



Route Corridor Selection Report
Galway – Dublin Greenway
Ballinasloe to Athlone
October 2014

Galway-Dublin Greenway

Ballinasloe to Athlone Section

Route Selection Report

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Galway to Dublin Greenway: Ballinasloe - Athlone Route Selection Report

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EXECUTIVE SUMMARY

This report sets out to describe the route selection process between Ballinasloe and Athlone towns forming part of the Galway to Dublin Greenway. A greenway is an off-road route designed for cyclists and pedestrians.

A Study Area is identified, followed by an inventory of the natural and built environment and external factors that affect the development of a cycling scheme, whether positively or negatively. Four Route Corridor Options are examined.

The assessment criteria are based on the findings of Fáilte Ireland research, EuroVelo guidance and international requirements for long distance cycle routes. A rating is assigned to each route under the assessment criteria. The ratings assigned are used to inform a decision matrix that influences an emerging preferred route corridor.

The report also considered the findings of the Constraints Study and Route Selection Report that was concluded by NUI Galway and the Roscommon National Roads Design Office in April 2013, although options in that study were restricted to publicly owned lands.

The report is structured to follow the guidance set down in the National Roads Authority's Project Management Guidelines but the content is tailored to reflect the reduced environmental impact of a greenway in comparison to a road scheme.

1. INTRODUCTION

1.1 Background

Under direction from the Minister for Transport, Tourism & Sport, the National Roads Authority (NRA) has been engaged to assist in the delivery of the first long distance off-road cycle-route (greenway) between Galway and Maynooth. Upon completion, this project will deliver a substantial component of the first cross-country national cycle-way from Galway to Dublin and establish a significant tourism investment that will assist in regional and local employment. The concept of the greenway is to be similar in character to the Great Western Greenway in Mayo will have significant potential to be marketed internationally and attract new tourists who may wish to walk or cycle across Ireland.

The NRA has commissioned Roughan & O'Donovan – AECOM Alliance Consulting Engineers to undertake the preliminary design and statutory process for this proposed greenway route between Galway and Maynooth.

1.2 Policy

1.2.1 Fáilte Ireland Strategy for the Development of Irish Cycle Tourism 2007

Fáilte Ireland (FI) produced its Strategy for the Development of Irish Cycle Tourism in 2007. It observed that cycle tourism had declined in Ireland since 2000.

The FI Strategy also referenced a research project conducted by the research company MORI in 2005 which found, among other things, that:

- Cycling on Irish roads is not perceived to be safe – cyclists face dangerous bends, fast cars, intimidating HGVs, more traffic and high speeds;
- There are very few, if any, traffic-free routes to cater for touring cyclists wanting to leave the cities to discover the countryside or for families who wish to participate in cycling.



The purpose of the FI strategy was to determine how best to renew the popularity of cycling in Ireland, how to encourage visitors to come to cycle in Ireland, and how to ensure that cycle tourism can generate visitor spend in rural areas. It proposed an approximately 3,000km long cycle network running from Donegal along the West, South and South-east coasts and continuing along the East coast as far as the Northern Ireland border.

The Strategy identified the following needs for cycle tourists:

- Safe places to cycle and consideration from other road users;
- Attractive routes with good scenery;
- Well-connected and signposted routes and destinations avoiding long detours;
- Opportunities to visit local attractions and specific places of interest;
- Food, accommodation and refreshments available at intervals, which reflect comfortable distances for stopping off / overnight stops;

1.2.2 National Cycle Policy Framework 2009-2020

Ireland's National Cycle Policy Framework, 2009-2020 (NCPF) recognises the need to support and encourage all types of cycling, including recreational and tourist cycling.

With reference to the Strategy document produced by Fáilte Ireland, Objective 3 of the NCPF is to -

- Provide designated rural signed cycle networks providing especially for visitors and recreational cycling.

Supporting policies of this Objective are to -

- *"construct the National Cycle Network (NCN) as identified in the 2007 Strategy for the Development of Irish Cycle Tourism"; and*
- *"carry out further research and surveying work in order to expand the network to include rural recreational routes around urban areas and to connect major urban areas. We will pay special attention to the opportunities of using both the extensive disused rail network and canal / river tow-path networks as cycling / walking routes. In expanding the network, we will examine the recent UK experiences of the construction of their networks".*

1.2.3 National Cycle Network Scoping Study 2010

In August 2009 the Minister of Transport tasked the National Roads Authority with completing a Scoping Study for a National Cycle Network. An advisory group, under the auspices of the National Trails Advisory Committee and with members such as Fáilte Ireland, Waterways Ireland and Coillte, was set up.

The advisory group identified the vision of the National Cycle Network to "develop a National Cycle Network that will allow users to cycle between the main urban areas throughout the country. The network will be built to best practice standard, follow routes that maximise the number of potential users and its attractiveness to users, facilitate access for all, and ensure that short and long trips can be engaged in. The National Cycle Network Scoping Study routes will, where possible, avail of existing routes and State-owned lands, share use with walking and form the basis for linkages to more comprehensive rural and urban local networks".

The Scoping Study was published in August 2010. The study identifies thirteen potential route corridors between urban centres of a population of 10,000 and upwards that could make up a National Cycle Network. The potential Network identified in the scoping study is approximately 2,000km in length. The proposed NCN overlaps with 1,600km of the cycle network proposed by Fáilte Ireland in 2007. It is envisaged that the identified route corridors will provide a skeleton around which routes should develop nationwide, with potential for links into and between the corridors, particularly where existing infrastructure allows cost effective delivery.



Figure 1.1 National Cycle Network Route Map

The Scoping Study states that the next step for the National Cycle Network project could be to select a major route corridor (e.g. Dublin-Galway corridor) or a segment of the route corridor (e.g. Dublin to Athlone as part of the Dublin to Galway corridor) and to carry out a feasibility study and route selection report. This would identify the route options available within the corridor, outline criteria for selecting between route options, make a recommendation on the preferred route, and identify the standard to which this route should be delivered. This study would also identify the potential for, and challenges of, using existing infrastructure such as abandoned railways, canal tow paths, state owned lands etc.

Such a route selection report would indicate the specific design standard proposed for each section of the route e.g. off road cycle ways, cycle trails remote from traffic (greenways) or on road cycle routes. The cost associated with the delivery of each of the different route types/standards would be compared. Carrying out such a study would result in a detailed costing and implementation plan for the delivery of the selected route corridor, and provide a template for delivery of other route sections.

1.2.4 National Cycle Manual 2011

The National Cycle Manual was published by the National Transport Authority in 2011.

It embraces the Principles of Sustainable Safety which aims to create a safe traffic environment for all road users including cyclists.

The Manual challenges planners and engineers to incorporate cycling within transport networks more proactively than before.

It identifies 5 primary needs of cyclists which should be taken into account when any infrastructure incorporating cyclists is being developed, these are:

- Road Safety;
- Coherence;
- Directness;
- Attractiveness; and
- Comfort.



1.2.5 The European Cycle Route Network EuroVelo 2012

The European Cyclists' Federation (ECF) is an umbrella federation for national cycling organisations throughout Europe. EuroVelo promotes long distance cycle routes for tourism, which is the key objective of this Galway to Dublin route.

The European Cycle Route Network (EuroVelo) incorporates existing and planned national and regional cycle routes into a single European network, see Fig. 1.2. The ECF issued a study of the EuroVelo in 2012.



Reference has been made to the study as well as their guiding principles for developing a cross country cycle route. One of the key objectives of the EuroVelo policy is to offer sustainable tourism development which means:

“Long-distance cycle route design should embrace the principles of sustainable tourism development; cycle tourism planners need to be aware of the need to conserve natural assets, to enhance community competences and capabilities and for the need for tourism providers to minimise use of resources and output of waste and pollution. Transport to a route can be one of the main negative environmental impacts and the route design has to be cognisant of this in terms of offering attractive near to home travel and integration of rail, coach and ferry transfers for longer distances”.



Figure 1.2 EuroVelo Network

The report highlights the key motivations for cycling, which include health reasons, taking relaxation and learning something about an area. In terms of route characteristic the most important factors are safety, ease of use, route variety and accommodation/catering. Interestingly of lesser importance is access to public transport, route network density and information material.

The guiding principles for cycle route development are:

- Safety – avoid public roads with large motor traffic volumes and high speeds. Provide safe junctions. Consider social safety
- Attractiveness – include and connect cultural, historical and natural sights, culinary or other attractions, whilst avoiding unpleasant areas
- Coherence and directness – provide uninterrupted route infrastructure but link to attractions connected to the theme of the route and provide signing. Avoid unnecessary detours

- Comfort – minimise elevation. Provide good surfaces and sufficient good quality services (accommodation, food, bike repair etc).

1.2.6 Fáilte Ireland Cycling and Activities Research

In May 2013 Fáilte Ireland commissioned cycling research in order to, among other things, inform the route selection process of the route. Just over 15,000 people surveyed in Germany, France, Great Britain and Ireland. Respondents to this market research identified traffic free cycling and safety of the cycle route as the most important attributes of a tourism cycle route after a beautiful landscape and scenery. The full ranking of route attributes were as follows:

Table 1.1 Fáilte Ireland Survey Results

No.	Attribute	% respondents ranking the attribute in top 5
1	Beautiful landscape / scenery	86%
2	Traffic-free cycling	54%
3	Safety of cycle routes	51%
4	Access to towns / villages	49%
5	Attractive cities / towns	51%
6	Wilderness / away from it all	44%
7	Choice of route distances / terrain	37%
8	Range of other things to see & do	40%
9	Frequency / distance between facilities (i.e. food, restrooms etc)	30%
10	Level of difficulty / grade / classification assigned	27%
11	Availability of suitable accommodation	30%
12	Breakdown / puncture repair facilities	19%
13	Good public transport links	16%
14	Bike transfer services between towns	13%

It is evident that directness of route is not a critical factor in the provision of a satisfactory cycle route. On the contrary, picturesque landscapes and traffic free routes with good connections to towns and villages are rated highly.

1.2.7 Local Policy

Within the route corridor selection area, county and town development plans were reviewed. The following policies in regard to the development of cycleways in each of the local areas were found as follows:

1.2.7.1 Roscommon County Development Plan 2014-2020

The 2014 - 2020 County Development Plan emphasises that the “Modal Shift” required to alternative travel means such as public transport, cycling and walking, presents challenges at local level in rural counties such as Roscommon. This is conveyed via consideration of the National Cycling Policy Framework and the National Cycle Manual.

The Roscommon Development Plan states that Local Area Plans also contain policies and objectives that address the more sustainable transport modes, i.e.

walking and cycling. Recommended policies and objectives as per the Roscommon County Development Plan 2014 - 2020 were noted as follows:

- Encourage and where possible facilitate, local investment in safe cycle ways, secure parking for bicycles and rented bicycles within existing developments and also by means of retrofitting where necessary.
- Ensure, via the development management process that proposed public offices and commercial developments provide bicycle parking/ storage along with changing/ showering facilities for cyclists.
- Encourage growth that facilitates a greater self containment of settlements, ensuring that housing growth is matched by local employment opportunities where possible. This will help reduce the necessity to commute by car.

1.2.7.2 Offaly County Development Plan 2009-2015

As the Study Area extends into County Offaly and certain route corridor options have the potential to connect to Shannonbridge (as a service centre) in County Offaly the policies included in the Offaly County Development Plan 2009 – 2015 have been considered as part of the local policy currently in place. The Plan is committed to making provisions for cyclists including where appropriate, dedicated cycleways, subject to the availability of funding. The Council policies include:

Policy P13-12 It is Council policy, where feasible, to require the provision of cycleways and walkways as part of new developments.

Policy P17-05 It is Council policy to further investigate the potential of and opportunities for the development of trails in County Offaly to include a mixture of walking, cycling and driving trails, for the provision of appropriate services along these trails, and for the development of linkages between these trails in Offaly and adjoining counties.

