Mid-Shannon Wilderness Park Greenway

Planning Reports

Volume 1

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EIA Screening Report

Mid-Shannon Wilderness Park Greenway
EIA Screening Report

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1 INTRODUCTION

Longford County Council (LCC) have appointed Clandillon Civil Consulting (CCC) to carry out an Environmental Impact Assessment (EIA) Screening Report to inform a planning application for the Mid-Shannon Wilderness Park Greenway, a proposed new greenway through the Bord na Móna bogs of central Longford. The aim of the project is to expand the greenway provision in County Longford and to add to and link into the growing network of greenways in Ireland in accordance with the policies and objectives set out in Project Ireland 2040, the National Cycle Policy Framework, the Longford and Roscommon County Development Plans and associated planning documents. The provision of the greenway is also central to the creation of the Mid Shannon Wilderness Park which is linked to the vision of Ireland's Hidden Heartlands. The location of the scheme is illustrated in Figure 1 below.

A central tenet of the scheme is to make use of existing rail lines previously used by Bord na Móna as part of their peat harvesting operations, which ceased in 2020. The use of these lines and the associated existing ballast and rail structures will significantly reduce the cost and potential environmental impact of the proposed scheme.

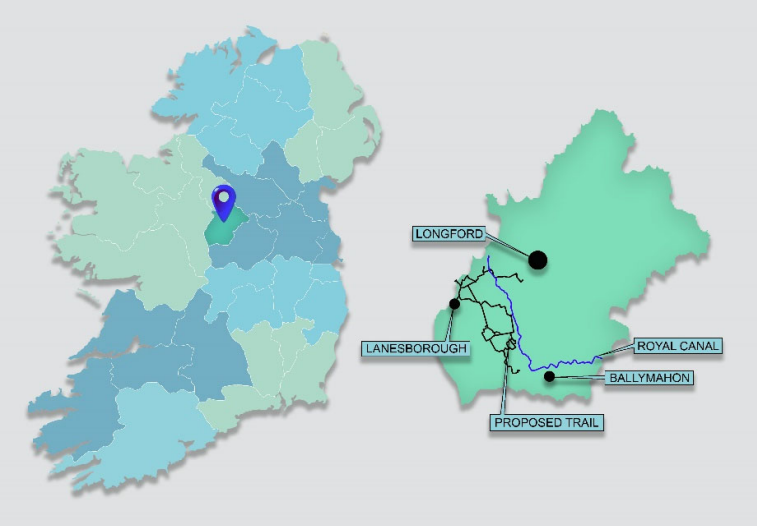

Figure 1: MSWP Greenway – Location Plan

In its entirety, the scheme is approximately 73 km long and consists of:

- 61 km of greenway along decommissioned Bord na Móna rail lines;
- 6 km of greenway along existing local roads;
- 6 km of greenway through existing cutaway bog.

Of the 73 km, 23.4 km of the proposed greenway have been subject to successful Part 8 planning applications.[1] Existing planning applications account for 2.5 km of the 6 km of the greenway which cross cutaway bog. While predominantly located in Co. Longford, the scheme also includes a crossing of the River Shannon into Co. Roscommon. This crossing will be over the existing Bord na Móna bridge at Kilnacarrow, which will be retrofitted as part of this scheme.

The purpose of the Screening for Environmental Impact Assessment is to determine whether an EIA Report (EIAR) is required as part of the EIA Directive (2014/52/EU) for the proposed development. The screening process comprises two phases. The first phase considers the requirement for a mandatory EIA with regard to Annex I and Annex II of the EIA Directive (as amended). The second phase of the work considers the requirement for a sub-threshold EIA. Since the project is a local authority own development, the requirement for sub-threshold EIA is addressed in Article 120 of the Planning and Development Regulations 2001. This report therefore considers the types and characteristics of potential impacts on human health, land and soils, biodiversity, air and climate, and the water environment. A flood risk assessment, ecological assessment and cultural and

[1] Part 8 Planning References No. 49, 57, 62, 64, 67, 76, 79 and 81

archaeological heritage assessments have also been completed and are included as appendices 2, 3 and 4 to this report respectively. An Appropriate Assessment Screening Report has also been completed and is included as Appendix 5 of this report and a planning report is included as Appendix 6.

2 EIA SCREENING REQUIREMENTS AND GUIDANCE

Environmental Impact Assessment (EIA) is the process of examining the anticipated environmental effects of a proposed project. EIA usually commences at the project design stage, where it is decided whether EIA is required, via the production of an EIA screening assessment. The projects which require the production of an EIAR are listed in Annex I and Annex II of the EIA Directive as amended.

Projects listed in Annex I of the EIA Directive have mandatory EIAR requirements. Each Member State decides on a case-by-case basis whether Annex II projects require an EIAR. Thresholds have been set for Annex II projects in Irish legislation (Schedule 1 Part 2 of the Planning and Development Regulations (2001-2020). A mandatory EIAR is not required in respect of this Project as it does not fall under the projects listed in Annex I of the EIA Directive.

Where a project is of a specified type but does not meet, or exceed, the applicable threshold, then the likelihood of the project having significant effects on the environment needs to be considered as part of the EIA screening.

The EIA screening process is governed by the following documents:

- EIA Directive 2014/52/EU;
- European Union (Planning and Development) (Environmental Impact Assessment) Regulations 2018 (S.I. No. 296 of 2018);
- Guidelines for Planning Authorities and An Bord Pleanála on carrying out Environmental Impact Assessment, Department of Housing, Planning & Local Government, August 2018;
- Planning and Development Regulations 2001.

2.1 EIA Directive

EIA Directive 2014/52/EU provides criteria that are applied in the screening phase to determine if a development is likely to have a significant effect on the environment. The criteria are as follows:

- the Characteristics of Projects, which must be considered having regard, in particular, to the size and design of the whole Project, the cumulation with other existing and/or approved Projects, the use of natural resources, the production of waste, pollution and nuisances, and the risk of major accidents and/or disasters and the risks posed to human health.
- the Location of the Projects, so that the environmental sensitivity of geographic areas likely to be affected by Projects must be considered, having regards to the existing and approved land use, the relative abundance, availability, quality and regenerative capacity of natural resources and the absorption capacity of the natural environment in particular.
- Type and Characteristics of the potential impact with regards to the impact of the Project on the environmental factors specified in Article 3(1).

The characteristics of the project, its location and potential impact are described and assessed in Chapters 3 -8 of this report.

2.2 Guidelines for Planning Authorities and An Bord Pleanála on carrying out Environmental Impact Assessment

The European Union (Planning and Development) (Environmental Impact Assessment) Regulations 2018 (S.I. No. 296 of 2018) have transposed Directive 2014/52/EU and are incorporated into the

Guidelines for Planning Authorities and An Bord Pleanála on carrying out Environmental Impact Assessment (the Guidelines). Chapter 3 of these Guidelines deals with the EIA Screening process. As referred to in Section 3.5 of the Guidelines, the EIA Screening process is based on professional expertise and experience, having due regard to the '*Source – Pathway – Target*' (SPT) model, which identifies the *source* of likely significant impacts, if any, the environmental factors (*target*) which will potentially be affected, and the route (*pathway*) along which those impacts may be transferred from the source to the receiving environment. As per Section 3.1 of the Guidelines, the screening determination "*is a matter of professional judgement, based on objective information relating to the proposed project and its receiving environment. Environmental effects can, in principle, be either positive or negative*". The EIA Screening process must also have regard to the European Court ruling that the EIA Directive has a "wide scope and a broad purpose" when determining if an EIAR is required.

The Chapter 3 Guidelines have been considered in developing the assessments and conclusions outlined in Chapters 5 - 8 of this report.

2.3 Planning and Development Regulations 2001.

Article 120 of the Planning and Development Regulations 2001 Regulations states the following:

> *'Where a local authority proposes to carry out a subthreshold development, the authority shall carry out a preliminary examination of, at the least, the nature, size or location of the development'*

Schedule 7A of the Planning and Development Regulations 2001 'Information to be provided by the Applicant or Developer for the purposes of Screening Sub-Threshold Development for the Environmental Impact Assessment'. The requirements include:

- Description of the proposed development
- Review of relevant information within local and county development plans
- Appropriate Assessment of study area
- Flood Risk Assessment of study area
- Description of the aspects of the environment likely to be significantly affected.

The nature, size and location of the development is described in Chapter 4 of this report, while a description of potential environmental impacts is outlined in Chapter 5 -7. A planning report has been completed which considers the planning context and is included in Appendix 6 of this document. A Flood Risk Assessment and Appropriate Assessment has also been completed and these assessment are included as Appendices 2 and 5 respectively. The information required from Schedules 7 and 7A of the Planning and Development Regulations 2001 and responses which address the information to be provided are included in Appendix 1.

3 DESCRIPTION OF PROPOSED DEVELOPMENT

The route is 73 km long and will utilise decommissioned Bord na Mona industrial railway for 61 km of the length. Of the remaining 12 km, 6 km of the proposed route will run along existing local roads and 6 km will require construction of cycleway within raised cutover peat or glacial till ground conditions. The proposed design will incorporate existing ballast from decommissioned railway, visible in Figure 2 below, once rails and sleepers have been removed.

Figure 2: Decommissioned Bord Na Mona Industrial Railway

It is proposed that the majority of the greenway will have a compacted gravel and quarry dust surface. Where the greenway runs along or intersects a road, the existing pavement surface will be retained or repaired. Where greenfield construction of cycleway pavement is proposed, best practice guidance will be followed and a floating road construction will be adopted to minimise damage to vegetation and allow for a saturated pavement foundation.

In addition to the main body of the greenway, which runs from the outskirts of Ballymahon to Lanesborough and from Lanesborough to the outskirts of Longford town, there are a number of looped sections which facilitate shorter recreational journeys and spurs to existing facilities, including a link to the existing Corlea Trackway, a spur that to Royal Canal Greenway at Clondra and a link to the Royal Canal Greenway North of Keenagh. There is also a spur which will facilitate the crossing of the River Shannon over an existing Bord na Móna bridge at Kilnacarrow.

The proposed development will include the following:

- Construction of 73 km of 3m wide shared/pedestrian cycleway;
- Use of 61 km of decommissioned railway ballast as foundations for greenway;
- Incorporation of existing structures and crossings;
- Provision of new at-grade crossings and associated signage and street furniture;
- Conversion of existing bridge at Kilnacarrow to facilitate pedestrians and cyclists;
- Provision of footfall counters, picnic seats, benches and bicycle racks; and
- Pavement repair and resurfacing along sections of impacted local and regional roads.

The proposed greenway surfacing will predominantly comprise of compacted quarry dust/stone to minimise impact to environment whilst being sensitive to surroundings and providing user comfort. Bound asphalt surfacing is proposed at junctions with R392 (15m approach to road) and where the greenway is located adjacent to the N63. Sections of the greenway which are susceptible to flooding will also have a bound surface to reduce wash out. Cross sections of these pavement details can be seen in Figure 3and Figure 4 below.

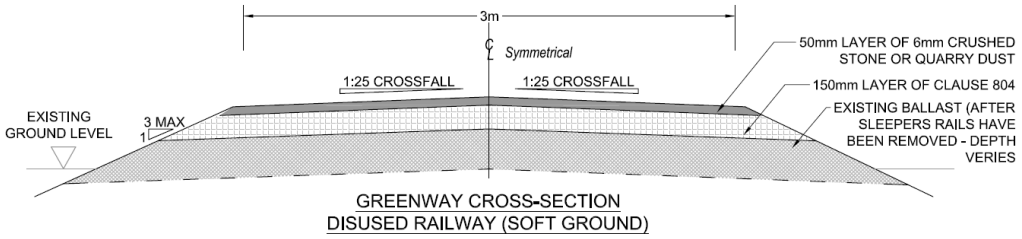

Figure 3: General Cycleway Construction Detail

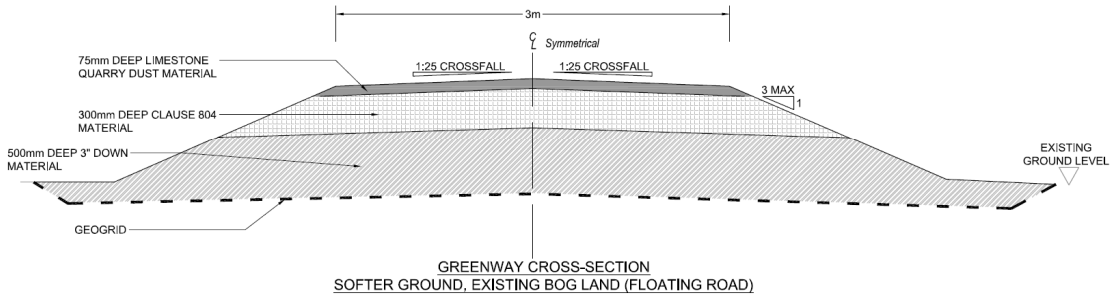

Figure 4: New Cycleway construction in Peat/Soft ground

Where the proposed greenway follows the alignment of lightly trafficked local roads or tracks, it is typically proposed that the road surface will be shared between vehicles and non-vehicular traffic. Where sharing the surface will result in long section of road where vehicles will have no opportunity to safely pass non-vehicular traffic, passing bays will be provided. Figure 5 below illustrates a typical cross-section along areas where passing bays will be provided along local roads.

