applicable, prior to any vegetation clearance an appropriately qualified ecologist should be contracted to undertake a 'pre-vegetation clearance' survey for signs of nesting birds and protected and important species e.g. otters etc. Should important species be found during surveys the sequential approach of avoid, reduce or mitigate should be adopted to prevent significant impacts with advice from appropriately qualified professional. Vegetation and tree clearance should be minimised and only occur outside the main bird nesting season from February to August. Where there are over-wintering birds, to avoid disturbance, works should not be undertaken between September to March. Following construction, replanting and landscaping, or natural revegetating, should be undertaken in line with appropriate guidelines that aim to improve local biodiversity and wildlife, therefore will give medium and long term benefits to the biodiversity, flora and fauna of the working areas.
Temporary displacement of otters, birds, fish and other fauna during the construction period	Good planning, good timing of works and sensitive construction methods are essential. Adherence to NRA construction guidelines, e.g. on Crossing of Watercourses, on Treatment of Otters etc., Eastern Regional Fisheries Board Requirements for 'Protection of Fisheries Habitat during Construction and Development Works at River Sites' and IFI 'Guidelines on Protection of Fisheries During Construction Works in and Adjacent to Waters'.
Impact on European sites, habitats and species from construction works.	Good planning and timing of works, and good construction and management practices to keep impacts to a minimum. Site and species specific mitigation provided in HRA Screening, including site specific surveys, timing of works etc. Provide local, connected, compensatory habitat if loss of area of Natura site is unavoidable.
Spread of invasive species during construction.	Pre-construction survey for invasive species where necessary. Cleaning of equipment and machinery along with strict management protocols to combat the spread of invasive species. Preparation of invasive species management plan for construction and maintenance-related activities, if invasive species are recorded during the pre-construction surveys. Any imported materials will need to be free from alien invasive species. Post-construction monitoring for invasive species as part of maintenance.
Construction disturbance to the local population.	Disturbances can be kept to a minimum with good working practices, planning and timing. Adoption of Construction Best Practice.
Health and Safety risk to the local population during construction	Good construction management practices and planning of works. Adoption of Construction Best Practice.

works.	
Removal of soil and rock material via dredging and excavation works during construction.	Re-use material where possible on site for either embankments or landscaping. Materials to be stored away from any river banks to ensure that runoff does not affect water quality in the river in the form of increased suspended solids.
Temporary disturbances of water quality during the construction phase	Good management and planning to keep water quality disturbance to a minimum. Any potential water quality issues from construction should be contained and treated to ensure no damage to natural waterbodies. Construction will have to be planned appropriately, using Best Available Techniques / Technology (BAT) at all times, to ensure water quality issues are kept to a minimum, with no significant adverse effects. Guidelines such as CIRIA Document C532 - Control or Water Pollution from Construction Sites and CIRIA documents C521 - SUDS - Design manual for Scotland and NI, and C523 - SUDS - Best Practice Manual to be adhered to. Development and consenting of environmental management plan prior to commencement of works.
Potential for pollution incidents during the construction phase.	Minimise or eliminate requirement for in-stream works through good planning. Strict management and regulation of construction activities. Provision of good facilities in construction areas to help prevent pollution incidents. Preparation of emergency response plans. Good work practices including; channelling of discharges to settlement ponds, construction of silt traps, construction of cut-off ditches to prevent run-off from entering watercourse, hydrocarbon interceptors installed at sensitive outfalls, appropriate storage of fuel, oils and chemicals, refuelling of plant and vehicles on impermeable surfaces away from drains / watercourses, provision of spill kits, installation of wheelwash and plant washing facilities, implementation of measures to minimise waste and ensure correct handling, storage and disposal of waste and regular monitoring of surface water quality.
Disturbances to local infrastructure during the construction phase, e.g. traffic, water and electricity.	Good site management practices, traffic and construction management plans and consultation with the competent and statutory authorities prior to any works should enable all impacts to be kept to a minimum over a short timescale. Adoption of Construction Best Practice.
In the short term construction period there is the potential for damage to heritage features.	Construction supervision by qualified archaeologists, combined with sensitive construction methods and restoration would mean this damage could be kept to a minimum. Heritage features discovered could be restored / preserved. Review of draft detailed designs in areas of potential impacts by qualified archaeological / architectural heritage expert. Consultation and agreement with statutory authorities in advance of any works taking place in respect of protected archaeological or architectural features. Statutory consents and notices may be required prior to works taking place.
Medium and long term impacts on the setting of heritage features	Impacts could be kept to a minimum through sensitive design and planning. Planning and design advice from qualified archaeologists. Statutory consents may be required prior to works.
Potential for undiscovered heritage to be impacted upon by construction operations.	Supervision of construction operations by qualified archaeologists will minimise any impacts or the possibility of destruction of undiscovered heritage features in areas of heritage potential.