1.2.8 Department of Transport (DOT) Policy Statement

In May 2014 the Minister for Transport, Tourism and Sport issued the vision, policy and objectives of the Galway to Dublin Greenway:

Vision

Develop a segregated cycle and walking trail to international standards, extending from Dublin City to Galway which is of a scale that will allow Ireland to harness the potential of an identified growing tourism market for cycling. This route will form part of an interconnected national cycle network of high quality, traffic free, inter urban routes, which will establish Ireland as a quality international tourism destination for a broad range of associated recreational activities and pursuits.

Policy

To provide a segregated, substantially off road cycle route from Dublin City to Clifden via Galway City, utilising where possible existing and approved routes and disused railway line corridors and to require regional and local authorities to incorporate appropriate policies to facilitate the implementation of this cycle route. The development of the route shall be subject to the requirements of Habitats and Environmental Impact Assessment Directives. Where State lands are not available, land will be acquired in order to secure the use of the infrastructure for future years, thereby securing the State's investment.

Objectives

- Establish a cycleway route connecting Dublin to Clifden via Galway City which is segregated from vehicular traffic and is safe, attractive and comfortable.
- Maximise the value of existing infrastructure including canal towpaths, disused railway lines and state owned lands.
- Secure permanent access to the entire route through land acquisition if necessary.
- Develop a tourism experience that caters for a broad range of users in key tourism markets.
- Route to be designed and built to international best practice and in accordance with adopted standards.
- Maximise the value of existing and proposed investment in key tourism destinations.
- Facilitate regular access to visitor attractions and services along the corridor.
- Facilitate connections with public transport hubs which will provide access to the route from bus and rail.
- Provide frequent connections to towns, tourism facilities, natural amenities and other attractions in proximity to the route in collaboration with local communities and tourism providers.
- To generate ongoing economic benefits for rural and urban areas along the route.
- To maximise the number of potential commuter, leisure and tourist users.
- To facilitate the achievement of smarter travel targets for sustainable travel.
- To market and promote the cycleway internationally.
- To provide comprehensive route signage, mapping and distinct branding to international standards.
- To provide for maintenance of the route and monitoring of patterns of use.
- To create an economic stimulus for growth in the national and local economy, providing opportunities for new and existing businesses and communities

1.3 Physical Character of the Greenway Facility

By its nature a greenway is a low-key and low impact feature in the countryside. It will consist of 3 metre wide pathway that will navigate around various obstacles such as houses and farmyards. The greenway will follow the natural topography as much as possible with little earthworks for cuttings and embankments unlike a road or a railway which have demanding geometric design constraints. Suitable curvature for cyclists is only 25m radius for a maximum speed of 30km/h or lower where appropriate, with a minimum radius of 4m at 10km/h. The gradients will preferably not exceed 3% but may be relaxed to 5%, or an absolute maximum of 10%. As the terrain across the midlands of Ireland is generally flat, it will not present a challenge for the design of the greenway.

The route planning of the greenway will seek to follow field boundaries and land-holding boundaries in order to avoid disturbance to farming activity. As the geometry of the facility is very flexible, the route can have minimal severance or agricultural impact, apart from the loss of the small area of land under the footprint of the pavement.

Depending on the nature of the agricultural activity in the field being crossed, the greenway may or may not be fenced along each side. If required, standard timber post and wire fencing will be provided.



Example of the Great Western Greenway in Mayo, un-fenced across a sheep grazing field, and with animal grid at the entry point.

The Greenway will be constructed as a 3m wide path made from a bituminous surface to provide a high quality finish for cyclists, overlaying a granular sub-base and capping (gravel) layer where necessary. The total construction thickness will range from 20cm on stiff ground and up to 0.5m on soft ground. Construction of the greenway will involve removal of the topsoil layer to a depth of typically 15cm and build-up of the gravel thickness to a level of up to 35cm above surrounding ground level. The excavated topsoil will then be replaced on the sides of the greenway to provide a 1m wide verge and slope back down to ground level. The overall width of the earthworks will therefore be approximately 5m to 7m. In some cases where the ground level is sloping laterally across the route, some small amount of further earthworks will be required to provide a level area for the pavement and associated small cut and fill slopes to the side. Thus the overall footprint could increase to perhaps 10m wide. Drainage of the greenway will be simply over the edge onto the adjoining ground where the rainwater will infiltrate as in the original green-field situation. In some places where necessary a shallow drainage ditch may be provided to prevent surface water from flowing over the greenway from the surrounding ground.

Other aspects of the facility will be sensitively designed such as signs and posts and access control gates if required. The *Great Western Greenway* provides a great example of such features using timber as the basic material to fit in with the environment.



Example of well designed shelter and information board with interesting sculpture on the Great Western Greenway.

Cuttings

It is generally anticipated that the greenway will follow the existing ground profile over most of its length, with only minor re-grading of the ground surface. Longitudinal gradients that are steeper than 5% are acceptable over short sections, less than 100m in length. In areas where the gradient is steeper and more extended, it may be necessary to re-profile the vertical alignment by excavating and/or filing.

2. CONSTRAINTS AND AREAS OF INTEREST

2.1 Study Area

The Study Area for the examination of alternative routes must be large enough to include all reasonable route options.

The overall route from Dublin to Galway will pass through Athlone and the town is to form the eastern extremity of the Study Area. From here it was decided, based on the Fáilte Ireland Assessment Criteria, that each of the route corridor options should use Ballinasloe as a common service centre. Aside from Athlone, the town is the next largest urban centre within the Study Area and therefore has the capacity to address cyclists' needs and provide the desired services and amenities.

The Study Area extends from the west side of Ballinasloe to the east side of Athlone. The southern extremity of Brideswell Village in County Roscommon represents the northernmost limit of the Study Area and Shannonbridge in County Offaly the southernmost. Areas of Counties Roscommon, Westmeath, Offaly and Galway are all within the Study Area.

The Route Selection through Athlone is considered in a separate report.

The Study Area is shown in Figure 2.1 below and is reproduced in Figures 1 to 13 in Appendix A which outlines the constraints and areas of interest.

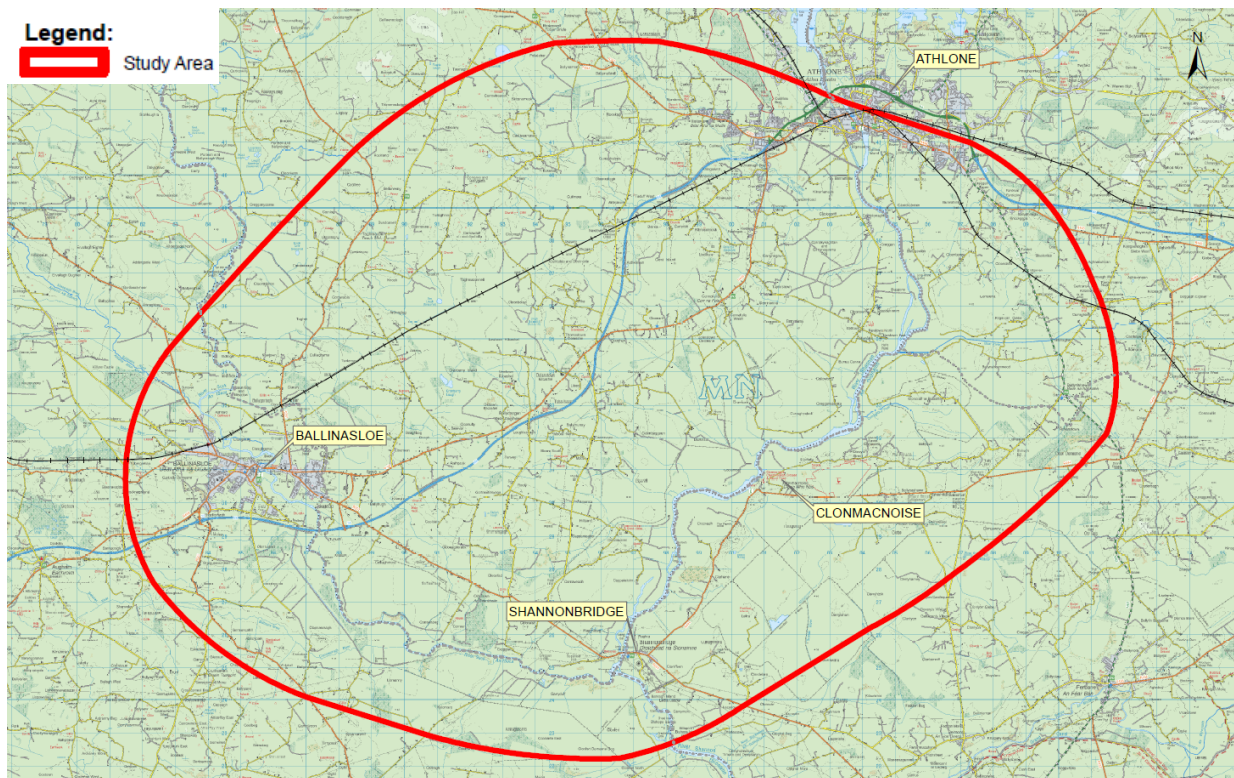


Figure 2.1 Study Area

2.2 The Natural Environment

2.2.1 Topography & Landscape

Within the Study Area the levels increase from a level of 35m OD along the river Shannon to a level of 70m OD in the east and 60m OD in the north west. The highest point is located between the townlands of Gorthnasharvoige and Kilbegly, at a level of 98m OD. The overall topography from Ballinasloe to Athlone and its surrounding landscape is generally flat, therefore topography will not constitute a significant constraint for this route selection. This type of topography does aid itself to the placement of a greenway in the area as limited re-grading of lands would be required to achieve the desirable longitudinal gradients. However, achieving scenic views (of the Shannon or Suck Callows for example) in such flat topography is challenging.

Landscape Character Assessments are included within the county development plans of Roscommon, Westmeath, Offaly and Galway. They identify Landscape Character Areas and notable scenic views. The relevant maps from the development plans are included in Appendix B of this report.

Roscommon

The Landscape Character Area maps for Roscommon identify the landscape in the north of the Study Area to be of "Moderate Value" and the landscape along the Shannon and Suck to be of "High Value" and "Very High Value".

They identify three scenic views within the Study Area:

- V23 – Located along the L-7615-0 local road in the townland of Bunua Cunna. This provides a south easterly view towards the River Shannon and the townland of Cloncraft in County Offaly.
- V24 – This view point is located along the L-7611-24 local road in the townland of Curraghnoboll. Views from this point are in a south easterly direction over the River Shannon and take in areas from Clonmacnoise to Clonascra in County Offaly.
- V25 – The third view point is located at the end of local road L-76055-0 in the area of Creggan Hill. It takes in a south westerly view across the River Suck, arcing from Coolcarta East in Co. Galway at the most southerly point to Cloonfad in County Roscommon at its most northerly point.

Westmeath

Westmeath's Landscape character map identifies the landscape within the Study Area as the Lough Ree and Shannon corridor (Area 6 on the map). This is described in the plan as having significant conservation status. The development plan does not identify any scenic views within the Study Area.

Offaly

In Offaly the landscape character within the Study Area ranges from Low to Highly Sensitive. The area that is defined as being Highly Sensitive is along the eastern side of the Shannon Callows and the historical region of Clonmacnoise. There are two protected scenic views within the Study Area:

- V3 – Located along Pilgrims Road (Road No. L-07013) in the townlands of Clonmacnoise, Clonascra, Ballyduff and Bloomhill. It takes in views of Clonmacnoise and River Shannon, Eskers, Mongan Bog and Finlough.

- V4 – Is located on Road No. R444 in the townlands of Clonmacnoise, Creevagh. Views from this point take in the River Shannon and the surrounding bogland.