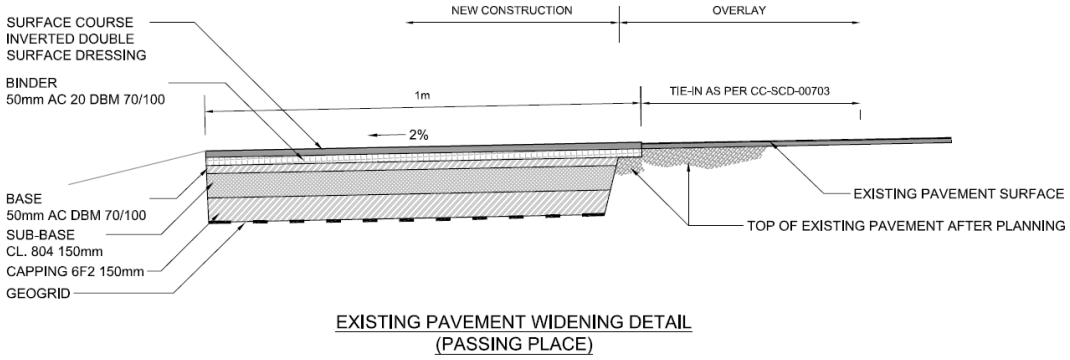

Figure 5: Widening detail (Passing Place)

Existing roads will be resurfaced as part of the works at junction locations and where the greenway is aligned with the road.

4 LOCAL AND COUNTY DEVELOPMENT PLANS

The Longford County Council Development Plan 2021, which has been produced as a draft document has been reviewed as part of the screening process. The plan is supportive of the provision of active travel measures generally and outlines specific goals in respect of the development of the MSWP through the development of recreational trails and networks. Key relevant extracts from the Longford County Develop Plan 2021 are outlined in Table 1 below.

Table 1: Excerpts from Longford County Development Plan 2021-2027 (Draft)

LCCDP 2021 Ref:	Extracted Text
CPO 6.43	Support the designation of the Mid-Shannon Wilderness Park as a UNESCO Biosphere candidate site in the County
CPO 6.84	Build on tourism investment in Center Parcs and enhance Longford County as a destination, by enhancing the Royal Canal, Dublin Westport Greenway, and Mid-Shannon Wilderness Park through the strategic development of recreational trails and networks.
CPO10.20	Support community projects and industry-led collaborative tourism initiatives which aim to enhance and promote the visitor offering in towns and villages. These shall include trail heads for the Rebel Trail, Literary Trail and Mid Shannon Wilderness Park (see Appendix 5: Tourism - Literary & Rebel Trail Map)
CPO10.35	Continue to develop and promote the Rebel Trail, Literary Trail, Train Trail and the Mid Shannon Wilderness Park as part of Longford's primary tourism offer and experience (see Appendix 5: Tourism - Literary & Rebel Trail Map and Mid-Shannon Wilderness Park Map)
CPO10.51	Continue to work closely with Bord na Móna, Fáilte Ireland, Waterways Ireland, NPWS, Coillte, Just Transition related groups and neighbouring counties to realise and develop the potential of the Mid Shannon Wilderness Park and Lough Ree Biosphere Nature Reserve
CPO12.46	Work with partners and stakeholders to progress the development of the Mid-Shannon Wilderness Park and Biosphere

The predecessor of the Longford County Develop Plan 2021 was the Longford County Development Plan 2015 – 2021. Extracts from it, which are supportive of active travel measures, recreational trails and the MSWP are outlined in **Table 2** below.

Table 2: Excerpts from Longford County Development Plan 2015 – 2021

LCCDP 2015 - 2021 Ref:	Extracted Text
PED 8	It is policy of the Council to pursue the redevelopment of the towpath of the Royal Canal for pedestrian/cycle use, providing linkages with Longford Town to the River Shannon in Clondra and to the towns of Keenagh, Ballymahon and Abbeyshrule and to link with the National Cycle Network at Mullingar via established cycle routes in Westmeath.'
PED 2	The Council shall promote the use of alternative transport to the private car through encouraging enhanced pedestrian and cycling facilities in accordance with the principles of sustainable development.'
Chapter 4.5	*'Royal Canal Walking/Cycling Route* *There are current proposals to link Dublin to Mullingar and Longford Town to the Shannon via the Royal Canal as walking/ cycling routes. It is envisaged during this plan period (2015- 2021) that the Royal Canal link will be extended from Mullingar through Longford to the Shannon. This would provide a major and important off road National walking/cycling route across the County which will have major tourism benefits for Longford. In addition, plans are well advanced to upgrade the Canal spur to Longford Town as a walking/cycling route. This will have important implications for Longford Town as the main population hub for the County, making the Town more accessible to tourists using the canal and creating a natural corridor that will link the population hub to the various water channels and tourism facilities around the County'*
Chapter 4.5	*Corlea Archaeological and Biodiversity Centre* *Longford County Council in association with Keenagh Community Group and Corlea Visitor Centre now propose to develop approximately 12 acres of cutaway bog near Corlea Centre for a recreated Iron Age type settlement and to present the archaeology and biodiversity of the area as a visitor attraction. A more detailed report on this project is attached as an annex to this plan. As part of this proposal it is intended to provide walking trails across the bog to the Corlea Centre. These walking trails have the potential to be linked with the adjoining Royal Canal. This will facilitate boating, walking and cycling visitors coming from Dublin and travelling to the West via Longford and the Shannon to visit Corlea Centre.'*
Section 2.3	*'There is now a proposal to develop a new Corlea Archaeological and Biodiversity Project. This can be* *added to in time with the Royal Canal Walking/Cycling Route and the Mid Shannon Wilderness Park to provide the various communities and villages of South Longford with wonderful amenity facilities and tourism infrastructure. It will also encourage visitors to the area especially of the walking and cycling variety. This will help the area to build a more sustainable ecotourism base which will in turn provide economic benefits to the area.'* *'The above proposed walking trails and the Corlea Centre have the potential to be linked with the adjoining Royal Canal in the period 2014/15. This will facilitate boating,*

LCCDP 2015 - 2021 Ref:	Extracted Text
	walking and cycling visitors coming from Dublin and the East and travelling to the West via Longford and the Shannon to visit both Longford and the Corlea Centre. As the portion of bog immediately adjoining the Corlea Project site is worked out and re-habilitated by Bord na Móna it is hoped to develop an additional area of bog with a direct link back to the Corlea Centre. This would provide dedicated walking trails through the bog presenting the developing biodiversity. It is expected that a portion of the low lying bog shall be re-watered and colonized with appropriate native plants, birds and fish. The timetable for this portion of the project to be achieved is expected to be between 2020-2025.'

The Roscommon County Development Plan 2014-2021 is also supportive of Active Travel Measures as evidence by reference to Section 4.1.2, outlined below:

> *The National Cycle Policy Framework (as part of Smarter Travel – A Sustainable Transport Future 2009) which sets out a national policy for cycling, aims to create a stronger cycling culture, a more friendly environment for cycling and improved quality of life. The vision is that all cities, towns and rural areas will be bicycle friendly. The policy document sets a target of 10% of all trips by bicycle by 2020 and places emphasis on promoting and integrating cycle networks."*[2]

Objective 4.20 of the Roscommon County Development Plan 2014-2021 states:

> *'Objective 4.20 Implement the relevant policies of the Department of Transport's National Cycle Policy Framework and support the provision of a national cycle network including rural cycle networks for recreational cycling and green routes as the opportunity arises and where relevant supported by environmental assessment."*[3]

A planning report which provides further context to the planning context of the proposed scheme is included in Appendix 6 of this report.

5 APPROPRIATE ASSESSMENT (AA)

A screening for Appropriate Assessment was carried out as part of the environmental evaluation of the proposed scheme. All 12 no. Natura 2000 sites within 15 km of the proposed scheme were considered. The nearest of these are Lough Ree Special Area of Conservation and Lough Ree Special Protection Area. No significant impacts on these or any of the Natura 2000 sites were considered likely. This was substantially based upon distance and lack of connectivity -and therefore pathways for impacts - between the designated sites and the proposed route. Potential for impacts on the closest designated sites were considered unlikely, given the location of the proposed works on degraded cutover bog habitat and the lack of potential for works to cause any changes to chemical or physical condition of protected sites. While disturbance of some protected bird species *outside* the SPA was considered unlikely, but possible, best practice works following standard guidance will eliminate this as a potential impact. The complete AA screening report is included in Appendix 5 of this report.

[2] Roscommon County Development Plan 2014-2021, Section 4.1.2 – Cycling and Walking
[3] Roscommon County Development Plan 2014-2021, *Objective 4.20*

6 FLOOD RISK ASSESSMENT

A flood risk assessment of the proposed greenway area was carried out as part of the environmental evaluation of the proposed scheme. The results of this Flood Risk Assessment, which is included in Appendix 2, indicated that parts of the proposed Greenway route are subjected to Fluvial Flood risk.

In particular, the Greenway section within Lanesborough and the Kilnacarrow BnM Bridge encroaches Flood Zone A, B and C. The OPW datasets of the 2009 and 2015 Shannon River Flood events also indicate that the southern side of scheme is at Flood risk caused by the Ledwithstown river.

A Justification test was not required since the development is considered to be 'water compatible' and therefore appropriate for all Flood Zone classes A, B and C. It was determined from the FRA that the proposed greenway was unlikely to impact the frequency or extent of flooding within the study area. Sections of the greenway which are susceptible to flooding will also have a bound surface to reduce wash out. Cross sections of these pavement details can be seen in Figure 3 and Figure 4 above.

7 RECEIVING ENVIRONMENT

This Chapter of this report considers the receiving environment and the potential impact of the scheme in respect of:

- Population and Human Health;
- Biodiversity;
- Land and Soil;
- Material Assets;
- Landscape;
- Air/Climate;
- Water; and
- Cultural Heritage.

7.1 Population and Human Health

The proposed greenway begins at Carronbey, circa 4 km Northwest of Ballymahon and continues through predominantly rural agricultural or boglands until it reaches Ballyloughlan, 4 km south of Longford town. It is anticipated that the proposed greenway will positively affect human health by improving recreational access to the outdoors and by increasing road safety by separating vehicles from pedestrians and cyclists. It is also believed there will be health benefits brought about by the connection to other routes and wider audiences. The effect of increased population traversing the area is not anticipated to be significant as the railway route has been used for mechanised transport for many years.

7.2 Biodiversity

Walkover ecological surveys of the entire route have been completed. By far the greater majority of the route is proposed for the decommissioned Bord na Móna railway line. This habitat (almost entirely bare ground or recolonising bare ground) is of low sensitivity. No rare, threatened or protected plant species were found to occur here. Habitats surrounding the route are also generally of low sensitivity. The greater majority of these are degraded (cutover) bogland but there is also some conifer plantation and bog woodland. The route will not impact upon any of these habitat types. The route will also utilise existing road and laneways. No significant impacts may be predicted on these built habitat areas.

Evidence of activity of protected species such as Pine Marten was found along areas of this railway line. Disturbance of a temporary nature may be expected on this species. However, this will be temporary in duration and no long-term impacts on this species are predicted. Similarly, the construction phase of the project may cause disturbance to some protected bird species. However, this will be temporary in duration and the operational phase will not have significant impacts.

The project is being developed as the boglands are being closed to production and Bord na Móna is developing a rehabilitation programme for these areas. It is therefore considered that the overall biodiversity of the area will improve over the duration of this project. A full Ecological Impact Assessment is included in Appendix 3 of this report.