Extent and severity of short term negative impacts on landscape from construction.	Impacts could be kept to a minimum through good site practice and planning (e.g. screened laydown areas and traffic management). Adoption of Construction Best Practice.
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HRA Screening mitigation measures to help avoid or minimise the potential for any negative impacts on designated European sites of developing the greenway routes are given in the Table below. These mitigation measures will be implemented and further developed at the next detailed design stage and project level study stage.

HRA Screening Mitigation Measures

Route	Subject / Issue	Mitigation
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.
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.
	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 Northern Ireland and Lough Oughter and Associated Loughs SAC in the Republic of Ireland. The contractor should adhere to a prescribed CEMP and measure therein to prevent soil or contaminants entering a watercourse during construction.
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.
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.
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.
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.

6.2 Economic Assessment

Ultimately, the cost of developing a route will play a part in the decision-making process. It may be technically possible to overcome an obstacle, but the cost might make it unfeasible and a longer route chosen. All factors in the Greenway Strategy will be assessed and the most sustainable routes chosen.

7 Where do we go from here?

7.1 Steps in the Process

This draft Strategy has been developed using available existing baseline information relating to the proposed Greenway Corridor. It represents a high level strategic document to ensure the most sustainable approach is adopted in development of this Strategy. Following completion of the SEA the various sections of the Greenway, whether developed together or separately, will be subject to more detailed project level studies, surveys and assessment. Development of this Greenway is closely tied in with strategic corporate and business plan objectives of Waterways Ireland, its project partners and supporting Government policies in Northern Ireland and the Republic of Ireland.

This draft Strategy and its associated environmental documents will be subject to widespread public consultation. Active participation and engagement with our stakeholders and the wider community is central to this process and all comments and submissions will be reviewed and the Strategy adapted, as deemed necessary.

The Project Team will liaise closely with organisations and individuals representing all our customer groups to investigate and discuss their particular requirements. We will use a variety of methods to keep people and organisations informed which include press releases for newspapers articles, the Waterways Ireland and project partner websites, social media and updates in local media (newspaper and radio). This process is intended to be informative and to continue our commitment to being transparent and willing to engage with our stakeholders.

7.2 Implementing the Ulster Canal Greenway Strategy

On completion of public consultation and subsequent adoption of the Strategy (pending assessment of public submissions) Waterways Ireland and its project partners intends to advance to the next level of planning, feasibility and study. This will involve the submission of planning applications, planning drawings and detailed environmental assessments to the planning authorities in Northern Ireland and the Republic of Ireland.

Following the Strategic Environmental Assessment, which has looked at this Greenway Strategy in a strategic context, the project level assessment will look specifically at the desired routes and its associated infrastructure.

High priority will be given to ensuring public safety and protecting the natural environment in advancing this plan to project level. Waterways Ireland will balance this priority against our obligations under environmental and heritage legislation.

7.3 Long term maintenance of the Ulster Canal

Pending completion of the SEA and future approval from the planning authorities, Waterways Ireland, and its project partners, will maintain and develop the Ulster Canal Greenway in line with their statutory remit and experience to date in developing and promoting recreational infrastructure.

7.4 Targets and monitoring

The success of this Strategy will be judged on the completed projects, their impacts and costs, the number of users and their reaction to the facilities. Environmental monitoring obligations, as recommended in Section 9.2 of the Strategic Environmental Assessment, will be adhered to. The following Table gives the proposed monitoring of impacts of the Strategy on the wider environment, by strategic environmental objective.

Environmental Monitoring of the Ulster Canal Greenway Strategy

Criteria	Objective	Sub-Objective	Indicator	Possible Data and Responsible Authority	
Biodiversity, Flora & Fauna	1	A	Avoid detrimental effects to, and where possible enhance, Natura 2000 network, protected species and their key habitats, in line with conservation objectives.	Area, condition and trend of European sites in the UoM (European sites to review are those identified by AA Screening.)	NPWS / NIEA – Conservation Action Plans NPWS / NIEA reporting on Habitats and Species – Article 17 Reports, and Birds – Article 12 Reports.
		B	Avoid damage to or loss of, and where possible enhance, national and local nature conservation sites and protected species, or other know species of conservation concern.	Area, condition and trend of national, regional or local conservation sites in the vicinity of greenway links. (National sites to review are those identified in SEA Environmental Report.)	Local Authority – Local Area Plans and County Development Plans. NPWS / NIEA - Status of Protected Sites and Species in Ireland Reporting
Population & Human Health	2	A	Provide a safe and peaceful sustainable transport and recreational greenways for public use with access for all and with no risk to human health.	Lengths of greenway created. Population in vicinity of greenway. Predicted number of greenway users.	Waterways Ireland and Local Authority Reporting NISRA / CSO – Census data
Geology, Soils and Landuse	3	A	Minimise the loss of soil resource and minimise impacts on geological heritage from creation and operation of greenway sections.	Areas of agricultural land lost and land parcels bisected by sections of greenway. Geological heritage potentially impacted by greenway	EPA / EEA - CORINE landcover mapping. Local Area Plans and County Development Plans – Planning NI and myplan.ie GSI / GSNI Reporting
Water	4	A	No negative impacts on	WFD water status of surface and	EPA / NIEA – WFD status reporting