Galway

The Landscape Character Assessment in the Galway section of the Study Area identifies the landscape to be of Medium Value in the areas of the Shannon and the River Suck. Further inland it is assessed as being of Low Value. There are two protected views located within the Study Area:

- V2 – this is located at a quarry on the R355 between Ballinasloe and Laurencetown and takes in views of the quarry.
- V3 – this is within the region of Clontuskert Abbey, located also on the R355 between Ballinasloe and Laurencetown.

In summary the landscape to the south of the Study Area is of a High Value, with viewpoints of a scenic nature that would be attractive for the route. Care would be required in the development of the facility to ensure that the value of the landscape and the scenic view points are protected.

Landscape Assessment of Athlone to Galway Greenway

It is also worth noting that a Landscape Assessment (Hogarth, May 2013) for the general route corridors has been completed and is used to inform Section 4.4.1 of this Route Corridor Selection report for the Ballinasloe to Athlone options.

2.2.2 Rivers and Streams

Two rivers dominate the Study Area - the Shannon and the Suck. The Shannon is the largest river in Ireland at 260km in length and flows through the middle of the Study Area. It has an average flow rate of 37.8m³/s, recorded at the weir in Athlone. It enters the Study Area south of Athlone Town, and flows through flat terrain, known as the Shannon Callows which acts as a flood plain when the level of the river rises. This flood plain covers an extensive width ranging from 150m to 2km.

There are a number of rivers that act as tributaries to the River Shannon within the Study Area. These rivers are as follows:

- Cross River
- Boor River
- Curraghboy River
- River Balldangan
- River Suck

These rivers also tend to flood due to the topography of the area and the flood plain of the river Shannon extending up these rivers. There are a number of other rivers and streams within the area but not of a significant size.



Figure 2.2 River Suck

The River Suck is the second largest river in the Study Area. It is 80km in length and flows through the town of Ballinasloe before entering the River Shannon south of Shannonbridge. At times of flooding the river can widen from a width of 200m to 1km in places. The River Suck also has a number of tributaries, there are two within the Study Area, these are:

- Ballinure River
- Cloonatoragh River.



Figure 2.3 Shannonbridge

The River Suck extends the full width of the Study Area and therefore will need to be crossed. A location is required where the river is least prone to flooding. In Figure 2.1 of Appendix A, seven points are identified where the river is at its narrowest and where it would be feasible to construct a crossing.

Lakes

There are two lakes identified within the Study Area, firstly Fin Lough which is located to the east of the River Shannon and south east of Clonmacnoise. The second is located to the west of the M6, north east of Ballinasloe and is called Cranberry Lough. There are other lakes shown on OS mapping but these are identified as being seasonal and do not form a permanent attraction.

2.2.3 Designated Sites and Protected Areas

Designated sites and protected areas are identified in Figure 3.1 of Appendix A. These are broken into Special Protection Areas (SPA), Special Area of Conservation (SAC), Proposed Natural Heritage Areas (pNHA) and Natural Heritage Areas (NHA).

SACs form part of the European Natura 2000 network and are of European importance. The legal basis on which SACs are selected and designated is through the EU Habitats Directive, which was transposed into Irish Law and subsequently revised and consolidated in the [European Communities \(Birds and Natural Habitats\) Regulations 2011](#). The Directive lists certain habitats and species for which SACs must be designated.

SPAs also form part of the European Natura 2000 network and are designated for the safeguarding of 25 species of birds that occur in Ireland in accordance with the EU Birds Directive. The EU Birds Directive sets out a network of sites in all member states to protect birds at their breeding, feeding, roosting and wintering areas.

A review of the National Parks and Wildlife Service database confirmed the presence of a number of designated sites in proximity to the Study Area. Most notable is the River Shannon Callows SAC/ pNHA and Middle Shannon Callows SPA.

The River Shannon, River Suck and associated floodplains are designated Natura 2000 sites. The SACs and SPAs for the Study Area follow the River Shannon and River Suck. The designated sites within the Study Area are listed in Table 2.1. These are also illustrated in Figure 3.1 of appendix A.

Table 2.1 Designated Sites

Name	Site code	Status	Main features of interest
Glenloughaun Esker	2213	SAC	Semi-natural dry grasslands and scrubland facies on calcareous substrates
River Shannon Callows	216	SAC/ pNHA	Otter, Molinia Meadows, Lowland Hay Meadows, limestone pavement, alluvial woodland.
Fin Lough	576	SAC/ pNHA	Snail, degraded raised bogs capable of natural regeneration, wetlands, vegetation cover.
Mongan Bog	580	SAC/ pNHA	Active bog, degraded raised bog capable of natural regeneration, depressions on peat substrate
Pilgrim's Road Esker	1776	SAC	Semi-natural dry grassland and scrubland facies
Crosswood Bog	2337	SAC/NHA	Raised Bog

Name	Site code	Status	Main features of interest
Ballynamona Bog & Corkip Lough SAC	2339	SAC	Turloughs, Raised Bog (Active), Degraded Raised Bog, Rhynchosporion Vegetation, Bog Woodland
Castlesampson Esker pNHA	1625	SAC/ pNHA	Turloughs, Orchid-rich Calcareous Grassland*
Killure Bog	1283	NHA	Raised Bog
Carricknaghtan Bog	1623	NHA	Raised Bog
Clonydonnin Bog	565	NHA	Raised Bog
Doon Esker Wood	1830	pNHA	Woodland
Mongan Bog	580	SPA/NHA	Raised Bog (Active), Degraded Raised Bog, Rhynchosporion Vegetation
Lough Nanag Esker	910	pNHA	Esker
Clorhane Wood	894	pNHA	Woodland
Cloonascragh Fen & Blackwood	1247	pNHA	Woodland
River Suck Callows	222	SPA/NHA	wet calcareous grassland, flooded fen, wet woodland, Raised bog, tear pool system

The designated areas act as attractions, with the varying flora and fauna in the area. It is important that considerations are put into any route proposals for the protection of natural habitats. In particular the crossing points of the River Shannon and River Suck need avoid detrimental impact on bird movements along the river.

2.2.4 Ecology

There are regions of ecological interest contained within the Study Area. The lands are predominately agricultural land, peat land, and large areas of marsh land with reed-bed systems in the proximity of rivers.

The largest areas of interest are the Shannon and Suck Callows, within the flood plains of both rivers. These are of particular interest ecologically due to the lack of intensive farming or industry. As a result large areas of natural habitat for both flora and fauna have developed and flourished.

Three types of habitat are identified within the Study Area in a National Survey of Native Woodland Habitats in 2010 by the National Parks and Wildlife Service:

- Oak-Ash-Hazel Woodland – five areas identified;
- Wet Willow-Alder-Ash Woodland – two areas identified; and
- Bog Woodland – nine areas identified.

These woodlands range in size from 0.7 to 17 hectares.

There is one area of Ancient Long established woodland habitat identified in the area. It is located off the R446 Road between the towns of Ballinasloe and Athlone in the townland of Thomastown Demesne. It is described as being of semi-natural broadleaf and has an area of 3.6 hectares.

Fauna

There are several species of fauna that are of national and international significance, identified in the Study Area including:

Species of National Significance

- Badgers
- Otters

Species of International Significance

- Greenland White Fronted Goose
- Whooper Swan
- Red Grouse
- Bats: Leisler's Bat, Daubenton's Bat, Pipistrelle, Long -eared Bat, Whiskered Bat and Natterer's Bat

Invasive Species:

Non-native invasive species, both invertebrate and plants, are threatening many of Ireland's inland waterways, roadsides and riparian zones. Examples of these are Pond Weed, Chilean Rhubarb, Japanese Knotweed, Rhodedendron and the American Mink.

The Biodiversity Ireland database has identified the presence of Japanese Knotweed within the Study Area. Japanese Knotweed is a non-native invasive species which spreads extremely easily. The database also identifies the presence of Zebra mussels in the locations South of Athlone and in Shannonbridge. They can settle on native species smothering them and rapidly filter out nutrients from the water column increasing clarity.

2.2.5 Geology & Hydrogeology

Bedrock

As identified by the Geological Survey of Ireland (GSI), the Study Area is predominantly underlain by Lower Carboniferous Limestones. To the north of the old railway line, the bedrock is identified as Undifferentiated Visean Limestones which are described as Dinantian Pure Bedded Limestones. To the south, the area is underlain by the Dinantian Pure Unbedded Limestones of the Waulsortian Formation (WA). These rocks are described as massive clean unbedded lime-mudstone. This formation is underlain by the Ballysteen Formation (BA) consisting of dark muddy limestones with shale and the Navan Beds consisting of dark limestones with mudstones & sandstones. The western region is underlain by the Lucan Formation (Calp limestone) which is described as dark grey massive limestones, shaley limestones, and massive mudstones. Old red sandstone (ORS) outcrops within a small area to the south of the River Shannon.

A number of karst features have been identified in the Study Area, particularly to the north of the railway line where specific karst mapping has been carried out by the GSI. These include enclosed depressions, swallow holes, springs and turloughs. These are predominantly associated with the pure bedded limestones, although there are a number of springs and swallow holes within the village of Ballydangan.

There are County Geological heritage sites associated with the underlying bedrock at three locations within the Study Area as indicated in Table 2.2 below. These are also identified on the Geology & Hydrogeology map (figure 5.1 of Appendix A).

Table 2.2 Bedrock Geological Heritage Sites

Name	Theme	Description
Clorhane	IGH 15 Economic Geology	Crinoidal limestone, quarried and used in the building of Clonmacnoise ('Clonmacnoise marble').
Mushroom rock Clorhane	IGH 1 Karst	Mushroom rock
Mushroom Rock Creevagh	IGH 1 Karst	Mushroom rock

Subsoils

Subsoils over the area are identified by the GSI as consisting predominantly of peat and glacial tills, with some alluvium and sand & gravel deposits. Cutaway peat is located within the low-lying areas particularly along a track running northeast to south west from Athlone to Ballinasloe within the vicinity of the railway and another track along the outer margins of the River Shannon and River Suck. Glacial Till is identified within the central region of the Study Area. These tills are described as an unsorted mixture of cobbles & boulders in a clay matrix. Alluvium is identified along the margins of the River Shannon and River Suck. Extensive fluvio-glacial sand & gravel are identified in the north-eastern region and within the eskers which form long thin ridges of sands & gravels. A number of geological heritage areas associated with Quaternary Geology (subsoils) are identified in the Study Area, as identified in Table 2.3 below and in Figure 5.1 of Appendix A:

Table 2.3 Subsoils Geological Heritage Sites

Name	Theme	Description
Suck River Callows	IGH 14 – Fluvial and Lacustrine Geomorphology	The site has extensive areas of callow, or seasonally flooded, semi-natural, lowland wet grassland, along both sides of the river.
River Shannon Callows	IGH 14 – Fluvial and Lacustrine Geomorphology	The site has extensive areas of callow, or seasonally flooded, semi-natural, lowland wet grassland, along both sides of the river.
Mongan Bog	IGH 7 Quaternary	Bounded by eskers. Internationally important. Mongan Bog: (119 ha.) is situated near Clonmacnoise, Co. Offaly, and is an excellent example of a midland raised bog with a well-developed system of pools.
Clara Esker Complex	IGH 7 Quaternary	Fans: part of the Ballinasloe (Galw)-Split Hills (Rosc)-Clonmacnoise-Clara Esker System
Ballinasloe-Split Hills -Clonmacnoise Esker system	IGH 7 Quaternary	Esker complex, with flanking fans, deltas, moraines and sandur

Due to the relatively flat topography and the minor build up required for the construction of the path it is not envisioned that geology will be impacted by the construction of a greenway. There are no potential environmental impacts predicted

on the economic geology nor the geological heritage of the Study Area. The heritage areas may also act as points of interest along the greenway.

Hydrogeology

Groundwater vulnerability is defined as “The tendency and likelihood for general contaminants to reach the water-table after introduction at the ground surface”. The majority of the Study Area is defined as being of moderate vulnerability, with areas of low vulnerability in areas of peat and thick glacial till. Areas identified as being of high and extreme vulnerability are associated with shallow depth to rock and where rock is exposed, particularly within the areas north east of the towns of Ballinasloe and Shannonbridge and on the higher ground.