7.3 Land and Soil

The GSI shows the quaternary geology underlying the proposed route comprises predominantly of cut over raised peat and is therefore, generally flat. There are glacial features known as drumlins along and across the route in many locations. These are pear shaped and have a steep side, known as the stoss side, and a gentle sloped side, referred to as the lee side. The drumlins are comprised of till derived from limestone, or in the southern section, till derived from carboniferous sandstone and cherts. The superficial geology underlying the section North of Lanesborough, bordering the River Shannon, comprises of alluvium. Derryglogher and Derraghan More, located in the centre of the route, described as having rock outcrop/subcrop on the GSI geology 1:100000 viewer. As the majority of the proposed greenway will be located along decommissioned railway, the quaternary geology will have little influence on the development as the ballast of the existing railway will be incorporated into the cycleway. The same can be said of areas of the proposed greenway which will utilise existing local roads. Where greenfield construction of cycleway pavement is proposed, best practice guidance will be followed and a floating road construction will be adopted to minimise excavation and damage to vegetation and allow for a saturated pavement foundation. The incorporation of existing ballast from the decommissioned railway, and minimal excavation for at-grade construction in bogland areas outwith the railway line, means minimal impact is anticipated on land and soils as a result of the proposed development.

7.4 Material Assets

The proposed greeway will be located, predominantly in rural, agricultural or boglands. It is anticipated that the greenway would have a positive impact on material assets in the area, improving local infrastructure. The design has considered current land use and has provided crossings, fencing & gates to accommodate existing agricultural practices, land uses, and infrastructure. Where the proposed greenway follows the alignment of lightly trafficked local roads or tracks, it is typically proposed that the road surface will be shared between vehicles and non-vehicular traffic. Where sharing the surface will result in long section of road where vehicles will have no opportunity to safely pass non-vehicular traffic, passing bays will be provided as per figure 5 above. It is likely that some field access/gateways will be upgraded to passing places benefiting both landowners and road users. The provision of passing places should benefit those who access their land/properties from these local roads and increase safety for road users.

7.5 Landscape

County Longford has a rich and diverse landscape character. The ability of the landscape to absorb development is correlated to its sensitivity. In order to sustain a good quality of life for residents and visitors to Longford, it is important that landscapes are managed in such a way to ensure changes are positive in their effects and that valued landscapes are protected.

The assessment of Landscape for this report follows the methodology adopted by Longford County Council's County Development Plan (2015-2021) see below:

"Longford is a relatively small county with a low number of well-defined Landscape Character Types (LCT). These broadly correlate with Landscape Character Areas (LCA), as they tend to be geographically specific and the predominantly flat nature of the landscape facilitates topographical definition of units. For this reason, it is considered that a landscape character unit, combining both LCA and LCT as defined in the guidelines, is an appropriate method of assessment in this instance. In broad terms, there are seven basic landscape character units in Longford.

Unit 1 – Northern Drumlin Lakeland

Unit 2 – Northern Upland

Unit 3 – Shannon Basin/Lough Ree

Unit 4 – Central Corridor

Unit 5 – Inny Basin

Unit 6 – Peatlands

Unit 7 – Open Agricultural"

The MSWP Greenway lies within 2 of the 7 units: Unit 3 (Shannon Basin/Lough Ree) and Unit 6 (Peatlands).Unit 3 is located along the western boundary of the County forming the border with Counties Leitrim and Roscommon with large areas of water cover, inland marshes and boglands lying within a relatively flat landscape. Unit 7 is located in the west of the County and includes the settlements of Lanesboro and Clondra and extends towards Ballymahon in the south.

In terms of landscape, the nature of the proposed greenway being principally located on the disused railway track is unlikely to have any significant impact on the landscape of the area.

The existence of the railway allows the Mid Shannon Wilderness Park Greenway to be incorporated into an already altered environment. At operational stage, the proposed greenway will not detract from existing views or views to or from any heritage features present. The project has the potential to have a positive landscape and visual impact through the provision of additional views and interpretation of the area and its heritage. During construction the presence of plant and machinery will detract from certain views. However, this is considered to be a slight impact which is short term in nature and which is easily offset by the benefits accrued at the operational stage The proposed development will be developed sympathetically with the existing environment and landscape planting incorporated where necessary.

7.6 Air/Climate

The proposed greenway will be predominantly located in rural areas with low population density. The EPA air quality website provides air quality data for Longford town. The Longford town station monitors particulate matter (2.5 and 10) and the current air quality index rating (June 2021) is 1 which corresponds to a 'good' classification.

It is not anticipated that the development would result in any likely significant impacts to air quality. The use of plant in the construction phase would have potential to cause environmental effects, however these effects can be reduced by adhering to best practice guidelines. Provision of a greenway, and the associated improved accessibility and infrastructure, could encourage vehicle users to instead walk or cycle, reducing emissions, increasing sustainable tourism and having a positive impact on air quality.

7.7 Water

The proposed greenway is located within 3 catchments. These catchments are known as Upper Shannon 26C, 26E and 26F, within the HA 25 Lower Shannon Hydrometric area(www.catchments.ie). The river waterbody status for rivers within these catchments is 'good' in between Ballymahon and Lanesborough. The status for the River Shannon North of Lanesborough is 'poor' according to the Water Framework Directive website watermaps.ie. Best practice guidelines will be followed during Greenway construction adjacent to the royal canal and to the River Shannon. Dust screens/silt traps shall be implemented when undertaking improvement works on Kilnacarrow bridge to prevent dust emissions over Shannon. The same will also be applied at bridge crossing upgrade by Derrymacar Lough.

Groundwater status along the proposed route is denoted as 'good' quality in the ESM map viewer tool. The location of the proposed greenway is above locally and regionally important aquifers. The Ballymahon area is shown to be of high to extreme aquifer vulnerability. The area between Ballymahon and Lanesborough is generally low to moderate aquifer vulnerability with the exception of Derraghan More and Derryglogher where the ESM viewer denotes extreme aquifer vulnerability. High to extreme aquifer vulnerability is shown beneath Lanesborough town. North of Lanesborough, the aquifer vulnerability is deemed 'low', changing to moderate/high towards Longford town, the classification at which is 'extreme'. It is not anticipated that the proposed greenway will negatively impact aquifers/groundwater as the greenway would be developed at grade with no land cutting involved.

7.8 Cultural Heritage

The proposed greenway will be located, predominantly in rural, agricultural or boglands. Greenways and walking routes, by their nature, are generally low-impact developments and the potential to adversely affect the cultural heritage landscape is considered generally low. The route of the proposed greenway development follows existing railway tracks for 61 km out of 73 km total and there will be limited groundworks in areas where existing tracks are being used.

However, there will also be 6 km of new greenway track construction, connecting existing railway section and local roads. These sections of the proposed route pass largely through milled bogs and adjoining countryside. Mechanical excavation of topsoil and peat layers to enable groundworks has the potential to uncover further sites of archaeological significance, however the proposed design is for geogrid to be placed directly on top of vegetation, and therefore, will not require excavation other than shallow excavations for placement of culverts.

The proposed low impact trail development is unlikely to impact on the setting of cultural heritage sites. Some sites may be more accessible following the development, such as the Canal bridges and Kilnacarrow bridge, as well as the industrial heritage of Lanesborough Power Station. The visual impact on any structures of architectural heritage significance is also deemed to be low. The thatched cottage at Cloontamore is located beside an existing road and the proposed route development does not pose a further risk to its setting.

It is believed the greenway would improve access to heritage and culture sites encouraging visitors locally and nationwide. The complete cultural heritage report is included in Appendix 4 of this report.

8 CUMULATIVE IMPACTS

In addition to determining the impact or potential impact of the proposed development on the receiving environment, it is necessary to consider the potential for cumulative impacts that would

accrue through the development of the proposed project along with other projects which are currently progressing through the planning process, or which have been granted planning permission. The following data sources were consulted for this exercise:

- Longford County Council Website
- An Bord Pleanála website
- Environmental Sensitivity Mapping (ESM) Map Tool
- Longford County Council Development Plan 2015-2021
- Roscommon County Council Development Plan 2014-2021
- Consultations with Longford County Council;

Through consultation of the above data sources, the Derryadd Windfarm, which is a 24 No. Turbine Windfarm development adjacent to route between Derraghan More and Ballynakill was of particular interest. The proposed extension to the Lough Ree Power Station ash disposal facility (ADF) located in Derraghan was also considered, however, ESB withdrew planning application (LCC Reg. Ref PL 19/38) in letter dated 11/7/19, accessed on the ESM webtool.

The proposed development at Derryadd Windfarm was accompanied by a full EIAR which was approved by An Bord Pleanala. The following extract is from the Derryadd Wind Farm EIAR:

> *'The proposed development has the potential to 'open up' the site for public use by allowing for walking/cycling routes through the site to connect to neighbouring villages and form part of the Royal Canal Greenway. Initial public consultations regarding this have proven positive with suggestions from members of the public to link the site with the Corlea Trackway Centre and Royal Canal. It is Bord na Móna Powergen's intention to continue to engage with the community to further gain ideas for potential amenity plans for the proposed development site. The proposed development will see over 30km of permanent roads put in place that will be used by the public for walking, cycling, running etc.'*
>
> *'The proposed development includes for the provision of amenity infrastructure in the form of cycle and walkways throughout the windfarm development site to connect with neighbouring villages and form part of the Royal Canal Greenway. On completion there will be approximately 30km of roads and amenity paths available for public use. Bord na Móna is committed to developing the area following the construction phase, similar to the Mountlucas Wind Farm development, for the benefit of the local communities. At the site there is potential for organised exercise activities such as a weekly Park Run or installing outdoor exercise equipment. This is a positive permanent direct effect for the area and local people.'*

It can be seen from the above extract, that the EIAR for Derryadd Windfarm has considered cycling/walking routes throughout the site to connect to surrounding habitats and the Royal Canal Greenway. It is therefore considered that there will be no negative cumulative impacts from this development. The proposed links to the Royal Canal Greenway and Corlea Trackway, as per the Longford County Development Plan, will result in a higher footfall due to increased ecotourism. However, it is anticipated that the increased footfall will result in less disturbance than current land-use (railway). It will bring about economic benefits and the improved infrastructure may encourage cycling/walking over driving.

In addition to the Derryadd Windfarm, as set out in the Introduction to this report, 23 km of the proposed 73 km greenway have been subject to successful Part 8 planning applications (Part 8 Planning References No. 49, 57, 62, 64, 67, 76, 79 and 81). The assessments set out in this report considered the potential impacts of the full 73 km route.

The likely cumulative effects of the developments along with the proposed transport network upgrades have been considered and it is anticipated there will be benefits for local population and tourist also. The proposed development is in accordance with local policy for Longford County.

9 PRELIMINARY EXAMINATION CONCLUSION

The proposed development does not fall into a category or exceed thresholds under the Planning Acts that trigger the mandatory requirement for an EIA, and therefore a statutory EIA is not required.

Having carried out the EIA screening assessment of the proposed development, and considering the type and scale of the proposed development and the nature of the receiving environment in addition to the nature, size and location of the proposed development, impacts on aspects such as biodiversity, land and soils, water, and heritage are not expected and can be ruled out.

The proposed greenway will incorporate existing decommissioned railway for the majority of the route, reducing land take and potential impact on the environment. Where new construction is required, best practice guidance will be followed, preventing vegetation removal and minimising disturbance to the receiving environment. It is anticipated that the construction will likely bring about a temporary increase in traffic and noise. However, this will be for a short period and will result in increased road safety, improved infrastructure and accessibility to local cultural heritage sites.

This report has discussed possible positive and negative impacts of the proposed development, however, it is not anticipated that any of these are likely to have a significant impact on the environment. It is also noted that the potential for impacts on nearby Natura sites have been assessed by means of an Appropriate Assessment Screening Report can be excluded and the proposed development is therefore not subject to Appropriate Assessment and the preparation of a Natura Impact Statement.

Accordingly, based on the aforesaid EIA screening set out in this report, it is concluded that there is not a real likelihood of significant effects on the environment arising from the proposed development and it is concluded that the proposed development of the Mid Shannon Wilderness Park Greenway Project would be unlikely to have such effects and accordingly the preparation of an Environmental Impact Assessment Report (EIAR) is not required.

10 REFERENCES

Circular Letter: PL 05/2018: Transposition into Planning Law of Directive 2014/52/EU amending Directive 2011/92/EU on the effects of certain public and private projects on the environment (the EIA Directive)

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Guidelines on the Information to be contained in Environmental Impact Assessment Reports, Draft, Environmental Protection Agency, August 2017.

Planning and Development Act 2000, as amended.

Planning and Development Regulations 2001, as amended.