		water quality and flood risk.		surface and groundwater, and to provide no impediment to the achievement of water body objectives under the WFD.	groundwater's in the area. Waterbody morphology.	and RBMPs.
			B	No negative impacts on flood risk management activity, and to provide no impediment to the implementation of the Floods Directive.	Interaction with flood extents.	OPW / DfI Rivers - Flood Risk Management Plans
Air	5	Improvement in air quality from reduced vehicle emissions.	A	Improvement in air quality from reduced vehicle emissions.	Predicted vehicle emissions.	EPA / Local Authorities / NIEA – Annual air quality monitoring summaries and Continuous air quality monitoring.
Climatic Factors	6	Adaption of the greenway sections to climatic change and no contribution to GHG emissions	A	Adaption of the greenway sections to climatic change and no contribution to GHG emissions	Interaction with climate change flood extents. GHG emissions during construction and operation of greenway sections.	EPA / Local Authorities / NIEA – Annual air quality monitoring summaries and Continuous air quality monitoring. OPW / DfI Rivers - Flood Risk Management Plans
Material Assets & Infrastructure	7	Creation of greenway sections with no impediment to existing and proposed infrastructure.	A	Creation of greenway sections with no impediment to existing infrastructure.	Transport and energy infrastructure along the proposed route of the greenway section.	ESB / EIRGRID / SONI / NIE / TNI / TII - Annual Reporting and Plans
Cultural, Architectural & Archaeological Heritage	8	Avoid loss of or damage to heritage features and where possible incorporate heritage features into	A	Avoid loss of or damage to heritage features and where possible incorporate heritage features into the greenway.	National and local designated heritage sites and monuments.	NIEA / Local Authority / DAHRRG / OPW reporting.

		the greenway.			
Landscape & Visual Amenity	9	Protect, and where possible enhance, landscape character and visual amenity in the vicinity of greenway sections.	A	Protect, and where possible enhance, landscape character and visual amenity in the vicinity of greenway sections.	<p>Landscape character assessments.</p> <p>Designated landscapes and views.</p> <p>Local Authority / NIEA – Landscape Character Assessments, County Development Plans and Local Area Plans.</p> <p>EPA / EEA - CORINE Landcover.</p>

8. Closing Statement

The development of a greenway amounts to the construction of a public road, albeit a very small one. The complex health and safety, land acquisition, road design, legislation frameworks all apply. The people along the proposed route must be considered, and landowners must be properly consulted and compensated.

Issues such as adverse possession established by members of the public along disused sections of canal can pose obstacles, and concerns over security and privacy need to be dealt with before any agreement on a final route can be reached. Only then can drawing of the detailed design, laying out things like drainage, lighting, car parking, gates etc., begin.

Monaghan County Council have posted a detailed blog outlining the steps involved from receiving the green light for funding for the 4.2km of greenway in Monaghan town to the official opening. They owned the majority of the land already, but the project still took over 18 months to complete!

Local conditions mean that it will be highly unlikely that all sections of the regional route will progress at the same rate, and this is ok. That is why we have sectionalised the route – to allow each section to proceed at its own rate.

In late 2015, DRD NI announced a programme of funding support to local authorities for the development of greenways, starting with funding towards the scoping of possible routes. The Northern Partners in this regional Greenway proposal have each made a submission to the DRD for the sections within their respective administrative areas. If successful, this will start the process of developing these sections up to detailed design stage, in readiness for construction should funding become available.

In late 2015, the Special EU Programmes Body opened a Cross Border Greenways Measure under the EU INTERREG VA Programme. The aim of the measure is to generate a modal shift in cross border commuter behaviour away from the private motor car towards sustainable transportation. The Partnership submitted an application for the section from Smithboro to Middletown, and was successful in securing €4.9 million towards the project. This 22km section is expected to be delivered by mid 2020.

We expect that it will take to 2030 to realise the project in its entirety. However, we believe it is both achievable and worthwhile, and we are committed to both the journey and the destination. We believe the region and its people will benefit from it, and we are convinced that securing these disappearing pieces of transportation heritage for the benefit of the people of central Ulster will help to bring prosperity and a high quality of life to the region, for the betterment of us all.

We hope you will join us on our journey.