The majority of the Study Area is classified as being a Locally Important bedrock Aquifer which is Moderately Productive only in Local Zones (LI). The undifferentiated Visean Limestones to the north of the railway are classified as a Regionally Important Karstic Aquifer which is characterised by Conduit flow (Rkc).

The Study Area covers a number of Groundwater Bodies (GWB) namely Athlone West, Aughrim, Tynagh and Clara with good status under the Water Framework Directive (WFD) in the southern and central region. Within the northern section of the Study Area the GWB are classified as poor status (Funshinagh GWB and Suck South GWB).

Groundwater flow within the karstified aquifer is highly complex with high velocities and groundwater movement difficult to predict. The locally important aquifer is characterised with low permeability rocks which have localised zones of enhanced permeability within the vicinity of fault zones. Groundwater flow is through the fractures, joints and faults. Most of the groundwater flow within the aquifer is within the upper 15m, comprising of the weathered bedrock zone and a zone of interconnected fissures. Deeper flows can occur within fault zones. The groundwater flow paths are expected to be short. Groundwater recharge is through diffuse means and point sources such as swallow holes identified within the karstic areas. Groundwater flow is likely to reflect topographical contours and surface water drainage patterns, discharging into local rivers and streams. There is also likely to be groundwater discharge at the margins of raised bogs.

The Killeglan Water Supply Scheme (Tobermore Spring) is located within the northern region of the Study Area, c. 6 km north of the railway line. This spring is reported as having a total discharge of between 6,000 – 300,000 m³/day. A groundwater source protection area has been developed for the supply, see Figure 5.1 of Appendix A. Due to the nature of the karst aquifer, the entire zone of contribution for the spring is classified as an inner source protection area. This extends southward to the bogland area in the townland of Taghmaconnell and Ardnaglug along the railway line. The surface water bodies within this area which drain in the swallow hole at Glennanea are also considered to be within the protection area.

The greenway will be a non-traffic route and it is considered that there are no potential impacts on the underlying soil, geology or hydrogeology during operation. In the event that the green way transects the Killeglan water supply protection area, specific mitigation measures will need to be adopted during the construction phase.

2.2.6 Bogs and Woodlands

Privately owned and Bord na Móna owned bogs are shown in Figure 6.1, of Appendix A. Preliminary consultations were held with Bord na Móna representatives to discuss the feasibility of utilising their bogs. These discussions identified potential constraints and feasible routes through their land in order to reduce the number of land parcel requirements. However, working Bord na Móna bogs are unattractive, can be dusty in dry weather and present the obvious threat of heavy machinery operating in close proximity to a cycleway.

Additional factors to consider include ground conditions, which may affect the quality of service achievable and ease of access to existing road networks. However these bogs are a significant feature in the landscape of this area and one that is of a unique nature that should be incorporated into the route.

Woodlands are located throughout the Study Area and shown in Figure 6.1 of Appendix A. They are located on state owned land (operated by Coillte) and on private lands. They contain a variety of different tree types and different maturity levels. The types identified are as follows

- Broadleaf
- Mature Spruce
- Sitka Spruce
- Norway Spruce
- Conifer
- Longpole Pine
- Scots Pine
- Japanese Larch
- Alder
- Sycamore
- Beech
- Ash

Due to the area that the woodlands cover and their intermittent location it is not seen as a viable solution to route the greenway specifically into these lands without considering other criteria.

2.3 The Built Environment

2.3.1 Definitions

Archaeology

The national policy document Framework and Principles for the Protection of the Archaeological Heritage (DAHGI 1999a, 9) gives a general description of the archaeological heritage in Ireland:

'Archaeological sites and monuments vary greatly in form and date; examples include earthworks of different types and periods (e.g. early historic ringforts, prehistoric burial mounds), megalithic tombs from the prehistoric period, medieval buildings, urban archaeological deposits and underwater features such as wrecks. Archaeological sites may have no visible surface features: the surface features of an archaeological site may have decayed completely or

been deliberately removed, but archaeological deposits and features may survive beneath the surface.'

Architectural heritage

The Architectural Heritage (National Inventory) and Historic Properties (Miscellaneous Provisions) Act 1999, defines architectural heritage as:

- (i) structures and buildings together with their settings and attendant grounds, fixtures and fittings;
- (ii) groups of such structures and buildings and
- (iii) sites that are of architectural, historical, archaeological, artistic, cultural, scientific, social or technical interest.

Cultural heritage

The European Convention on the Value of Cultural Heritage for Society (Faro 2005), defines cultural heritage as

'a group of resources inherited from the past that people identify, independently of ownership, as a reflection and expression of their constantly evolving values, beliefs, knowledge and traditions. It includes all aspects of the environment resulting from the interaction between people and places through time.'

This definition is very broad and could include archaeology and architectural heritage, for instance, among other elements of culture. There are no specific protections for 'cultural heritage', in Irish legislation.

2.3.2 Protections

Archaeology

There are 1,477 Recorded Sites and Monuments in the Study Area for this report. The Record of Protected Structures is based on the Sites and Monuments Record (SMR), which is an archive and database maintained by the National Monuments Service. Entry in the SMR does not in itself confer any protection but the SMR is a baseline dataset and can be consulted at www.archaeology.ie.

The distribution of archaeological sites and monuments in the present Study Area, is shown in Figure 7.1 of Appendix A.

Architecture

The Athlone Town Development Plan 2014-2020 lists 233 Protected Structures and 9 Architectural Conservation Areas, including the historic town centre and waterfront areas. There are 97 Protected Structures listed in the Ballinasloe Town Development Plan 2009–2015, which also identifies the town centre and St Brigid's Hospital as Architectural Conservation Areas. The Offaly County Development Plan 2009–2015 lists 10 Protected Structures in Shannonbridge. In all three areas the variety of the Protected Structures includes domestic, military, industrial, commercial and ecclesiastical buildings, and many minor features such as post boxes and public sculptures. The relevant county development plans list other Protected Structures in the rural areas encompassed by the Study Area but their density is much lower than in these three urban centres.

The distribution of all the structures recorded by the National Inventory of Architectural Heritage (NIAH) was taken from www.buildingsofireland.ie. This is shown in Figure 8.1 of Appendix A.

2.3.3 Heritage in the Study Area

The Study Area is bracketed by historic towns at important river-crossings - Athlone and Shannonbridge on the Shannon and Ballinasloe on the Suck - and this is reflected in their history and architecture. The countryside around is not characterised by an especially high density of historic buildings or archaeological sites and monuments, but it does have a wide variety, including the internationally known early medieval monastery of Clonmacnoise.

There is a large degree of overlap between the definitions given above for archaeological and architectural heritage so that a building which is a Protected Structure may also be a Recorded Monument. Thus the following sections are intended to be complementary and not mutually exclusive accounts of heritage in the Study Area. They describe a selection of the more important features in the Study Area and do not purport to be comprehensive.

2.3.3.1 Architectural Heritage

Athlone

Athlone's streetscapes are dominated by terraces of 18th and 19th-century buildings, often brightly painted, beneath pitched slated roofs. In bold contrast, the new Town Centre development features modern retail and commercial buildings and a library, grouped around a paved plaza, creating an attractive public space in the heart of the town.

Athlone is a river town, this is strongly reflected in its architectural heritage, including its weir and navigation lock, quays, bridges and waterfront fortifications. The present road (1849) and rail (1850) bridges on the Shannon are particular structures of interest.

For many centuries Athlone Castle defended a Shannon crossing which, in strategic terms, was of national importance as a gateway between Leinster and Connacht. Its imposing walls and massive towers are still a dominant feature on the river, combining medieval and early modern masonry. The castle houses a museum. Custume Barracks, in the western outskirts of the town, is a very extensive group of largely 19th-century military buildings, occupied by infantry and artillery battalions of the Irish Defence Forces today.

Among several churches in the town, the baroque style of St Peter and Paul's (1939) is unusual in an Irish context. The twin bell towers of its west front form a striking landmark in the town centre, and are visible from a long distance, from road, rail and river.

Ballinasloe

In Ballinasloe the Suck crossing was also strategically important, as a gateway to County Galway, though it was less historically significant than the Shannon crossing in Athlone. There are remains of a minor castle or masonry fort on the riverbank in Townparks.

In the eastern outskirts of Ballinasloe, St Brigid's Hospital (1833) shown in Figure 2.1 below, is an especially unusual building. It is both accomplished and innovative in its design and is rated of national importance in the NIAH. It was built as a mental asylum, with a governor's house forming the centrepiece of four wings on an X-shaped plan.



Figure 2.1 St Brigid's Hospital (Ballinasloe, 2006)

The 'Connaught Extension' of the Grand Canal reached Ballinasloe in the 1820s. The canal is dewatered and much of the original canal basin infilled, but some canal buildings survive, as well as fine canal bridges in Poolboy and Lismanny shown in Figures 2.2 and 2.3 below.



Figure 2.3 Poolboy Bridge over the disused Grand Canal



Figure 2.3 Lismanny Bridge over the disused Grand Canal

The town centre is dominated by 18th and 19th-century buildings, often brightly painted, beneath steep, slated roofs with towering chimney stacks, in the distinct style of Irish market towns and villages. Also in the town centre, St Michael's Church (c. 1850) is a satisfyingly restrained example of gothic revivalist architecture and has stained glass windows by Harry Clarke shown in Figure 2.4 below.



Figure 2.4 Stained Glass Window by Harry Clarke

Further west, the Fair Green is dominated by St John's Church (c. 1840), another gothic revivalist building (possibly occupying a Norman motte mound).

Garbally House (1819), in the western outskirts of the town, was the seat of the Trench family, Earls of Clancarty and patrons of the town. Much of the old demesne landscape has been consumed by the expanding town but, at its heart, there is still a very fine neoclassical house with avenues, planting and formal garden features shown in Figure 2.5 below.



Figure 2.5 Garbally House

Shannonbridge

Shannonbridge is a linear village, built along a wide, airy street leading to the east bank of the Shannon. It is best known for the spectacular sixteen-arch bridge (1757) after which it is named. Again, historically this was considered a strategically important crossing, and hence the imposing, Napoleonic period fort (1810) that guards the bridge on the Roscommon bank of the river.

2.3.3.2 Cultural heritage

Athlone is a sporting hub. It boasts a first-class indoor athletics centre and the town has hosted international football and rugby matches. A new modern art gallery, the Luan Gallery, was opened in 2011. The castle holds an attractive exhibition addressing aspects of the social and economic history of the town, as well as its military history, and Custume Barracks is occasionally opened to the public on advertised open days. Ballinasloe is perhaps best known for its annual October horse fair, when the town's Fair Green is thronged for days by animals, buyers and sellers, and curious visitors. Shannonbridge is a stopping point for visitors to nearby Clonmacnoise, for recreational river traffic and for anglers on the Shannon. All three places offer innumerable opportunities for Greenway users to engage directly with local people, in pubs, shops and restaurants.

2.3.3.3 Archaeology

In the rural hinterland of the Study Area, the archaeology is very diverse. The visible monuments range from prehistoric barrows (circular or mounded funerary earthworks) to standing medieval buildings. Much of what is in the national Sites and Monuments Record is not visible, due to agricultural and peat harvesting activity. Examples are findspots of burnt mounds (alias fulachtaí fia) and wooden trackways.

The following significant features have been identified in the Study Area:

Prehistory

The rock art site at Clonfinlough (Co. Offaly) – ‘cup-marks’ (hollows) and ancient graffiti inscribed on a large boulder - this has some curiosity value but is not spectacular. There is a megalithic tomb in Mihanboy (Co. Roscommon) but it is not well preserved and is partly overgrown.