Environmental Impact Assessment of Projects: Guidance on Screening, European Commission 2017

An Bord Pleanála Website Planning Searches. [Online]. Available at: http://www.pleanala.ie/.Accessed 14th October 2020

Longford County Council Planning Website (online) Available at: https://www.longfordcoco.ie/Services/Planning/ Accessed 14th October 2020

Environmental Sensitivity Mapping (ESM) Webtool (online) Accessed at: https://www.enviromap.ie/ Accessed 8th October 2020

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Roscommon County Council Development Plan 2014-2021 Accessed at; http://www.roscommoncoco.ie/en/Services/Planning/Roscommon-County-Council-Planning-Publications/Roscommon-County-Council-Planning-Publications/County_Development_Plan_2014_-_2020/County-Development-Plan-2014-2020/Water Framework Directive Water Maps Map Viewer (online) Accessed ahttp://www.wfdireland.ie/maps.html

Transport Infrastructure Ireland (2006) 'A Guide to Landscape Treatments for National Road Schemes'

Transport Infrastructure Ireland (2017) 'Rural Cycleway Design (Offline)'

EIA Screening Report

Appendix 1

Schedule 7 and 7a

APPENDIX 1 – SCHEDULE 7 AND SCHEDULE 7A (PLANNING AND DEVELOPMENT REGULATIONS 2001)

Information from the applicant for sub-threshold development for Schedule 7[4] is provided in tabular format in this section.

CHARACTERISTICS OF THE PROPOSED DEVELOPMENT	
Section 7 Requirement	**Response**
The size and design of the whole of the proposed development,	The Mid-Shannon Wilderness Park Greenway, is a proposed new greenway through the Bord na Móna bogs of central Longford. The aim of the project is to expand the greenway provision in County Longford and enhance its position within Ireland's Hidden Heartlands. The proposed route is approx. 73 m long and will encompass, for the most part (61 km), decommissioned industrial railway. The Greenway is to be routed through degraded bogland. The receiving habitat here is substantially cutover raised bog, a habitat of low sensitivity. The EIA process has influenced the design through use of existing rail corridor and local road network over the majority of the greenway length, using existing foundations which will have extremely limited potential to impact upon other habitat types. In sections out with the rail corridor/local road network, the greenway will be constructed at grade as a floating road meaning little excavation is required and vegetation can stay in place, minimising disturbance to receiving environment. The greenway will also use existing structures and crossing points.
Cumulation with other existing development and/or development the subject of a consent for proposed development for the purposes of section 172(1A)(*b*) of the Act and/or development the subject of any development consent for the purposes of the Environmental Impact Assessment Directive by or under any other enactment,	Derryadd Wind Farm – (Planning ref 303592) a 24 No. turbine wind farm. The windfarm would be located immediately adjacent to the central length of the greenway. Links to Royal canal to be constructed on the northern and southern end of the route and through central branch of the greenway, which may lead to increased use. The proposed links to the Royal Canal Greenway and Corlea Trackway will result in a higher footfall due to increased ecotourism. However, it is not anticipated that the increased footfall will be as much of a disturbance to the receiving environment as the existing land use as a railway. It will bring about economic benefits and the improved infrastructure may encourage cycling/walking over driving National road bypass (N63/N55) – no anticipated negative impacts
The nature of any associated demolition works,	No associated demolition proposed.

[4] *Sections 146B, 176B, 176C, 177D and 177K of the Act and articles 103, 109, 120, 123A, 132I, 289 and 299C*

	Rails and sleepers to be removed by Bord na Mona as per condition 10 of EPA IPC Licence 504.
The use of natural resources, in particular land, soil, water and biodiversity,	Compacted quarry dust will be utilised as a surface course for the majority of the greenway length.
The production of waste,	Bord Na Mona will remove sleepers and rails from decommissioned legacy railway. The ballast will remain to form the foundation of greenway. In sections out with the rail corridor/local road network, the greenway will be constructed at grade as a floating road meaning no excavation is required and vegetation can stay in place, minimising disturbance to receiving environment. The greenway will also use existing structures and crossing points.
Pollution and nuisances,	The EIA has influenced the design through use of existing rail corridor and local road network over the majority of the greenway length, using existing foundations which will have extremely limited potential to impact upon other habitat types. In sections out with the rail corridor/local road network, the greenway will be constructed at grade as a floating road meaning little excavation is required and vegetation can stay in place, minimising disturbance to receiving environment. The greenway will also use existing structures and crossing points. New pavement construction is proposed at both links to the royal canal greenway. Silt from construction of cycleway or vegetation stripping could enter runoff and possibly the royal canal, resulting in a negative impact on water quality. CEMP will be followed during Greenway construction adjacent to the Royal Canal and the River Shannon. Dust screens/silt traps to be implemented when undertaking improvement works on Kilnacarrow bridge to prevent dust emissions over Shannon. The same will also be applied at bridge crossing upgrade by Derrymacar Lough
The risk of major accidents, and/or disasters which are relevant to the project concerned, including those caused by climate change, in accordance with scientific knowledge, and	Best practices to be followed during construction of cycleway to minimise/eliminate risk of major accidents during the construction phase. Where cycleway is intersecting road, Transport Infrastructure Ireland guidance will be adhered to. Lighting to be provided at crossing with R392 and where cycleway will run adjacent to N63. Best Practice guidance to be followed during the construction phase. Risk assessments must be completed and adhered to in order to mitigate when working near deep water/live traffic. It is not anticipated that there is a significant risk of major accidents
The risks to human health (for example, due to water contamination or air pollution).	No significant risks to human health are expected. Construction will be in accordance best practice guidelines as discussed in Section 4.2.7. It is not anticipated that any hydrological pathways will be impacted by the development of the greenway. The greenway would benefit human health by creating jobs and employment.
LOCATION OF THE PROPOSED DEVELOPMENT	

Question: The environmental sensitivity of geographical areas likely to be affected by the proposed development, with particular regard to—	**Response**
the existing and approved land use,	Industrial railway planned for decommissioning mainly located within areas of cut over raised peat.
the relative abundance, availability, quality and regenerative capacity of natural resources (including soil, land, water and biodiversity) in the area and its underground,	Existing decommissioned railway ballast will be incorporated into the cycleway construction for the majority of the proposed greenway length. 24 km of cycle way will be constructed on Peat where there is not currently decommissioned industrial railway present. Best practice construction methods will be adhered to in these locations, such as use of geogrid/floated cycle track which avoids the need to strip existing vegetation and allows the foundations to remain saturated. It is not anticipated that the proposed greenway will negatively impact the relative abundance, availability, quality and regenerative capacity of natural resources (including soil, land, water and biodiversity).
the absorption capacity of the natural environment, paying particular attention to the following areas:	
(i) wetlands, riparian areas, river mouths;	Bogs – majority of proposed greenway runs through cut over raised peatlands however the greenway will incorporate existing decommissioned railway foundations and follow best construction practices to minimise disturbance. The majority of the greenway will be constructed using compacted unbound granular material allowing for quick infiltration into underlying peat. Riparian area – Best practice guidelines will be followed during Greenway construction adjacent to the River Shannon. Dust screens/silt traps to be implemented when undertaking improvement works on Kilnacarrow bridge to prevent dust emissions over Shannon. The same will also be applied at bridge crossing upgrade by Derrymacar Lough.
(ii) coastal zones and the marine environment,	N/A
(iii) mountain and forest areas;	N/A
(iv) nature reserves and parks;	The route will not pass through or within close proximity to any nature reserves or parks. However, the route will be in close proximity to a number of designated sites as detailed in the following section.
(v) areas classified or protected under legislation, including Natura 2000 areas designated pursuant to the Habitats Directive and the Birds Directive and;	The route does not enter any protected or designated site. There will be no landtake from any designated site. However, the route will be in close proximity to a number of designated areas. A total of 12 no. Natura 2000 sites are within 15km of the proposed scheme. At 0.57km, Lough Ree SAC and Lough Ree SPA are the closest of these. An Appropriate Assessment Screening considered that no significant impacts may be predicted upon these. A total of 20 pNHAs and 8 NHAs occur within 15km of the route. While the route will come within close

	proximity to some of these (e.g. Royal Canal pNHA, Derry Lough pNHA), no negative impacts may be predicted. Rather, long-term positive impacts may be expected through the operation of the Greenway
(vi) areas in which there has already been a failure to meet the environmental quality standards laid down in legislation of the European Union and relevant to the project, or in which it is considered that there is such a failure;	Document Annual Environmental Report 2019 Mountdillon Group of Bogs (IPC Licence P0504-01) discusses 3 complaints of dust in the area. The status of these complaints in the 2020 Annual environmental report was 'resolution status – complete'. 5 incidents of Trigger levels reached for ammonia and COD at emission sampling points. These exceedances were in inactive bogs and therefore deemed unrelated to site activities
(vii) densely populated areas;	The proposed greenway will travel through rural dwellings with small population.
(viii) landscapes and sites of historical, cultural or archaeological significance.	No visual intrusions anticipated greenway will be along existing decommissioned railway for most part and will use compacted unbound material for the majority of the length to optimise sensitivity to the surroundings. The proposed low impact trail development is unlikely to impact on the setting of cultural heritage sites. Some sites may be more accessible following the development, such as the Canal bridges and Kilnacarrow bridge, as well as the industrial heritage of Lanesborough Power Station. The visual impact on any structures of architectural heritage significance is also deemed to be low. The thatched cottage at Cloontamore is located beside an existing road and the proposed route development does not pose a further risk to its setting.
TYPES AND CHARACTERISTICS OF POTENTIAL IMPACTS	
Question: **The likely significant effects on the environment of proposed development in relation to criteria set out under paragraphs 1 and 2, with regard to the impact of the project on the factors specified in paragraph (*b*)(i)(I) to (V) of the definition of 'environmental impact assessment report' in section 171A of the Act, taking into account—**	**Response**
the magnitude and spatial extent of the impact (for example, geographical area and	Most of the 73km proposed greenway will utilise foundations from existing decommissioned railway. Positive impacts on local population as a result of increased accessibility for cyclists and pedestrians. Other greenways nationwide have also attracted users from outside the local area.

size of the population likely to be affected	It is anticipated that the greenway would have a positive impact on material assets in the area, improving local infrastructure. The design has considered current land use and has provided crossings, fencing & gates to accommodate existing agricultural practices, land uses, and infrastructure. Where the proposed greenway follows the alignment of lightly trafficked local roads or tracks, it is typically proposed that the road surface will be shared between vehicles and non-vehicular traffic. Where sharing the surface will result in long section of road where vehicles will have no opportunity to safely pass non-vehicular traffic, passing bays will be provided as per figure 5 above. It is likely that some field access/gateways will be upgraded to passing places benefiting landowners and road users. The provision of passing places should benefit those who access their land/properties from these local roads and increase safety for road users. Positive impact for local road users also with increased road safety.
the nature of the impact,	Population and Human Health – potential negative impact to local residents associated with construction, this impact will be short lived. Land/soils/water – potential to impact water quality, however this is not anticipated to be an issue if best practice is followed. No negative impacts anticipated for material assets/cultural heritage. Air/Climate – development has potential to impact air quality during construction phase, however this is not anticipated to be an issue if best practice guidelines are adhered to. Biodiversity - The receiving habitat here is substantially cutover raised bog, a habitat of low sensitivity. The route will follow existing railway route, using existing foundations and will have extremely limited potential to impact upon other habitat types. Condition 10 of the IPC (licence reg. 504) states: '*Following termination of use or involvement of all or part of the site in the licensed activity, the licensee shall decommission, render safe or remove for disposal/recovery, any soil, subsoils, buildings, plant or equipment, or any waste, materials or substances or other matter contained therein or thereon, that may result in environmental pollution'*. The condition also states that the agreed cutaway bog rehabilitation plan is implemented.
the transboundary nature of the impact,	No effects are anticipated. A branch from the greenway will enter County Roscommon at Kilnacarrow Bridge. The length of the branch entering Roscommon is circa 0.5km.
the intensity and complexity of the impact,	Population and human health – it is anticipated that any negative impacts (noise, construction traffic) will be minor and shortlived (construction phase). The positive impacts, improved infrastructure and accessibility for recreational use will continue for design life of greenway.
the probability of the impact,	An increase in traffic (noise) to the area is expected during construction phase, this impact will be short lived. Construction phase expected to produce dust, however, this will be minimised if best practice is

	followed. Dust screens should be utilised near/over waterbodies. Dust suppression should be undertaken in periods of dry weather.
the expected onset, duration, frequency and reversibility of the impact,	An increase in traffic (noise) to the area is highly likely during construction phase, this impact will be short lived.
the cumulation of the impact with the impact of other existing and/or development the subject of a consent for proposed development for the purposes of section 172(1A)(*b*) of the Act and/or development the subject of any development consent for the purposes of the Environmental Impact Assessment Directive by or under any other enactment, and	Derryadd Wind Farm – (Planning ref 303592) a 24 No. turbine wind farm. The windfarm would be located immediately adjacent to the central length of the greenway. Links to Royal canal to be constructed on the northern and southern end of the route and through central branch of the greenway, which may lead to increased use. The proposed links to the Royal Canal Greenway and Corlea Trackway will result in a higher footfall due to increased ecotourism. However, it is anticipated that the increased footfall will result in less disturbance than current land-use (railway). It will bring about economic benefits and the improved infrastructure may encourage cycling/walking rather than driving No negative significant impacts anticipated.
the possibility of effectively reducing the impact.	Dust produces through construction - minimised best practice is followed. Dust screens should be utilised near/over waterbodies. Dust suppression should be undertaken in periods of dry weather Noise from construction – follow best practice guidelines Waste production and impact on receiving environment reduced through use of existing rail corridor and local road network over the majority of the greenway length, using existing foundations which will have extremely limited potential to impact upon other habitat types. In sections out with the rail corridor/local road network, the greenway will be constructed at grade as a floating road meaning no excavation is required and vegetation can stay in place, minimising disturbance to receiving environment. The greenway will also use existing structures and crossing points.