Farmers and monks

The medieval period is much better represented by standing monuments within the Study Area. The circular earthwork enclosures known as ringforts are the most common field monument in the national Sites and Monuments Record. These were early medieval farmsteads and livestock yards rather than forts. There is a notable concentration of them in the north-west part of the Study Area. There is a smaller concentration south of the railway line in the general environs of Drum, Co. Roscommon. Many of the sites are indicated by map evidence or aerial photographs but have been levelled by farm improvements and cannot now be seen at ground level. A good surviving example can be seen just north of the railway line between Athlone and Ballinasloe in Ardagawna, Co. Roscommon.

Some of the larger circular earthworks of this period may have been early monastic enclosures. There are examples at Kilgarve (Co. Roscommon), just east of Ballinasloe, and at Moore South (Co. Roscommon), in the middle of the Study Area. Another enclosure in the northern part of the Study Area, at Cloonoghil (Co. Roscommon), was probably a nunnery affiliated with Clonmacnoise.

Normans

There is a ringwork located at Dundonnell (Co. Roscommon), in the north-west part of the Study Area. The motte mound is a type of Norman military earthwork - being a steep-sided, pudding-shaped mound, often sculpted from a natural feature. The motte mound at Cloonburren (Co. Roscommon) overlooks an ancient crossing of the Shannon at Snámh dá Éan (one of two crossings with that name), in the eastern part of the Study Area. Further upriver, on the east bank, the Normans built a masonry castle at Clonmacnoise (Co. Offaly), within a large earthwork enclosure. The massive wall remnants are partly subsided and the ruins now have a peculiarly topsy-turvy look.

Fortified houses and bawns

Castles or fortified houses are located within the Study Area. The ringwork at Dundonnell (above) was fortified again in the Elizabethan period as a mortared stone ‘fortified house’ (c. 1600), and there is an example at Cloonbigney (Co. Roscommon). The ‘castle’ on the eastern bridge over the Suck in Ballinasloe (Townparks) is a mortared stone bawn wall enclosure of similar date.

Medieval churches

The Study Area is especially rich in medieval church sites. They are varied as well as numerous. South of Ballinasloe (Co. Galway), Clontuskert is a small, cloistered priory of the Augustinian order. The ruined medieval churches at Kilbegly, Taghmaconnell, Cloonburren, Curryroe and Cloniffeen were all parish churches or rural chapels for public worship. The church at Kilbegly (Co Roscommon) east of Ballinasloe occupies an even older circular enclosure which was possibly once a royal dún. Taghmaconnell (Co. Roscommon), in the northern part of the Study Area, is unusual in having an attached priest's house or tower. Cloonburren (Co. Roscommon) is on an ancient ridgeway west of the Shannon. It has a small collection of medieval graveslabs (shown in Figure 2.6 below) and is reputed to have been a nunnery originally. The ruined church at Curryroe (Co. Roscommon) is a simple structure in a largely modern graveyard. There is a community heritage centre (Drum Heritage Centre), and a restored holy well. A ruined medieval church at Cloniffeen (Co. Offaly), in farmland, overlooks the Shannon. The ruined parish church at Creagh, in a graveyard in the eastern outskirts of Ballinasloe, is probably the latest of these examples and is reputed to have been built in the 17th century, though possibly on an older church site.



Figure 2.6 Cloonburren Graveslabs

Clonmacnoise

Among all the early monasteries and ruined medieval churches mentioned above, the monastery of St Ciarán at Clonmacnoise, on the Shannon (Co. Offaly) - and the associated nunnery a little to the east - stands out as a superlative collection of early medieval buildings (churches, round towers) and sculptures (high crosses, carved graveslabs) shown in Figure 2.7 below. It is a national monument site in the care of the Office of Public Works, with an exhibition centre on site, and was proposed by the State as a World Heritage Site in 2010.



Figure 2.7 Church and High Cross at Clonmacnoise

2.3.4 Amenities & Attractions

Failte Ireland visitor Information

Data from Failte Ireland was reviewed and items within the Study Area are shown in Figure 9.1 of Appendix A. It can be seen from the data that there are few tourist attractions between Ballinasloe and Athlone.

Attractions in the area include Clonmacnoise and the historic bridge at Shannonbridge. Other attractions include the Motte and Bailey along with the Church Cross & Cross Slabs at Cloonburren, Caoinne Marbh in Nure, the Holy Well and Church near Curryroe along with the Megalithic tomb immediately north of Curryroe.

Besides the tourist attractions noted to be of particular interest, more subtle attractions are also available that include:

- Turf cutting;
- Industrial peat cutting and associated railway lines;
- Lismanny bridge;
- Canal lock gate;
- Coillte forest;
- Increased proximity to the river encourages fishing amenities.

Fisheries and Water Quality

One of the largest attractions within the area are the rivers and the water quality and the services they provide. The principle water body in the Study Area is the River Shannon with the River Suck being its major tributary. The Shannon system is an important mixed fishery with both game and coarse angling and many of its tributaries hold important salmonoid and lamprey spawning and nursery habitat.

The Environmental Protection Agency's (EPA) envision mapping describes the water of the rivers in the area of being a Q3-Q4 rating which in quality terms means that there is slight pollution within the rivers and that Game fish are potentially at risk. This low level of pollution enhances the quality and attractiveness of the area.

Ballinasloe

Ballinasloe borders Roscommon, East of Galway and serves as a central base for tourists providing extensive accommodation and a host of pleasure activities including:

- Coarse angling;
- Boating and marina;
- River Suck;
- Shooting;
- Clontuskert Abbey;
- Golf; and
- Horse riding.

In particular Ballinasloe is best known for its Horse Fair. This is Europe's oldest Horse Fair, dating back to the 1700's, attracting up to 100,000 visitors from all over the world.



Figure 2.8 Horse Fair Sculpture Ballinasloe

As Ballinasloe is one the largest towns in the Study Area it will provide services and facilities to the users of the greenway.

Shannonbridge

Shannonbridge is a village located on the River Shannon, in County Offaly. It is rich in heritage and the village is surrounded by an important nature conservation area such as the Shannon Callows.

The main attractions include:

- River Shannon;
- Shannonbridge Potteries;
- Monastic settlement of Clonmacnoise; and
- Shannonbridge Bridge.

Clonmacnoise

Clonmacnoise, as identified in the archaeology section above, is an ancient monastic and proposed World Heritage Site situated 6km north of Shannonbridge. The main attractions in the area include:

- Three high crosses;
- Cathedral;
- Seven churches;
- Two round towers; and
- visitor centre, which displays a number of cross-slabs and the 9th Century Cross of the Scriptures.

Drum

Drum is a village situated 5km west of Athlone just south of the new M6. Attractions in the area include:

- Glendeer Pet Farm;
- Meehambee Dolmen, a portal tomb;
- Drum Cemetery;
- St. Brigid's Church;
- Drum Monastic Site; and
- Drum Heritage Visitor Centre.

Athlone

Athlone is a thriving business and shopping town centrally located in the midlands of Ireland on the banks of the River Shannon. It is strategically located in the centre of Ireland, on the border of two counties (Roscommon and Westmeath). Given its central location, Athlone is a natural hub for transport. the Dublin-to-Galway railway line runs through the heart of the town along with the M6 motorway also linking Dublin and Galway by road.

Athlone offers overseas visitors a genuine and welcoming experience and provides excellent amenities and services including hotels, Spas, B&Bs and other accommodation. Athlone's position on the River Shannon downstream of Lough Ree has ensured a consistent influx of water enthusiasts.

Service Areas

As well as the towns and villages within the Study Area, there are other facilities provided within local communities. The R446 Road was until recently the N6 National Primary Route and was the main connector road between Dublin and Galway. This has now been replaced by the M6. As a promenade route a number of local businesses operate along the road to provide facilities to passing traffic.

Along the section of road from Ballinalsoe to Athlone there are 5 facilities that provide services such as a grocery shop, filling station, restaurant and post office. Two of these are situated in the townland of Cornafulla, two within the area of Toberiheem and one on the extents of Ballinasloe Town just east of the Roscommon/Galway border.

2.3.5 Road and Rail Network

Ballinasloe to Athlone is characterised by a number of local roads; the M6 motorway by-passes both towns. The R446, formally the national road (N6) links Galway and Dublin and provides an alternative connection between the towns.



Figure 2.9 Ballinasloe Train Station

Shannonbridge is linked to Athlone and Ballinasloe via the R444 and R357, with carriageway widths limited to approximately 7.5 metres. In contrast, the R446 carriageway widths are approximately 10.0 to 12.0 metres including hard shoulders. In terms of existing road network between Ballinasloe and Athlone, the M6 motorway is a significant constraint.

The existing transport network is shown in Figure 10.1 of, Appendix A. There are currently 14 potential crossing points (on-road) excluding railway and river crossings along this section of the M6.

There are public bus networks that operate within the region and provide links into the area from Dublin, Galway, Roscommon, Mullingar, Tuam and Birr.

Irish Rail and Bord Na Mona Railways

The Dublin to Galway Railway line runs directly between Athlone and Ballinasloe and there are 10 existing crossing points within the Study Area. Space is available along the south side of the track which facilitates incidental vehicular access in some areas, and the bridge abutments are set back on this side of the track, however this space would be unsuitable to be used as a greenway due to safety issues and visual attraction reasons.

There is potential to locate the greenway adjacent to the railway boundary. This would offer the most direct route between Athlone and Ballinasloe and would help to minimise land severance.

Bord Na Mona operate a substantial railway network between all the bogs they own and operate within the region. Discussions were held with Bord Na Mona during the route selection process to discuss the feasibility of utilising areas of these railway corridors. They had operation concerns with people using long sections of their network due to the movements of large machinery. There was also a concern over the attractiveness of the route during the summer months during harvesting of the bogs.

Existing Cycle and Walking Trails

There are two existing cycle trails within the area. The first is the Green heartlands cycle route, which provides a loop from Roscommon Town to the River Shannon and back again. The second is the Clonmacnoise Cycle Loop. This loops from Athlone to west of Shannon Bridge and returns up the east side of the Shannon through Clonmacnoise and into Athlone.

These cycle routes use the existing road network and are not segregated from traffic and not presently of a standard to be utilised for the greenway.

Two walking trails called the Shannonbridge River Shannon/Fortifications Loops are situated on the west side of the Shannon. These both start at the Shannonbridge Fortifications with one of the routes around the fortification and the second utilising a local road and the banks of the River Shannon. These may provide an opportunity to upgrade part of these existing trails to incorporate the greenway.

2.3.6 Population Centres

The population centres within the Study Areas are shown in Figure 4.1 of Appendix A. Ballinasloe is the second largest urban centre in County Galway after Galway city. The census of Ireland 2011 recorded a population of Ballinasloe Town at 6,449.

Within the Study Area Athlone Town is the largest populated area. The census recorded a population in the town of 20,153. This makes Athlone the most populous town in the midlands.

Shannonbridge recorded a population of 206 persons during the census and is the smallest town within the Study Area.

Figure 4.1 of Appendix A shows other populated areas within the Study Area with a populous up to 2500 but the majority of the areas within the region have a populous in the region of 0-500.

2.4 External Parameters

2.4.1 Technical/ Design Standards

The applicable standards for the design of facilities applicable to this scheme are:

- EuroVelo, Guidance on the route development process, (*EuroVelo, December 2011*);
- NRA TD 300 Rural Cycle Scheme Design (*National Road Authority*).

EuroVelo base its standards on its requirements for safety and consistency. It states that:

- The route should be aesthetically pleasing in terms of its location and design.
- If possible refreshment should be available every 30 km, accommodation every 50 km and connection to long distance public transport every 150 km;
- Routes should generally be open all year and in all weathers, although in the far north of Europe or in high mountain areas this may not always be possible;
- Alternatives should be considered for sections of route very heavily used by other types of non-motorised traffic (walkers, horse-riders, etc.); the priority is to minimize possible conflicts;
- Traffic free route sections should be wide enough for two cyclists to cycle side-by-side most of the time, with a desired standard allowing two pairs of cyclists to meet and pass safely. Variable widths are acceptable along a route;
- Sections of route defined as “traffic free” may carry up to 50 vehicles per day;
- Gradients of more than 6% should be avoided wherever possible, although on mountain sections the maximum gradient may be 10 % or greater.

The New NRA TD 300 Rural Cycle Scheme Design document was published in April 2014. This document outlines the design standards and factors that need to be considered when providing cycling facilities on National Roads and along the National Cycle Network in rural areas. Similar to the EuroVelo standards, the core principals within the NRA standards are the same, in that there is a requirement to provide a facility that is safe, coherent, direct, convenient, comfortable, attractive and accessible. However added to this are a number of design standards that relate to widths, gradients, design speeds etc.



The standards state that dedicated cycle facilities are required on roads of speeds greater than 50kph and/or Annual Average Daily Traffic (AADT) greater than 1,000 vehicles. With regards to the width of the facility a number of criteria should be examined, including the expected usage and the type of facility. shows the width requirements for various types of facilities.

Table 2.2 Range Mandatory Widths for Cycle Facilities

		Desirable Min (m)	One Step Below Desirable Min (m)	Two Steps Below Desirable Min (m)
One Way (Cycle Facility)	Low Volume	2.0	1.75	1.5
	High Volume	3.0	1.75	1.5
Two Way (Cycle Facility)	Low Volume	2.5	2.0	1.75
	High Volume	3.0	2.5	1.75
Shared Use One Way (Cycle Facility) with pedestrians	Low Volume	3.0	2.0	1.75
	High Volume	4.0	3.0	2.0
Shared Use Two Way (Cycle Facility) with pedestrians	Low Volume	3.0	2.0	1.75
	High Volume	5.0	3.0	2.5

Details of verge width are also provided and are generally between 1 and 1.5m, while carriageway separation distance varies from 2m on a road with speeds of less than 80kph to 6m on roads with speeds greater than 80kph. Stopping sight distances are also specified, details are provided in Table 2.3.

Table 2.3 Dynamic Sight Distance and Stopping Distances

Design Speed (km/h)	50 km/h	30 km/h	10 km/h
Minimum Dynamic Sight Distance (m)	110	65	15
Minimum Stopping Sight Distance (m)	60	35	15

The horizontal alignment is an important factor in designing safe and comfortable facilities for cyclists; tight radii can cause cyclists to lose balance or momentum, however appropriately tight radii can act as a speed inhibitor, if applied correctly with appropriate signage. Similarly the gradients can make a facility comfortable and attractive or can be challenging for some users. The design standards set down recommended values as shown in table 2.4 and 2.5.

Table 2.4 Recommended Horizontal Radii (m) for Different Design Speeds

Design Speed (km/h)	Minimum Horizontal Radius (m)
10 km/h	4
30 km/h	25
50 km/h	94

Table 2.5 Recommended Gradients

	Gradients
Desirable Maximum	3%
One Step Below Desirable Maximum	5%
Two Steps Below Desirable Maximum	10%

Details are also provided on crossing details for major and minor roads, roundabouts and accesses. Pavement surfaces, access control and drainage requirements are also noted, with signage and markings an important part of the scheme to be considered at an early stage.

3. ALTERNATIVES CONSIDERED

3.1 Previous Feasibility Studies

NUI Galway concluded a high-level constraints study and an outline route selection report for a national cycle network connection from Mullingar to Oranmore in April 2013. The study was restricted to consideration of options using publicly owned lands. Between Ballinasloe and Athlone 7 route options were considered and assessed against the following criteria:

- Route Type;
- Directness;
- Gradient; and
- Integration.

These criteria were established prior to the current projects objective being defined. A summary of the 7 route options is shown in Table 3.1. A review of the routes is shown in the 'Outcome' column in which viable options or positives associated with any particular option are noted. The viable options feature in corridor/ route options are subject to further review.

Table 3.1 Summary of NUI Galway Section B route options

Route ID	Route Type	Brief Description	Outcome
B1	Off-Road (railway)	The route follows the live Dublin-to-Galway railway line from Athlone to Station Road in Ballinasloe.	Viable option to be brought forward and assessed
B2	On-Road	The route continues west of Athlone to connect to the Táin Trail north of the live Dublin-to-Galway railway line. It turns south to meet the R446 approximately 4 km outside of Ballinasloe, before entering the town.	Not viable as the route proposes to utilise excessive amount of on-road cycleway
B3	On-Road	West of the River Shannon, this route runs south along the local road network before joining the Táin Trail 7 km from Athlone. From here, the route continues until it connects to the R446, approximately 4 km from Ballinasloe.	Not viable as the route proposes to utilise excessive amount of on-road cycleway
B4	On-Road	The route follows the R446 (old N6) from Athlone to Ballinasloe.	Not viable as the route proposes to utilise excessive amount of on-road cycleway
B5	On-Road	The route follows the R446, east of Athlone before turning south along local roads adjacent to the River Shannon towards Clonmacnoise and Shannonbridge. From here, the route joins the R357 to Ballinasloe.	Not viable as the route proposes to utilise excessive amount of on-road cycleway

Route ID	Route Type	Brief Description	Outcome
B6	Primarily On-Road	Similarly to Route B5, the proposed route follows local roads towards Shannonbridge. The route move off-road to follow Bord na Móna (BnM) railway line (crossing the Shannon on railway bridge). The route continues towards Ballinasloe through BnM land.	Not viable – although certain elements of the proposed route are attractive
B7	On-Road	Similar to Route B2, the proposed route follows the Táin Trail north of the Railway line before turning south to connect into the R446, approximately 1 km from Ballinasloe.	Not viable as the route proposes to utilise excessive amount of on-road cycleway

The preferred route in the report was Route B1, along the live railway.

3.2 Do-Nothing

In the ‘Do-Nothing’ scenario, no modifications or improvements are made to existing infrastructure and the route selected is ultimately the cyclist's decision.

The most appropriate route, considering this approach is the R446 regional road which was previously the N6 national primary road prior to the opening of the M6 Motorway in July 2009. The R446 continues to offer an alternative for drivers and vehicles restricted from using the adjoining M6 motorway route or wishing to avoid the tolled sections of the motorway and as such has traffic volumes of approximately 2400 AADT (2014). The speed limit along the R446 is 80kph with average recorded speeds along the road approaching or exceeding this limit. With relatively high traffic volumes and vehicles speeds the ‘Do-Nothing’ alternative does not achieve the project objectives for a traffic-free route.

3.3 Do-Minimum

The ‘Do-Minimum’ alternative generally comprises an investigation of feasible ‘on-line’ upgrade of existing routes which might be capable of delivering the required levels of service and safety in accordance with applicable design standards.

Funding was sought from Roscommon County Council to upgrade the R446 to incorporate two 1.75m wide on-road cycle lanes in the existing hard shoulders.

This concept is similar in nature to a suggested ‘Do-Minimum’ scenario. Although upgrading the R446 to incorporate on-road cycle lanes is feasible and there is a significant cost-benefit, the characteristics of the route are not compliant with the general requirements of greenway facilities. In line with Fáilte Ireland research, studies have shown that cyclist route preferences are driven by scenery rather than directness of route which the R446 route provides. As a result the alternative to upgrade the R446 has not been considered further in the development of proposed route options.

4. ROUTE CORRIDOR OPTIONS

4.1 Introduction

This chapter identifies the Route Corridor Options that were considered and sets out the selection process used in the assessment of those options. The NRA Project Management Guidelines (PMGs) set out a sample appraisal matrix outlining five criteria that are used to rate each route corridor during the route selection stage. The criteria put forward in the PMGs are not necessarily appropriate to cycleways/greenways considering the comparative size and cost of the scheme relative to motorways and national roads projects and therefore a revised assessment criteria process is outlined in the next section. A broad corridor has been identified for each of the four possible route options, these corridors are set over a width of approximately 200m within which it is intended to locate the preferred route. The width of the corridors presented provides the flexibility for movement of the route itself as required in order to avoid sensitive areas or to make use of opportunities that may arise to connect to certain amenities.

4.2 Assessment Criteria

The criteria adopted for the Greenway Scheme are informed by the user preferences that were identified in the Fáilte Ireland Cycling and Activities Research, guidance from EuroVelo documents and international best practice.

Eight criteria under which to assess the route options have been developed as follows:

- (i) Landscape and Visual (Attractions and Potential Impacts);
- (ii) Flora & Fauna (Attractions and Potential Impacts);
- (iii) Cultural Heritage and Visitor Attractions (Attractions and Potential Impacts);
- (iv) Connectivity and Accessibility to local amenities;
- (v) Quality of Service;
- (vi) Cost;
- (vii) Physical Constraints; and
- (viii) Material Assets, Human Beings.

The multi-criteria outlined were used to complete a relative comparison of each route option as the routes cannot be readily quantified on a single consistent scale. The tool that has been used to facilitate this is a graphic representation as shown in Figure 4.1, where a colour scale of red to green is used. The most favourable ranking for a particular issue is coloured green, with the least favourable coloured red.

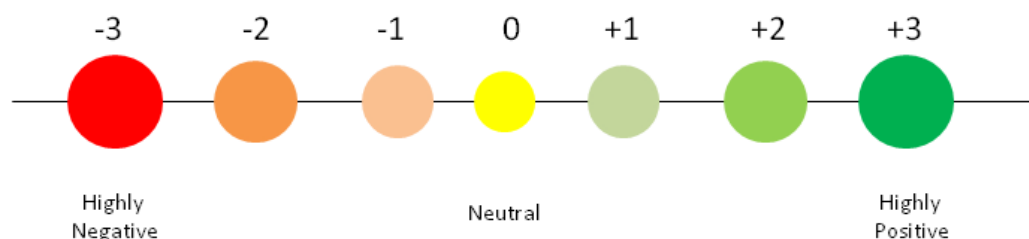


Figure 4.1 Key to Multi-Criteria Assessment

4.3 Proposed Route Corridor Options

Following documentation of the constraints and points of interest within the Study Area, a total of 4 route corridor options were examined between Ballinasloe and Athlone with different connections and alignments. These options were as follows:

- **Route Corridor Option 1**
 Route along the live Dublin to Galway railway line;
- **Route Corridor Option 2**
 Route linking to Shannonbridge west of the River Shannon and north of the River Suck;
- **Route Corridor Option 3**
 Route along disused Ballinasloe canal prior to crossing the River Suck and linking to Shannonbridge west of the River Shannon ; and
- **Route Corridor Option 4**
 Route linking to Shannonbridge and to the east of the River Shannon The corridor passes through Shannonbridge and Clonmacnoise towards Fardrum.

The preliminary route corridor options proposed are shown in Figure 4.2; for greater detail see Figure 1.2 in Appendix A of this report.