EIA Screening Report

Appendix 2

Flood Risk Assessment

Mid-Shannon Wilderness Park Greenway Flood Risk Assessment

Document No: MSWP-RP-EN-0003-P04

DATE: 23/07/2021
Client: Longford County Council
Project: Mid-Shannon Wilderness Park Greenway

CLANDILLON CIVIL CONSULTING
Osprey Business Centre
Devoy Quarter
Naas
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ISSUE AND REVISION RECORD

Rev	Date	Originator	Checker	Approver	Description
P00	16/10/2020	Pietro Albano	**Heather Scully**	Seán FItzSimons	Draft for review
P01	11/02/2021	Pietro Albano	**Heather Scully**	Seán FItzSimons	First issue
P02	18/03/2021	Pietro Albano	**Heather Scully**	Seán FitzSimons	2nd Issue
P03	18/06/2021	Pietro Albano	**Heather Scully**	Seán FitzSimons	Updated for Revised Alignment
P03	23/07/2021	Pietro Albano	**Heather Scully**	Seán FitzSimons	Minor Amendments

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1 INTRODUCTION

Longford County Council (LCC) have appointed Clandillon Civil Consulting (CCC) to carry out the Preliminary Design and Environmental Evaluations for the route of the proposed Mid-Shannon Wilderness Park (MSWP) Greenway, a new greenway through the Bord na Móna bogs of central Longford.

The aim of the project is to expand the greenway provision in County Longford and to add to and link into the growing network of greenways in Ireland in accordance with the policies and objectives set out in Project Ireland 2040, the National Cycle Policy Framework, the Longford and Roscommon County Development plans and associated planning documents. The provision of the greenway is also central to the creation of the Mid Shannon Wilderness Park which is linked to the vision of Ireland's Hidden Heartlands The location of the scheme is illustrated in Figure 1.

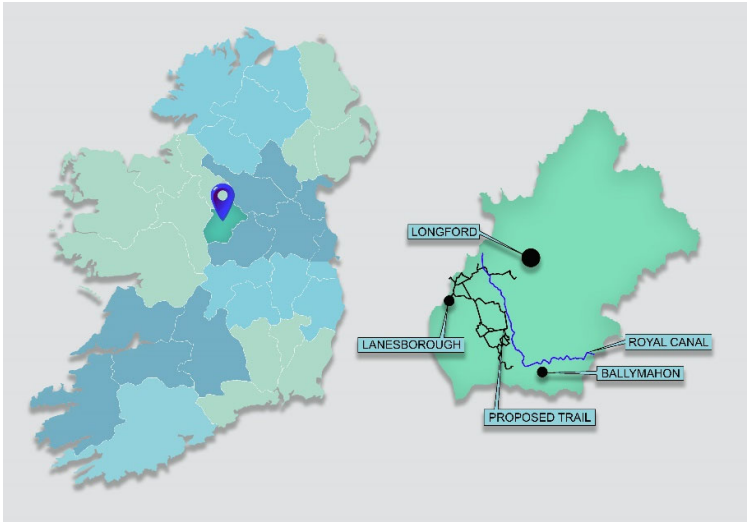


Figure 1: MSWP Greenway – Location Plan

A central tenet of the scheme is to make use of existing rail lines which were previously used by Bord na Móna as part of their peat harvesting operations which ceased in 2020. The use of these lines and the associated existing ballast and rail structures will significantly reduce the cost and potential environmental impact of the proposed scheme.

In its entirety, the scheme is approximately 73 km and consists of:

- 61 km of greenway along decommissioned Bord na Móna rail lines;
- 6 km of greenway along existing roads;
- 6 km of greenway through existing cutaway bog.

Of the 73 km, 23.4 km of the proposed greenway have been subject to successful Part 8 planning applications.1 Existing planning applications account for 3km of the 6km of the greenway which cross cutaway bog. While predominantly located in Co. Longford, the scheme also includes a crossing of the River Shannon over the existing Bord na Móna bridge at Kilnacarrow, which will be retrofitted as part of this scheme. This bridge lands in Co. Roscommon and a 360m section of greenway is proposed in Co. Roscommon to connect the bridge landing to the public road network.

This Flood Risk Assessment (FRA) was completed to inform an Environmental Impact Assessment (EIA) Screening Report being completed for the Project and was completed in accordance with "The Planning System and Flood Risk Management – Guidelines for Planning Authorities" DOEHLG 2009.

[1] Part 8 Planning References No. 49, 57, 62, 64, 67, 76, 79 and 81

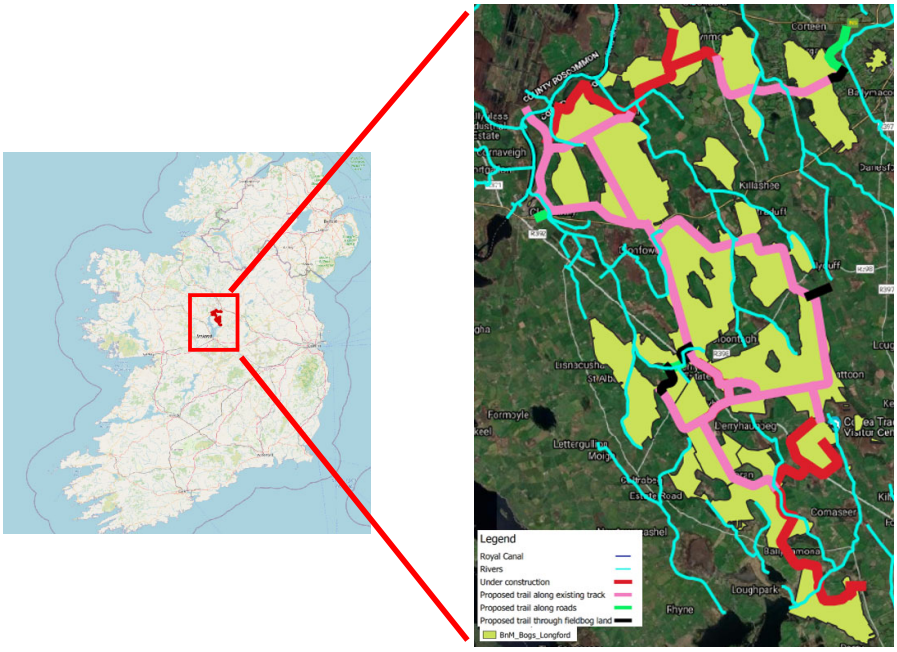
2 SITE DESCRIPTION

The proposed Mid-Shannon Wilderness Park Greenway is a Class 2 – Mixed Used, Cycle and Walking Trail (Classification and Grading for Recreational Trails ~ National Trails Office). The majority of the proposed route will be located on decommissioned industrial rail lines, previously used by Bord Na Móna as part of their bog development and extraction operations. Once the track decommissioning process has been completed, the rail alignment will provide a wide path with nominal inclines suitable for a Class 2 Greenway. As part of the Preliminary design, the original Greenway Alignment proposed by Longford County Council was assessed.

The route stretches for approximately 17km North to South and 11 km East to West. On the southern end of the scheme the closest town is Ballymahon, 6km from the greenway; on the northern end of the scheme Cloondara is located 1km from the route end; on the west and east the route reaches Lanesborough and Longford towns respectively.

The study area within the proposed route falls towards the River Shannon to the north and Lough Ree to the west and south. The existing ground levels are within 34m AOD and 50m AOD across the scheme with a relative high point in the Derryhaun-Killashee areas.

The extent of the proposed greenway and Bord na Móna sites are shown in Figure 2. The BnM rewetting project is essentially a means of achieving bog rehabilitation (gov.ie - Bord Na Móna Bog Rehabilitation Scheme (www.gov.ie)). The general plans include blocking of land drains and turning off of existing surface water pumps. Reprofiling of peat fields and bunding may also be implemented to achieve rewetting.



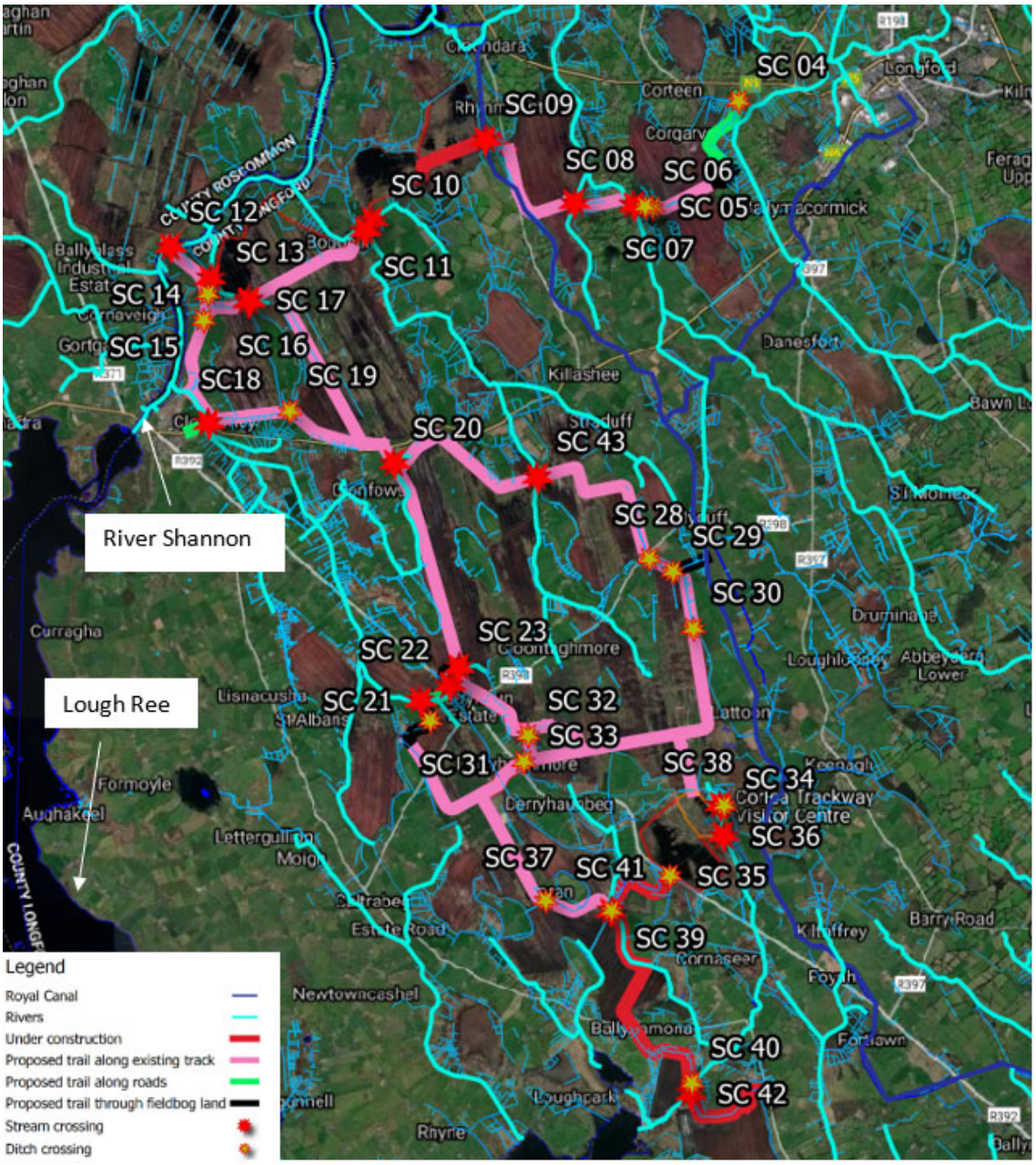


Figure 2 The Greenway route location

The most prominent hydrological features in the vicinity of the study area are the River Shannon, its tributaries, and Lough Ree. Figure 3 shows an overview of the watercourses in the study area as well as the subcatchment extents associated with the prominent watercourses. The red line indicates the greenway route within the hydrological catchments.

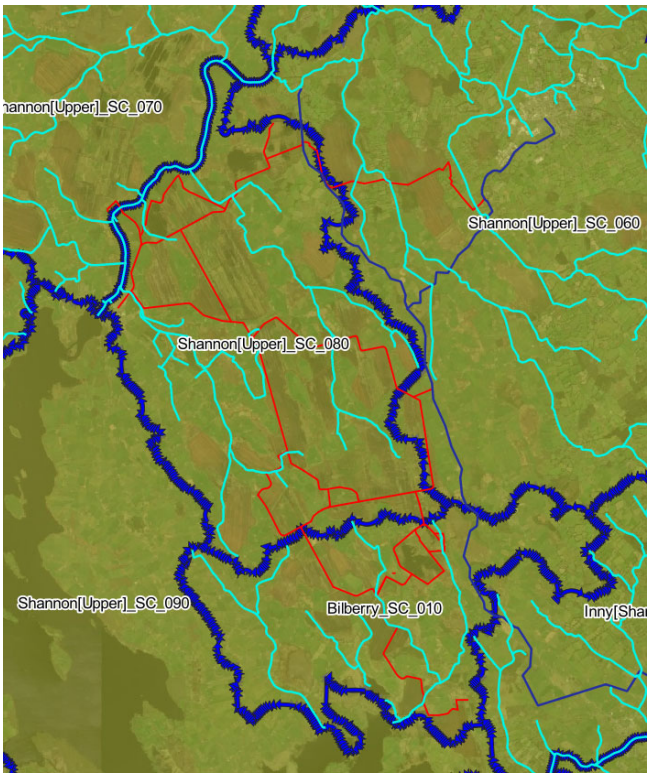


Figure 3 Hydrological Catchment areas (source: EPA)

As illustrated in Figure 4 below, there are a total of 39 stream, river or ditch crossings on the scheme. The 39 crossing comprise:

- A crossing of the River Shannon in Kilnacarrow (SC 13);
- 20 river/minor streams crossings.
- 1 crossings with the Royal Canal (SC 09); and
- 11 Ditch crossings

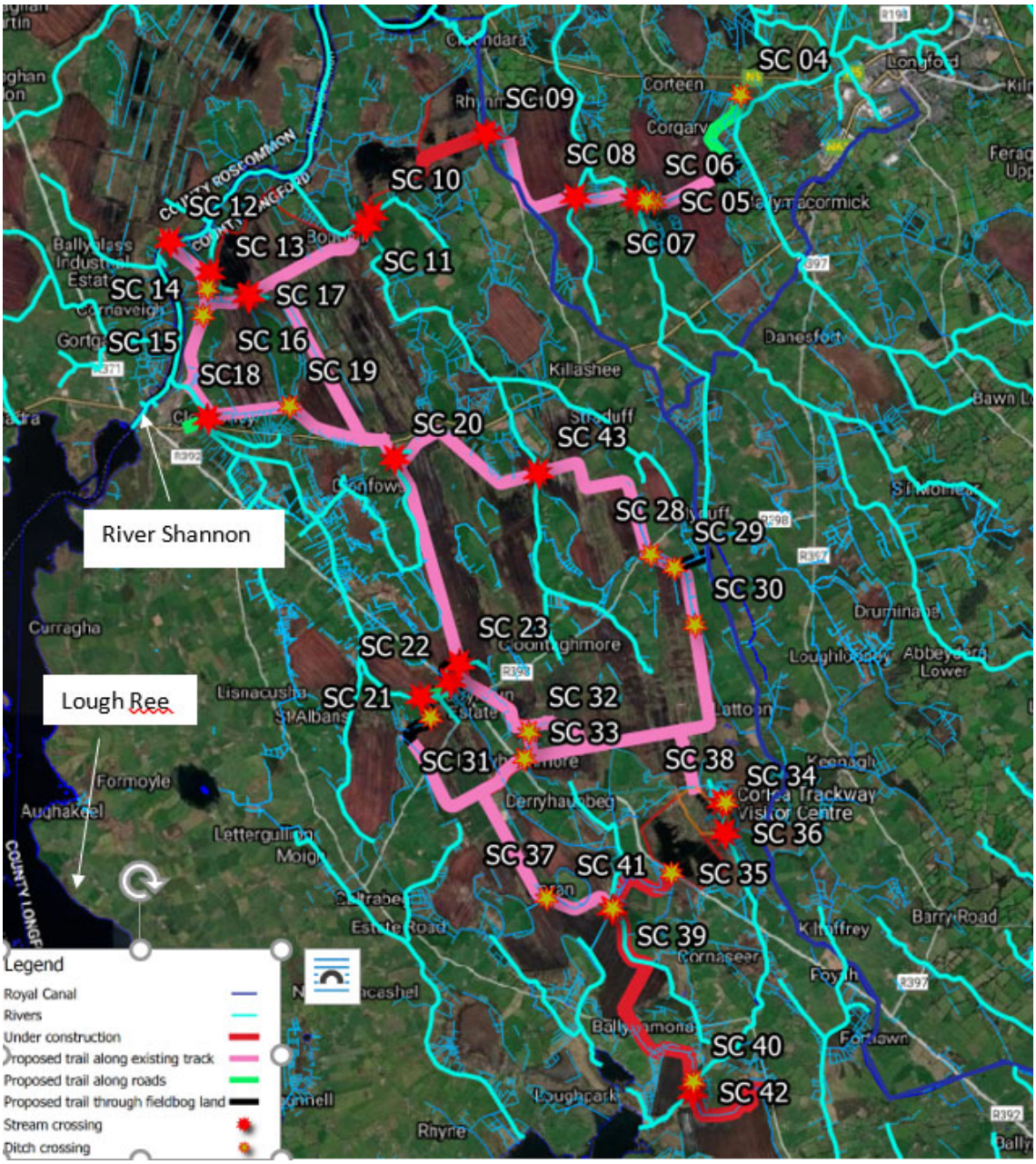


Figure 4 Local hydrology and stream crossing with the Greenway route locations.

As the route of the proposed greenway typically follows that of the pre-existing Bord na Móna industrial railway, existing structures are in place for each of the 18 rivers/streams, the River Shannon and Royal Canal structures. Details of the existing River/Stream crossings have been summarised in Table 1 below.

Table 1 Watercourse crossing characteristics.

Crossing Ref.	Stream Name	Design Proposals
SC 07	Fallan	Provide New Clear Span Structure. Detail Hydraulic assessment to be performed.
SC 08	Kilmore_lower	Utilise Existing Structure
SC 09	Royal Canal	Utilise Existing Structure
SC 10	Ballynakill tributary	Utilise Existing Structure
SC 11	Ballynakill	Utilise Existing Structure
SC 12	Shannon	Utilise Existing Structure
SC 13	Kilnacarrow	Utilise Existing Structure
SC 16	Kilnacarrow	Utilise Existing Structure
SC 17	Kilnacarrow	Utilise Existing Structure
SC 18	Lough Bannow stream	Utilise Existing Structure
SC 20	Rappareehill	Utilise Existing Structure
SC 21	Derrygeel	Utilise Existing Structure
SC 22	Derrygeel	Utilise Existing Structure
SC 23	Derrygeel	Utilise Existing Structure
SC 34	Ledwithstown	Utilise Existing Structure
SC 36	Ledwithstown	Utilise Existing Structure
SC 39	Bilberry	Utilise Existing Structure
SC 42	Bilberry	Utilise Existing Structure
SC 43	Ballynakill	Utilise Existing Structure

Where ditches are crossed by the proposed greenway, they will also typically use existing crossings. Ditch crossing culverts are outside the scope of Section 50 of the 1945 Arterial Drainage Act and do not require Section 50 consent. The minimum culvert diameter for ditches should be 450mm as smaller sizes are prone to blockage. It is envisaged that pipe culverts ranging from 450mm minimum to 1200mm in diameter will typically be sufficient to cater for any new ditch crossings.

3 PLANNING SYSTEM AND FLOOD RISK MANAGEMENT GUIDELINES (2009)

3.1 The Planning System and Food Risk Management Guidelines

In 2009, the Department of Environment, Heritage and Local Government in conjunction with the Office of Public Works published The Planning System and Flood Risk Management: Guidelines for Planning Authorities 'the guidelines'. The purpose of the guidelines is to ensure that flood risk is considered by all levels of government when preparing development plans and planning guidelines. They should also be used by developers when addressing flood risk in development proposals. The Guidelines should be implemented in conjunction with the relevant flooding and water quality EU Directives including the Water Framework Directive (River Basin Management Plans (RBMPs)) and the Floods Directive (Catchment Flood Risk Assessment and Management (CFRAM) Studies).

The core objectives of The Guidelines are to:

- Avoid inappropriate development in areas at risk of flooding,
- Avoid new developments increasing flood risk elsewhere, including that which may arise from surface water run-off,
- Ensure effective management of residual risks for development permitted in floodplains,
- Avoid unnecessary restriction of national, regional or local economic and social growth,
- Improve the understanding of flood risk among relevant stakeholders, and
- Ensure that the requirements of EU and national law in relation to the natural environment and nature conservation are complied with at all stages of flood risk management.

The Guidelines recommend that Flood Risk Assessment (FRA) be carried out to identify the risk of flooding to land, property and people. FRAs should be carried out at different scales by government organisations, local authorities and for proposed developments appropriate to the level of information required to implement the core objectives of the guidelines. The FRA scales outlined in the guidelines are Regional Flood Risk Appraisal (RFRA), Strategic Flood Risk Assessment (SFRA) and Site-Specific Flood Risk Assessment (SSFRA).

This section presents a brief summary of the guidelines, for more detail refer to the main document and the accompanying technical appendices at www.opw.ie.

3.1.1 Flood Risk Assessment Approach

The Guidelines recommend that Flood Risk Assessments (FRA) be carried out to identify the risk of flooding to land, property and people. FRAs should use the Source-Pathway-Receptor (S-P-R) Model to identify the sources of flooding, the flow paths of the floodwaters and the people and assets impacted by the flooding. Figure 5 shows the SPR model that should be adopted in FRAs.

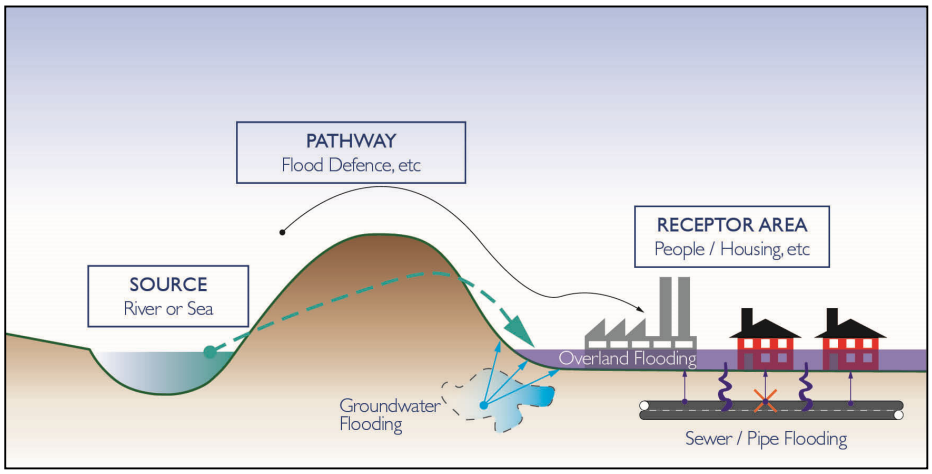


Figure 5 Flood Risk Assessment Source – Pathway – Receptor Model

FRAs should be carried out using the following staged approach:

- **Stage 1 Flood Risk Identification** – to identify whether there may be any flooding or surface water management issues related to either the area of regional planning guidelines, development plans and LAP's or a proposed development site that may warrant further investigation at the appropriate lower level plan or planning application levels,
- **Stage 2 Initial Flood Risk Assessment** – to confirm sources of flooding that may affect a plan area or proposed development site, to appraise the adequacy of existing information and to scope the extent of the risk of flooding which may involve preparing indicative flood zone maps. Where hydraulic models exist the potential impact of a development on flooding elsewhere and of the scope of possible mitigation measures can be assessed. In addition, the requirements of the detailed assessment should be scoped, and
- **Stage 3 Detailed Flood Risk Assessment** – to assess flood risk issues in sufficient detail and to provide a quantitative appraisal of potential flood risk to a proposed or existing development or land to be zoned, of its potential impact on flood risk elsewhere and of the effectiveness of any proposed mitigation measures.