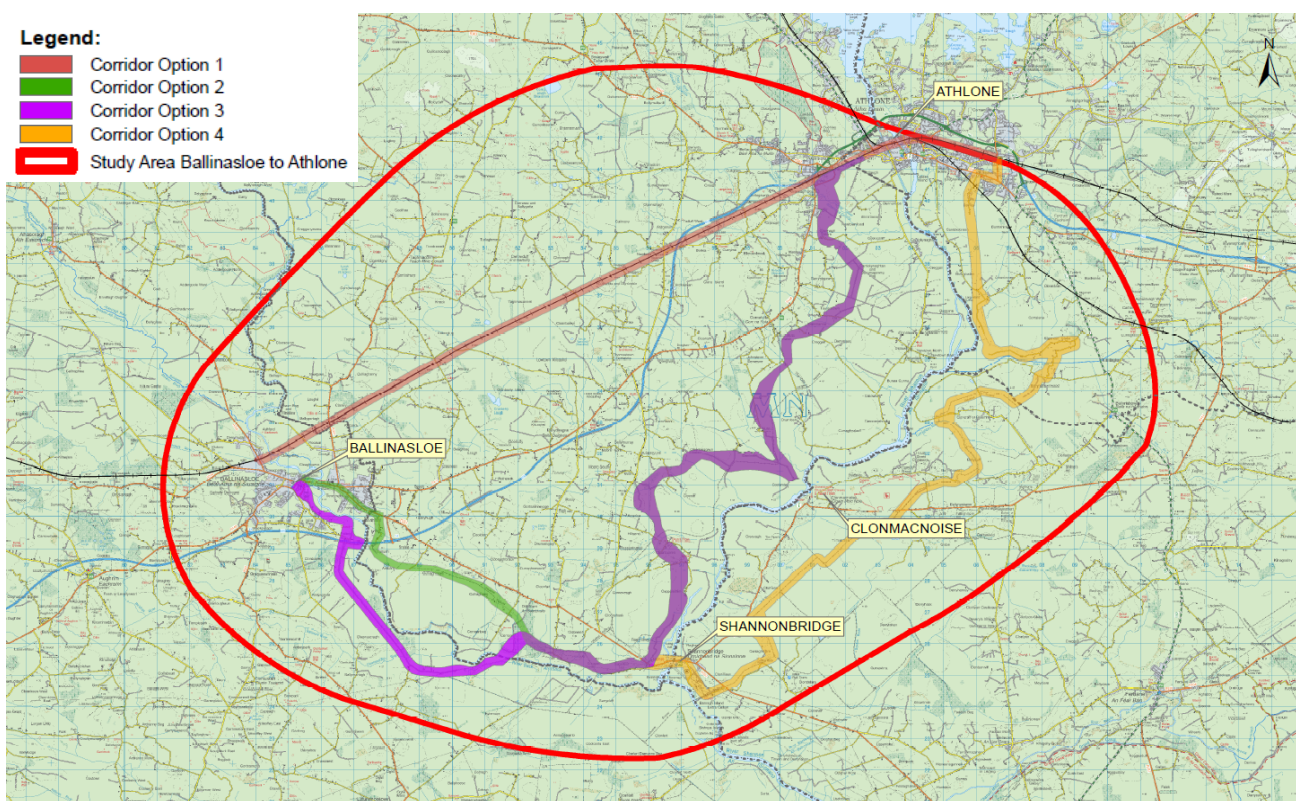


Figure 4.2 Route Corridor Options

Route Corridor Option 1

This route corridor weaves from north to south of the live railway line between Ballinasloe and Athlone. The corridor is approximately 22 km long with the closest service station located approximately 4 km away. This is the most direct corridor whilst minimising land take requirements and land severance.

Route Corridor Option 2

This route corridor crosses the River Suck in or near Ballinasloe Town before crossing the M6 motorway at Tulrush. Between Tulrush and Derryglass it runs adjacent to the Bord na Mona industrial railway line. This route corridor is approximately 39km long; however, it would run within 1km of Shannonbridge.

Route Corridor Option 3

The route corridor follows the line of the disused Ballinasloe Canal and crosses the M6 motorway at Waterways Ireland's Lock Gate at Poolboy. It continues along the disused canal through Kellygrove bog south of the River Suck towards Cloonascragh and Garryduff prior to crossing the river at Coreen. Thereafter it follows a similar corridor to Option 2. The length of the corridor is approximately 45 km.

BnM supported the use of Kellygrove bog, which is no longer active. In addition, there is an existing walking trail along this corridor, though it is lightly used due to the rough terrain.

Route Corridor Option 4

A fourth route corridor follows Options 2 & 3 as far as the R357. It continues along the R357 for approximately 1.5 km, passing through Shannonbridge. From this point, the corridor returns to the industrial railway line, passing 2.5 km east of Clonmacnoise. The route corridor continues north towards Fardrum, east of Athlone.

This was a preliminary route corridor option that had been considered as an alternative to routing the greenway through Athlone which would provide direct access to Clonmacnoise. It fell away as an option when the importance of crossing the Shannon in Athlone became apparent, and it is not considered further in the report.

4.4 Assessment of Options

This section of the report details how the 3 Route Corridor Options (1, 2 & 3) rate against the criteria identified in Section 4.2.

4.4.1 Landscape and Visual (Attractions and Potential Impacts)

An assessment of the quality of views and landscape along the route corridor options was completed by the Paul Hogarth Company in May 2013. This Landscape Assessment report is included in Appendix B. This assessment rated views in the vicinity of the proposed corridors, noting places of interest, "wow-factor" views and general views in the towns. "Wow-factor" views are those views which rated over 7/10 in the landscape assessment.

Fig 4.9 illustrates the landscape assessment for the Study Area based on preliminary route corridor options that were being considered at the time of the assessment. The values are reproduced in Fig 11 of Appendix A.



Figure 4.3 Landscape Assessment Drawing

Route Corridor Option 1

Route Corridor Option 1 travels through the Roscommon Landscape Character area "Brideswell Esker Belt", which is observed to be of moderate value.

Within the Paul Hogarth assessment, while one point in Clonboley bog, at Ardماغlug, scored 5/10, this corridor otherwise scored poorly, and rated 2/10 on average, but as low as 1/10 at the eastern end of the route corridor approaching Athlone. No 'wow' views were noted along this corridor. The total length of the corridor is 23km and the average rating awarded is 2.3/10.

Route Corridor Option 2

Route Corridor Option 2 passes through the landscape character areas "Clonown and Shannon Callows" and "Suck Callows", which are respectively ascribed Very High Value and High Value in the Roscommon Development Plan.

In general, Option 2 has been rated 4.4/10 with isolated zones at Raghreabeg, Clonburren, Nure and Carricknaghtan rated 6/10. A 'wow' view was noted near this corridor at Coolamber. The total length of the corridor is 39km and the average rating awarded is 4.4/10.

Route Corridor Option 3

Route Corridor Option 3 is approximately 45km in length and crosses the River Suck near Correen. From Creggan West to Athlone the corridor is similar to Option 2, where the average rating awarded is 4.4/10. West of Creggan West, the corridor has been awarded a 4/10 rating at Poolboy, but otherwise 5/10 at Kellysgrove, Clonascragh, Clonascragh River, Lismanny Bridge, Lismanny Bog and Oldtown.

Lismanny and Raghrabeg (north) were awarded 6/10 in contrast to Raghrabeg (south) rating of 3/10. A 'wow-factor' view was noted at the River Suck crossing point that rated 7/10. Including the section between Creggan West and Athlone, the overall Option was rated 4.74/10 on average.

Table 4.1 summarises the results of the landscape view analysis.

Table 4.1 Assessment of Landscape and Visual

Route	Route Option 1	Route Option 2	Route Option 3
Rating	2.3	4.4	4.74
Mark	-1	1	2

4.4.2 Flora & Fauna (Attractions and Potential Impacts)

Similar to the assessment of quality of views, the potential to encounter interesting wildlife/ landscape on each corridor was assessed. This section also assesses the various route corridor options for likely impacts on designated sites, e.g. SPAs, SACs and NHAs.

Route Corridor Option 1

Route Corridor Option 1 is proposed along the existing live Dublin to Galway railway line. This corridor mainly passes through farmland and Clonboley bog. This corridor passes through two designated sites on the western end of the corridor. They include the Nationally designated Suck River Callows NHA and the European designated River Suck Callows SPA.

The River Suck is the largest tributary of the River Shannon and comprises a long, sinuous area of semi-natural lowland wet grassland, which floods extensively each winter. Particular species of plants grow in the area which provide food plants for the wintering wildfowl listed as qualifying interests of the SPA. These species also forage on the improved grasslands within the site. The Suck River Callows is an important site for wintering waterfowl. Of particular note is the internationally important Greenland White-fronted Goose flock that is based along the Suck. The site is also known to support nationally important populations of at least three species, i.e. Whooper Swan, Wigeon and Lapwing. The good quality riverine and grassland habitats are also home to populations of Otter and Irish Hare, and Brown Trout occur in the river.

The development of a greenway along this route corridor is not expected to cause any significant negative impacts on the qualifying interests of the River Suck Callows SPA, as the majority of the corridor exists within close proximity to the Dublin to Galway railway line which already provides a strip of developed land through the area. It is expected that if the greenway was constructed close to the railway line negative impacts could be kept to a minimum. This corridor does not provide a high level of opportunity to see interesting wildlife sites however. A riverine or woodland site would provide much greater opportunity to see interesting flora and fauna.

Route Corridor Option 2

This route corridor option travels south from Ballinasloe, crossing the river Suck near Ballinasloe town and is proposed to run adjacent to the Bord na Mona industrial railway line between Tulrush and Derrglass. This route corridor then joins onto the eastern section of Route Corridor Option 3. That section of the corridor is discussed in detail under Route Corridor Option 3 below.

The main designated sites of concern along the initial section of Option 2 are the River Suck Callows SPA and Suck River Callows NHA (which would have the same environmental issues in relation to habitats and species as those listed under Option 1 above) and also the River Shannon Callows SAC/NHA and the Middle Shannon Callows SPA. The Middle Shannon Callows SPA site has extensive areas of callow, or seasonally flooded, semi-natural, lowland wet grassland, along both sides of the river. The Middle Shannon Callows qualifies as a site of International Importance for wintering waterfowl and therefore any development in the area surrounding Shannonbridge, while providing a good opportunity for birdwatchers and cycle track users to see interesting wildlife would also need to be carefully assessed for potential negative impacts on qualifying interests.

Route Corridor Option 3

This option begins in the town of Ballinasloe and travels south along the disused Ballinasloe section of the Grand Canal, crossing the M6 motorway and continuing in a south easterly direction before turning north to cross the River. Consideration of the designated sites mentioned above for Option 2, will be required as the corridor progresses further northeast towards Athlone the impact on other sites will also need to be considered.



Figure 4.4 Proposed Linear Park Cycle Route (Disused Canal)

Travelling north from Shannonbridge Option 3 will, for the majority of the corridor, be outside the designated sites present, but certain areas of the corridor may be required to travel closer to the boundary. For example the corridor may provide the opportunity of viewing Clonmacnoise monastery which is partly located within the River Shannon Callows SAC and the Middle Shannon Callows SPA, therefore there may be opportunities for birdwatchers in the area or also those interested in riverine mammals (the area is a known otter habitat) and also interesting important habitats such as Molinia Meadows, Alluvial forest, etc.

At Correen, route corridor Options 2 and 3 travel through the Coilte Forestry. Generally, each corridor maximises the use of Bord na Móna Bogs, either skirting the bogs and adjacent agricultural land or following the industrial railway line. The likelihood of seeing interesting wildlife reduces if the bogs are active. Route corridors

running through or adjacent to designated sites, in particular the Shannon Callows increases the potential to see interesting flora and possibly fauna.

Summary

The Route Corridor Options that pass through designated sites and inactive bogs or travel nearer the Shannon Callows increase the likelihood of seeing interesting flora and fauna but also may increase the potential for possible negative impacts on the qualifying interests of these designated sites through increased visitor numbers and the physical greenway construction.

The Route Corridor Options outlined above provide a significantly wide area of approximately 200 metres. This should allow for alterations to the corridor to avoid likely significant impact on qualifying habitats and species where necessary, while still allowing the end user to enjoy the flora and fauna that these sites have to offer. A Habitats Directive Appropriate Assessment would be carried out for the preferred route to ensure that any likely significant impacts are mitigated and that the preferred route would have no adverse impacts on the integrity of the Natura 2000 sites within the area.

Table 4.2 Review of Flora & Fauna

Route	Route Option 1	Route Option 2	Route Option 3
Mark	0	2	3

4.4.3 Cultural Heritage and Visitor Attractions

An important aim of the route selection process for the greenway is to avoid adverse impacts on architectural and archaeological heritage. We do not envisage any significant adverse impact on any standing monument or historic building arising from the detailed design and construction of the greenway. However, this does not mean that it is the aim of the project to entirely avoid any and all elements of the architectural and archaeological heritage. To the contrary, the route selection and design process will aim to bring greenway users into proximity with an attractive, informative and well-preserved selection of monuments and historic buildings. Some potential highlights on or adjacent to the three route corridor options between Ballinasloe and Athlone are described below.