3.1.2 Types of Flooding

There are two main sources of flooding: inland and coastal. Inland flooding is caused by prolonged and/or intense rainfall. This results in fluvial, pluvial or ground water flooding acting independently or in combination. Coastal flooding is not a concern for the study area as the watercourses within Longford County do not experience any tidal influence from the Irish Sea.

Fluvial flooding occurs when a river overtops its banks due to a blockage in the channel or the channel capacity is exceeded.

Pluvial flooding occurs when overland flow cannot infiltrate into the ground, when drainage systems exceed their capacity or are blocked and when the water cannot discharge due to a high-water level in the receiving watercourse.

Groundwater flooding occurs when the level of water stored in the ground rises as a result of prolonged rainfall to meet the ground surface and flows out over it.

3.1.3 Flood Risk

The guidelines state that flood risk is a combination of the likelihood of flooding and the potential consequences arising. Flood risk is expressed as:

Flood risk = Likelihood of flooding x Consequences of flooding and the potential consequences arising.

The guidelines define the likelihood of flooding as the percentage probability of a flood of a given magnitude occurring or being exceeded in any given year. A 1% probability indicates the severity of a flood that is expected to be exceeded on average once in 100 years, i.e. it has a 1 in 100 (1%) chance of occurring in any one year. Table 2 shows flood event probabilities used in flood risk management.

Table 2 Flood Event Probabilities

Annual Exceedance Probability (%)	Return Period (Years)
50	2
10	10
1	100
0.1	1000

The consequences of flooding depend on the hazards associated with the flooding (e.g. depth of water, speed of flow, rate of onset, duration, wave action effects, water quality), and the vulnerability of people, property and the environment potentially affected by a flood (e.g. the age profile of the population, the type of development, presence and reliability of mitigation measures etc.).

3.1.4 Flood Zones

The guidelines recommend identifying flood zones which show the extent of flooding for a range of flood event probabilities. The guidelines identify three levels of flood zones:

- **Flood Zone A** – where the probability of flooding from rivers and the sea is highest (greater than 1% or 1 in 100 for river flooding or 0.5% or 1 in 200 for coastal flooding),
- **Flood Zone B** – where the probability of flooding from rivers and the sea is moderate (between 0.1% or 1 in 1000 and 1% or 1 in 100 for river flooding and between 0.1% or 1 in 1000 year and 0.5% or 1 in 200 for coastal flooding), and
- **Flood Zone C** – where the probability of flooding from rivers and the sea is low (less than 0.1% or 1 in 1000 for both river and coastal flooding). Flood Zone C covers all areas of the plan which are not in zones A or B.

The flood zones are generated without the inclusion of climate change factors. The flood zones only account for fluvial and coastal flooding. They should not be used to suggest that any areas are free from flood risk as they do not account for potential flooding from pluvial and groundwater flooding.

Similarly flood defences should be ignored in determining flood zones as defended areas still carry a residual risk of flooding from overtopping, failure of the defences and deterioration due to lack of maintenance.

3.1.5 Climate Change

Climate change is expected to increase flood risk. It could lead to more frequent flooding and increase the depth and extent of flooding. Due to the uncertainty surrounding the potential effects of climate change a precautionary approach is recommended in the guidelines and summarised below:

- Recognise that significant changes in the flood extent may result from an increase in rainfall or tide events and accordingly adopt a cautious approach to zoning land in these potential transitional areas,
- Ensure that the levels of structures designed to protect against flooding, such as flood defences, land-raising or raised floor levels are sufficient to cope with the effects of climate change over the lifetime of the development they are designed to protect, and
- Ensure that structures to protect against flooding and the development protected are capable of adaptation to the effects of climate change when there is more certainty about the effects and still time for such adaptation to be effective.

4 STAGE 1 - FLOOD RISK IDENTIFICATION

The purpose of this section is to establish the level of flood risk for the proposed development site location and to collate and assess existing current and historical information and data which may indicate the level and/or extent of any flood risk. The following sections detail information and data collated as part of the Stage 1 Flood Risk Identification carried out for the study area.

4.1 Source-Pathway-Receptor Model

Initially, an identification and assessment of the probability, magnitude, response of pathways and consequences of a flood event in the proposed development site were appraised. This analysis was aimed at identifying potential high risk elements and is summarised in the table below.

Table 3 Possible Flooding Mechanisms within the surrounds of the proposed Greenway

Source	Pathway	Receptor	Likelihood (remote, possible, likely)	Consequences (low, medium, high)	Risk (low, medium, high)	Comment/ Reason
Tidal/ Coastal	Increased river levels overtopping existing riverbanks	Proposed Greenway	Remote	Medium	Low	The study area is 120 km from the sea and at an elevation of approximately 50 m above sea level.
Fluvial	Increased river levels overtopping riverbanks	Greenway route near River Shannon and other watercourses	Likely	High	High	Lands near to the River Shannon (particularly in Roscommon and near Kilnacarrow) have a history of flooding from the River Shannon and its tributaries.
Pluvial	Waterlogging	Proposed Greenway	Likely	High	High	The greenway route crosses a predominantly bog area underlain by relatively low permeability soils which has been developed for peat production.
Blockage	Increased river level overtopping existing riverbanks	Proposed Greenway	Likely	High	High	The greenway route crosses different streams with existing and proposed bridges/culverts

Ground water	Rising Ground Water Level	Proposed Greenway	Possible	High	Medium	The greenway route crosses a bog area. Areas of karst have been mapped in locations near the greenway route.

The primary source of flood risk to the site may be attributed to fluvial flooding from the Shannon River and its tributaries as well as pluvial flooding during periods of intense rainfall. Secondary risks may arise from blockage of stream crossing structures such as culverts and bridges.

4.2 Historical Flooding and Maps

4.2.1 OPW Flood Maps

The OPW Flood Hazard Mapping websites (www.floodmaps.ie and www.floodinfo.ie) were consulted to determine whether there was any evidence of previous flooding within the proposed Greenway route.

There are two sections of the proposed greenway route subject to a risk of fluvial flooding as shown in Figure 6 below. These are the sections adjacent to Kilncarrow and in the south of the scheme adjacent to the Ledwithstown river.

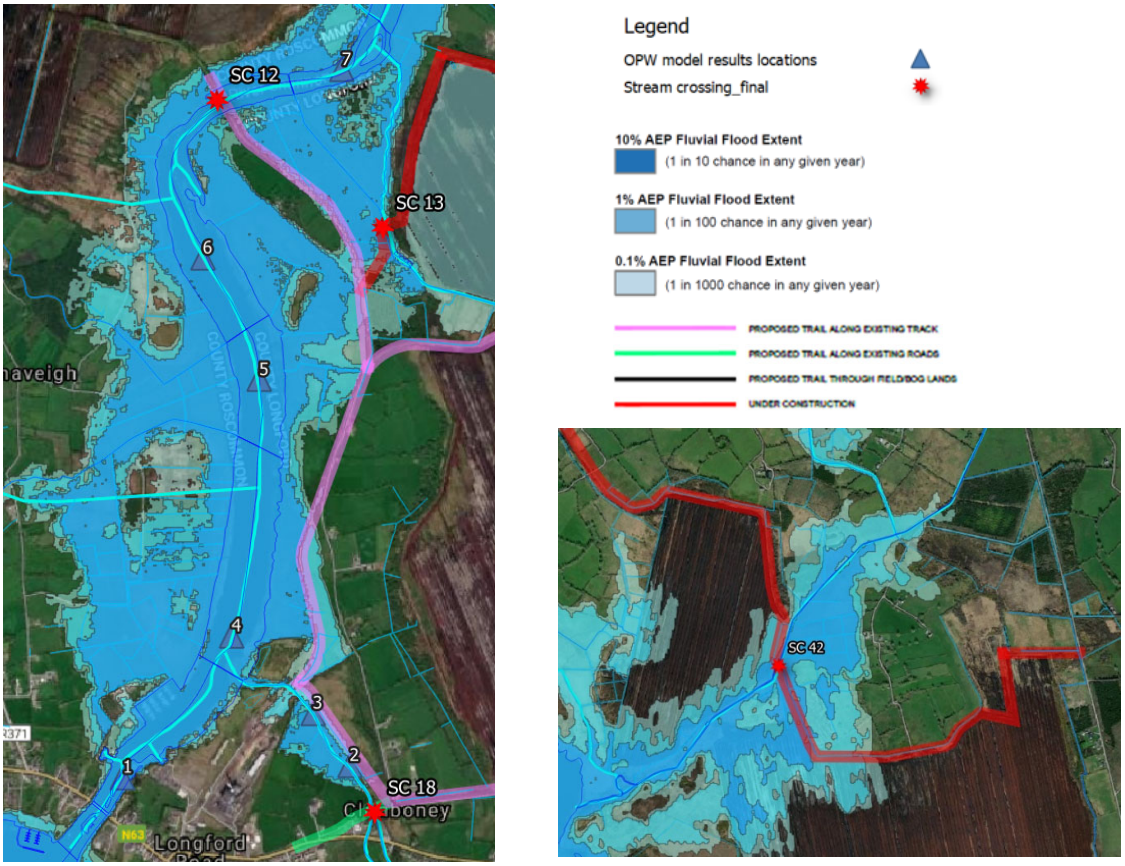


Figure 6 Greenway sections in red at fluvial Flood Risk. River Shannon section shown on the left and the Ledwithstown river on the right.

There were previous recorded flooding incidents in the vicinity of the proposed route, and these are depicted in the image below.

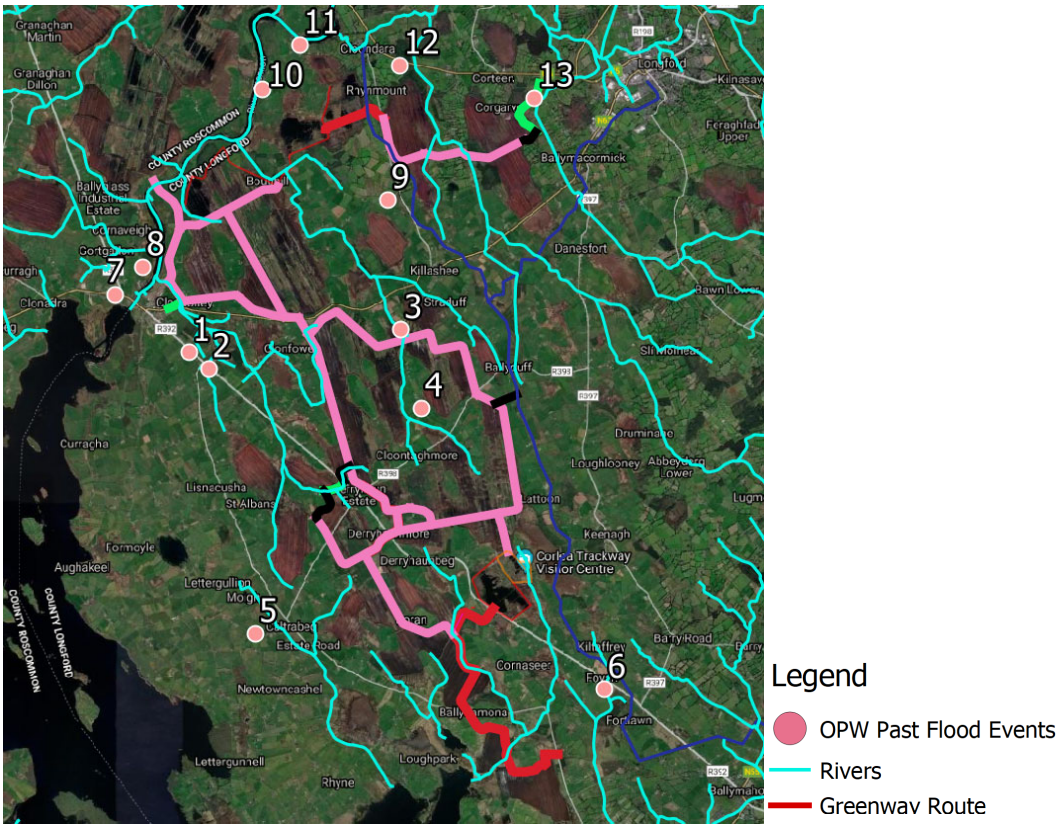


Figure 7 Past flood events in the vicinity of the study area

These recorded incidents are based on the reports of 2 no. meetings held within the relevant Local Authority to collate information on areas that are or were prone to flooding in Longford South and Strokestown Areas. Local Area Engineers generally provided the written records as they have a good understanding of local issues.

A description of the records referred to is presented below in Table 4.