Route Corridor Option 1

The Corridor largely travels alongside the existing Galway–Dublin railway line. This was originally part of the Midlands and Great Western Railway network. It was opened in 1851 and represents the noisy energy and engineering skills of the 19th century. (The railway cuts directly through a series of raised bogs, which are of interest as natural heritage features.) There are railway buildings at the stations in Athlone and Ballinasloe; and the latter is an example of a rural Victorian station.

Along the western sector of this corridor option, nearer Ballinasloe, the medieval church at Taghmaconnell and the fortified houses at Dunconnell and Cloonbigny are distant from the corridor, at c. 3–4 km as the crow flies, and even longer via local roads.

Along the eastern sector nearer to Athlone town, the ringfort at Ardagawna, the megalithic tomb at Mihanboy, and the ruined medieval church and heritage centre at Curryroe (Drum), are all within a few hundred metres of the railway.

Route Corridor Option 2

The Corridor departs Ballinasloe via a bridge crossing on the Suck, guarded by the castle or walled bawn enclosure (c. 1600) in Townparks, on the east bank. It passes by the striking neoclassical gateway and buildings of St Brigid's Hospital (1833), the ruined post-medieval church at Creagh and an early medieval monastic earthwork enclosure at Kilgarve.

There are some fine old houses in the eastern outskirts of Ballinasloe, but as these are generally private dwelling houses in planted grounds, access is unlikely to be available. The ruins of Tulrush House - a minor Georgian country house - are in a picturesque setting on the east bank of the Suck and would be intervisible with any final route selection within the Corridor.

Further east, on the north bank of the Suck is Coreen Castle - a crenellated mansion house (1833) occupying the site of a medieval castle. The Corridor crosses the old avenue in woodland and converges with Route Corridor Option 3.

Route Corridor Option 3

The Corridor departs from Ballinasloe near St Michael's Church and Square. Leaving the town, it heads south along the Connacht Extension (1828) of the Grand Canal. (In the town, the old canal basin is infilled but there is a new boat harbour and marina on the Suck, nearby.) Although much of the canal is dewatered now, long sections of the earthworks and towpaths survive, and there are fine canal bridges at Poolboy and Lismanny.

The medieval priory of Clontuskert is about 2 km to the west (cross-country) of this corridor. One of its dependent churches, a little ruined chapel, is close by the canal on its east side, in Poolboy.

The Corridor crosses to the east bank of the Suck near Coreen Castle and proceeds east along a glacial gravel ridge or esker, which is of interest as it would probably have been a routeway through this wet and peaty environment in ancient times.

The corridor turns north 1km from Shannonbridge, but within easy reach of it via a detour along the R357, which crosses the Shannon on the impressive sixteen-arch bridge.

Turning north, the Corridor climbs to higher ground and passes by the ancient nunnery site at Cloonburren and the Norman motte mound, nearby. This overlooks an early crossing of the Shannon, at the ferry place known as Snámh Dá Éan.

Further north, the ancient churchyard at Moore is 1 km to the west of the corridor.

Turning towards the Shannon again, the Corridor offers a splendid view over the river to the churches and round towers of St Ciarán's monastery at Clonmacnoise and the neighbouring Norman castle. (Incidentally, this was also the site of the earliest recorded bridge crossing on the Shannon, a broad timber structure built c. AD 800. There are surviving timbers in the river bed but no visible remains).

A summary of the more significant cultural attractions that are accessible, or that could potentially be accessible from each route corridor, is shown in Table 4.3. The range of attractions is limited. The place of greatest interest in the Study Area is undoubtedly Clonmacnoise - a proposed World Heritage Site, which is accessible via

an 8km detour along a regional road. Of the three route corridors considered here, Options 2 and 3 offer views to Clonmacnoise, from the west bank of the Shannon.

Routes 2 and 3 score equally (2 points) and both of them outscore Route 1 (1 point). Route 2 offers views of historic buildings in the eastern outskirts of Ballinasloe whereas Route 3 offers the experience of cycling along the old canal towpaths and crossing the Suck on a new bridge. Otherwise, they substantially overlap and therefore have many features in common.

Table 4.3 Assessment of Archaeological and Architectural Heritage Attractions

Route	Route Option 1	Route Option 2	Route Option 3
Attraction	<p>Victorian railway stations</p> <p>Ardagawna ringfort</p> <p>Mihanboy megalithic tomb</p> <p>Drum medieval church and visitor centre</p>	<p>Castle on the Suck at Townparks</p> <p>St Brigid's Hospital</p> <p>Creagh old church</p> <p>Correen House demesne</p> <p>Shannonbridge</p> <p>Cloonburren churchyard and Norman motte</p> <p>View to Clonmacnoise from Coolamber</p>	<p>St Michael's Church and Square</p> <p>Grand Canal earthworks and bridges</p> <p>Medieval chapel, Poolboy</p> <p>Correen House demesne</p> <p>Shannonbridge</p> <p>Cloonburren churchyard and Norman motte</p> <p>View to Clonmacnoise from Coolamber</p>
Mark	0	1	2

4.4.4 Connectivity and Accessibility to local amenities

There is a comprehensive offering of services in Ballinasloe and Athlone, that include overnight accommodation, retail outlets and public transport. In addition the Dublin-to-Galway railway line stops within 2km from each town centre.

Contrary to small towns and villages, larger towns are expected to offer a variety of shops and overnight accommodation. There are hotels and guest houses in both towns, however self-catering facilities were only provided for in Athlone in which they are located on the outskirts of the town centre. A review of Fáilte Ireland data has shown that neither town provides camping/ caravan sites and hostels services.

There is a plentiful supply of retail shops in Athlone and Ballinasloe that includes food and clothes shops, jewellery and other gift shops in addition to bicycle shops.

The EuroVelo guidance requires basic accommodation to be available at the start and end of every daily section (every 30 – 90 km) along the greenway. Presently accommodation is only available in Ballinasloe and Athlone.

The approximate lengths of each corridor between Ballinasloe and Athlone and the score of each corridor under this heading is shown in Table 4.3.

A basic level of facilities, that includes toilets and food, should be provided every 15-45km. It has been highlighted by Fáilte Ireland Research that groups of families may require stopping areas and facilities more often.

Facilities that provide toilets and food, and that are located within 2km of the proposed corridors, were assessed for this criterion.

Within the proximity of Option 1 there are facilities within the Glendeer Pet Farm which provides a cafe as well as a local attraction. This is located 6km south west of Athlone in the townland of Curryroe. To access this a 1.5km diversion is required to the south of the corridor.

For Options 2 and 3 the town of Shannonbridge, which is located 15km and 17km east of Ballinasloe respectively, is accessible by a detour of approximately 1km to the east of the corridor.

Other facilities are also available a further 20km along the corridor, where a 1km diversion to the north provides access to a service station on the R446.

Table 4.3 below shows the number of services and maximum distance between them in the vicinity of the different Route Corridor Options.

Table 4.3 Access to accommodation and facilities

Route	Route Option 1	Route Option 2	Route Option 3
Distance between accommodation (km)	22	39	45
Maximum distance between basic facilities (km)	16	20	20
Services available	Glendeer Pet Farm	Shannonbridge R446 Service area	Shannonbridge R446 Service area
Mark	1	0	0

4.4.5 Quality of Service

The following sections sets out the level of service attainable on each of the three proposed Route Corridors.

Route Corridor Option 1

The railway crosses National and Regional roads between Ballinasloe and Athlone. It crosses them in a variety of different ways from underpasses to level crossings. There are 6 road crossings and 8 farm accesses along the corridor across the railway. It is envisioned that 20km (92%) of this corridor would be classified as greenway. On average there is a crossing every 1.6km. The number of crossings and comfort factor were considered and an overall rating was determined.

Route Corridor Option 2

In total there are 5 major crossings (motorway and regional roads), and approximately 25 minor crossings (local roads). Over the length of 39km assessed (excluding Ballinasloe), this would equate to a crossing every 1.3 km on average. It is envisaged that 97% of the corridor would be greenway.

Route Corridor Option 3

There are 2 major crossings and 27 minor crossings. Considering the overall length (excluding Ballinasloe town) it is expected that there will be, on average, a crossing every 1.5 km. Approximately 45 km (98%) of the corridor would be classified as greenway.

Each route was assigned a relative rating as shown in Table 4.7.

Table 4.7 Assessment of Quality of Service

Route	Route Option 1	Route Option 2	Route Option 3
Averaged distance between crossing points (km)	1.6	1.3	1.5
Percentage Greenway (%)	92	97	98
Mark	0	1	1

4.4.6 Cost

Although preliminary route development explored the potential of utilising Bord na Móna property this was found to be less practical. Through consultation with Bord na Móna, concerns were raised over the use of their lands and in particular routing cyclists and pedestrians through active bogs that are currently subject to peat harvesting.

Of particular concern to Bord na Móna, was Route Option 2 which runs directly through their land and which could significantly impact their operations with concerns raised regarding limited available space north of Cullighmore bog and the railway corridor that follows.

In addition to BnM concerns noted, dust pollution is a significant factor in harvesting the peat.

As a result of these findings no additional benefit in terms of maximising the use of Bord na Móna could be determined, while route options 2 and 3 benefitted from utilising the Coillte forestry at Correen.

The estimated construction costs have been based on a rate of €128,000 per kilometre. A preliminary examination of the structural requirements was also carried out based on an estimate on the number of river crossings, rail crossings etc. Two corridors run north of the River Suck. The bridge crossing in Ballinasloe is recorded in the 'National Inventory of Architectural Heritage' and crosses a designated area, as a result it is anticipated that issues will arise if the suggested solution of fixing a cantilevered structure to the existing bridge is provided to accommodate cyclists.

A bridge crossing over the river Suck is required for route option 3, adding an estimated €1m to the cost. The relative costs of each corridor option are presented in Table 4.9.

Table 4.9 Potential Cost

Route	Route Option 1	Route Option 2	Route Option 3
Cost (€ million)	2.8	5.0	6.8
Mark	1	0	-1

4.4.7 Physical Constraints

In relation to technical risk a number of factors were assessed including:

- Construction;
- Flooding (Appendix A, Figure 2); and
- Topography.

Due to the nature of the scheme, construction will generally not be an issue. Difficulties may arise when construction is required through designated areas and/or within flood plains. It is envisaged that engineering methods will be devised to overcome any issues encountered.

Table 4.10 Assessment of Physical Constraints

Route	Route Option 1	Route Option 2	Route Option 3
Mark	0	0	0

4.4.8 Material Assets, Human Beings

The delivery of the Ballinasloe to Athlone section of the project will be impacted by land parcel requirements. The number of land parcel requirements has not been determined but it is expected to be similar for route options 2 and 3.

The number of land parcels along route 1 is lowest. The emerging route will be assessed further relative to the land parcel requirements.

Table 4.11 Assessment of Material Assets (Land Parcel Requirements)

Route	Route Option 1	Route Option 2	Route Option 3
Mark	1	0	0

4.5 Assessment Matrix

A route options decision matrix was used to aid in the selecting the preferred route. The ratings assigned to criteria defined in Section 4.2 were used to inform Table 4.12 route options assessment matrix.

Table 4.12 Route Options Assessment Matrix

c	Route Option 1	Route Option 2	Route Option 3
Landscape and Visual	-1	1	2
Flora & Fauna	0	2	3
Cultural Heritage and Visitor Attractions	0	1	2
Connectivity and Accessibility to local amenities	1	0	0
Quality of Service	0	1	1
Potential Cost	1	0	-1
Physical Constraints	0	0	0
Material Assets	1	0	0
Overall Score	2	5	7

Based on the overall assessment process Route Option 3 is the preferred option.

Appendix A: Figures and Drawings

Appendix B: Landscape Assessment Reports