Table 4 Past Flood Event Records Provided on the OPW-Floods Map Website.

ID	Document type, Title, Date	Description	Notes
1	Gorteengar, 07/12/2005	Minutes of meeting identifying areas subject to flooding - Longford South	LS24. Gorteengar – Low lying area floods after heavy rain every year. The road is liable to flood. Flood Id = 3512
2	Tullyvrane, 07/12/2005	Minutes of meeting identifying areas subject to flooding - Longford South	LS25. Tullyvrane – Low lying area floods after very heavy rain. Not every year. The road is liable to flood and properties are affected. Flood Id = 3513
3	Grillagh, 07/12/2005	Minutes of meeting identifying areas subject to flooding - Longford South	LS16. Grillagh – River overflows its banks every year after heavy rain. Road is liable to flood. Flood Id = 3504
4	Derryad, 07/12/2005	Minutes of meeting identifying areas subject to flooding - Longford South	LS17. Derryad– Low lying area floods after very heavy rain. Not every year. The road is liable to flood and properties are affected. Flood Id = 3505
5	Lightfield, 07/12/2005	Minutes of meeting identifying areas subject to flooding - Longford South	LS29. Lightfield– Low lying area floods after heavy rain every year. The road is liable to flood and a farmyard is affected. Flood Id = 3517

ID	Document type, Title, Date	Description	Notes
6	Foygh, 07/12/2005	Minutes of meeting identifying areas subject to flooding - Longford South	LS32. Foygh - River overflows its banks after heavy rain every year. Flood Id = 3520
7	Shannon Lanesborough Heights, 21/12/2004	Minutes of meeting identifying areas subject to flooding - Strokestown Area	12. Shannon Heights, Lanesborough – Land around the Shannon Heights development is liable to flooding. This could be due to the development and the existing drainage not able to cope with the runoff Flood Id = 89
8	Shannon Lanesborough recurring 21/12/2004	Minutes of meeting identifying areas subject to flooding - Strokestown Area	River Shannon North of Lanesborough – The river overflows its banks Flood Id = 88
9	Newtown (Longford), 07/12/2005	Minutes of meeting identifying areas subject to flooding - Longford South	LS15. Newtown – Low lying area floods after heavy rain every year. The road is liable to flood and a property is affected. Flood Id = 3503
10	Shannon Knappoge, 07/12/2005	Minutes of meeting identifying areas subject to flooding - Longford Longford South &&& Shannon 1954 Flood Extent map	Knappoge – River Shannon overflows its banks every year after heavy rain. Road is liable to flood. Flood Id = 3502
11	Shannon Cloondara, 07/12/2005	Minutes of meeting identifying areas subject to flooding - Longford South	LS13. Cloondara – River Shannon overflows its banks every year after heavy rain. Road is liable to flood. Flood Id = 3501
12	Fallan Fallan Bridge, 07/12/2005	Minutes of meeting identifying areas subject to flooding - Longford South	LS12. Fallan Bridge – River Fallan overflows its banks every year after heavy rain. Flood Id = 3500
13	Mullagh Bog, 07/12/2005	Minutes of meeting identifying areas subject to flooding - Longford South	LS18. Mullagh Bog – Tributary of River Camlin and tributaries overflows their banks every year after heavy rain. This is a significant flood plain. Road is liable to flood. Flood Id = 3506

4.2.2 OPW Preliminary Flood Risk Assessment (PFRA) Mapping

The Preliminary Flood Risk Assessment (PFRA) is a national screening exercise, based on available and readily derivable information, to identify areas where there may be a significant risk associated with flooding (AFAs). The PFRA is a requirement of the EU 'Floods' Directive which was transposed into Irish law by Statutory Instrument (SI) No. 122 of 2010. The SI sets out the responsibilities of the Office of Public Works (OPW) – The designated 'Competent Authority' for the 'Floods' Directive, and other public bodies in the implementation of the Directive.

The OPW has determined that it was appropriate for a predictive assessment to be undertaken for Ireland, given the lack of available information on past flood extents, and the broader need for flood maps with a national coverage.

An historic flood risk assessment determined that within the proposed Greenway route there are seven locations with a Historic Hazard Category of 2 (Table 5). The locations where these historical events occurred are presented in Table 6.

Table 5 Categorisation of Historic Hazard

Category	No. of Specific Past Floods (Dated / Undated)	No. of Locations of Reported Recurring Floods
4	10+	15+
3	5 – 9	10 – 14
2	2 – 4	5 – 9
1	1	1 – 4
0	0	0

Table 6 Locations within the Greenway route with Historical events

Location	No. of Past Floods
Longford & Environs	9
Cloonbony	2
Lanesborough	2
Aghamore	2
Forthill	2
Derrycolumb	2
Edera	2

Furthermore, a predictive flood risk assessment, with both being informed by the consultation process has been carried out and the locations within the Greenway route where the predictive Flood Risk Index is greater than 150 based on fluvial and coastal flooding are set out in Table 8. The Flood Risk Index is calculated based on the matrix set out in Table 7, integrating the probability of flooding and the vulnerability classification of the asset or activity potentially at risk.

Table 7 Matrix for determining the Flood Risk Index

Vulnerability Class	Vulnerability Class Factor	Probability of Flood Event (Annual Exceedance Probability)		
		10% - High	1% - Medium	0.1% - Low
Critical Vulnerability	2500	25000	2500	250
Extreme Vulnerability	250	2500	250	25
High Vulnerability	25	250	25	2.5
Moderate Vulnerability	2.5	25	2.5	0.25
Low Vulnerability	1	10	1	0.1

Table 8 Locations within the Greenway route where the predictive Flood Risk Index is greater than 150

Location	Flood Risk Index
Lanesborough	2654
Ballymahon	200
Longford	1743

The predictive analysis concluded that there are no locations within the study area with Groundwater or Pluvial Flood Risk.

The PFRA was completed and then put out to public consultation running from 31st August to 1st November 2011. The submissions made during the public consultation, and other information arising, have been taken into account to finalise the designation of the AFAs. The final AFAs within the study area are shown in Table 9 below.

Table 9 Final designation of areas for further assessment within the study area

ID	County	Name
260444	Longford	Lanesborough
260453	Longford	Ballymahon
260460	Longford	Longford
263472	Longford	Cloondara

4.2.3 Shannon CFRAM

The National CFRAM Program was initiated to implement some of the key recommendations of the Report of the Flood Policy Review Group. It was developed to prepare flood maps and flood risk management plans, focusing on areas where the risk is understood to be most significant. These areas of focus (the AFAs) are being identified through the Preliminary Flood Risk Assessment (PFRA). The CFRAM Studies were commissioned during 2011 and early 2012 and have produced detailed flood maps for the AFAs in 2013, in line with the EU 'Floods' Directive. The Studies produced also Flood Risk Management Plans in 2015 that set out a long-term strategy and defined and prioritised measures, to reduce and manage the flood risk.

4.2.3.1 Flood Risk Review

In the Flood Risk Review, the findings of the PFRA have been reviewed and a total of 108 community locations were considered as part of this Flood Risk Review process: this comprised of 57 Communities at Risk (CAR) and 51 Areas for Flood Risk Review (AFRR). A total of eight Individual Risk Receptors (IRRs) plus an additional potential IRR (identified as an AFRR as an addition to the scope) have also been considered. The community locations and the IRRs were identified by the OPW based on a national Preliminary Flood Risk Assessment (PFRA) which included an assessment of historic data and consultation with Local Authorities.

A final total of 66 locations were recommended for designation as APSRs, and five receptors recommended for designation as IRRs. In the proposed greenway study area there are 4 APSRs and 1 IRR as described in Table 10 below:

Table 10 Summary of recommended location status from the Flood Risk Review in the study area

ID	County	Name	Notes
CAR 2	Longford	Abbeyshrule	10km from proposed Greenway route. Not considered
AFRR 45	Longford	Ballymahon	6km from proposed Greenway route. Not considered
AFRR 47	Longford	Cloondara	1km from proposed Greenway route. There is significant flood risk from both the Shannon and Camlin Rivers, in particular to the recent development and WWTW downstream of the main road bridge through the village.
CAR 27	Longford	Edgeworthstown	14km from the Greenway route. Not considered
CAR 40	Longford	Longford	3 km from the greenway route. There are records of 12 flood events on floodmaps.ie for Longford including events in 1954 and 2005.
IRR 4	Longford	Lanesborough Power Station	The Greenway route crosses this location. The River Shannon in this locality has a long history of flooding. The PFRA mapping predicts a significant flood risk to Lanesborough Power Station and the surrounding road / infrastructure network. Lanesborough Power Station is confirmed as having sufficiently significant flood risk to warrant designation as an IRR following this desk based assessment.

An additional map, shown in Figure 8, outlines the Flood Risk for the IRR4 Lanesborough Power station. It can be seen that the proposed trail along the existing BnM railway is crossing the 10% AEP Flood Extents.

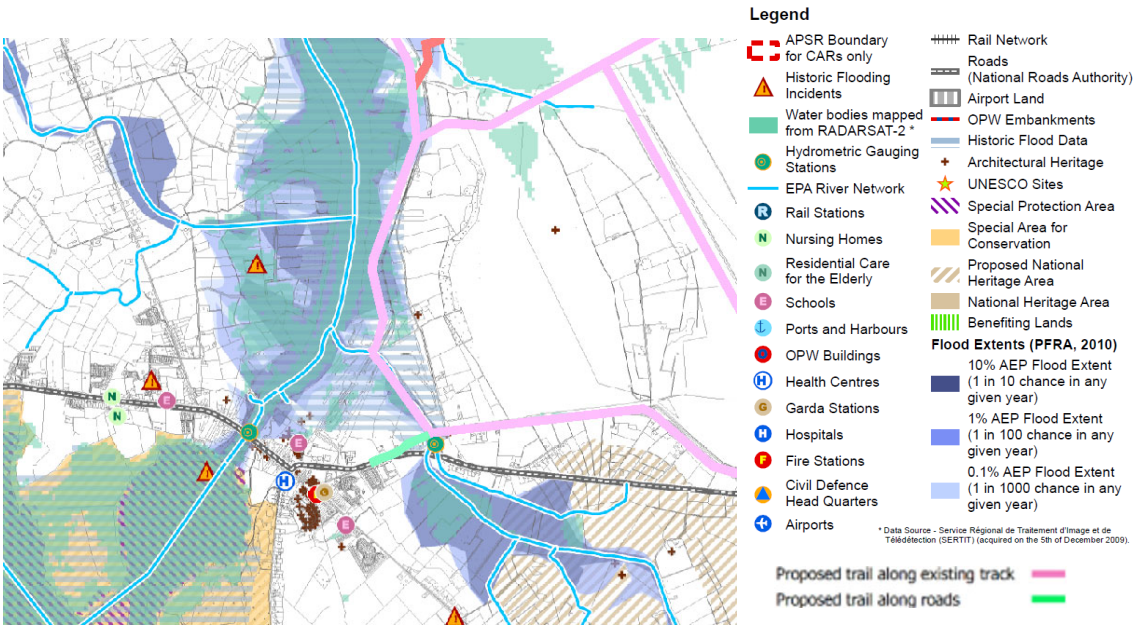


Figure 8 Shannon CFRAM Study Flood Risk Review Map - IRR4

4.2.3.2 Flood Risk Management Plan for the Shannon Upper & Lower River Basin (UOM25-26)

The purpose of the Plan is to set out the strategy, including a set of measures, for the cost-effective and sustainable, long-term management of flood risk in the Shannon Upper and Lower River Basin, including the areas where the flood risk has been determined as being potentially significant. A list of the conclusions given in the plan for the AFAs identified in the study area is given in Table 11 below.

Table 11 FRMP conclusions for the AFAs identified in the study area.

ID	County	Name	FRMP Conclusions
AFRR 47	Longford	Cloondara	As there is no fluvial flood risk to any properties within Cloondara in the 1% AEP flood event, there is no measure proposed for Cloondara.
CAR 40	Longford	Longford	Potentially viable flood relief works for Longford that may be implemented after project-level assessment and planning or Exhibition and confirmation might include: • Construct a 30m new flood defence wall. • Remove the existing footbridge on the Camlin River upstream of the N63 Bridge (not related to the new Greenway route)
IRR 4	Longford	Lanesborough Power Station	There are no measures proposed for Lanesborough Power Station.

4.2.3.3 Shannon CFRAM Maps

The Shannon CFRAM maps are showed in Figure 9 below. These were accessed from the Floodinfo.ie website. Plans for Lanesborough and the Kilnacarrow Bord na Móna Bridge are missing. The proposed trail at the Lanesborough Power station area crosses the 10% AEP Flood extents.

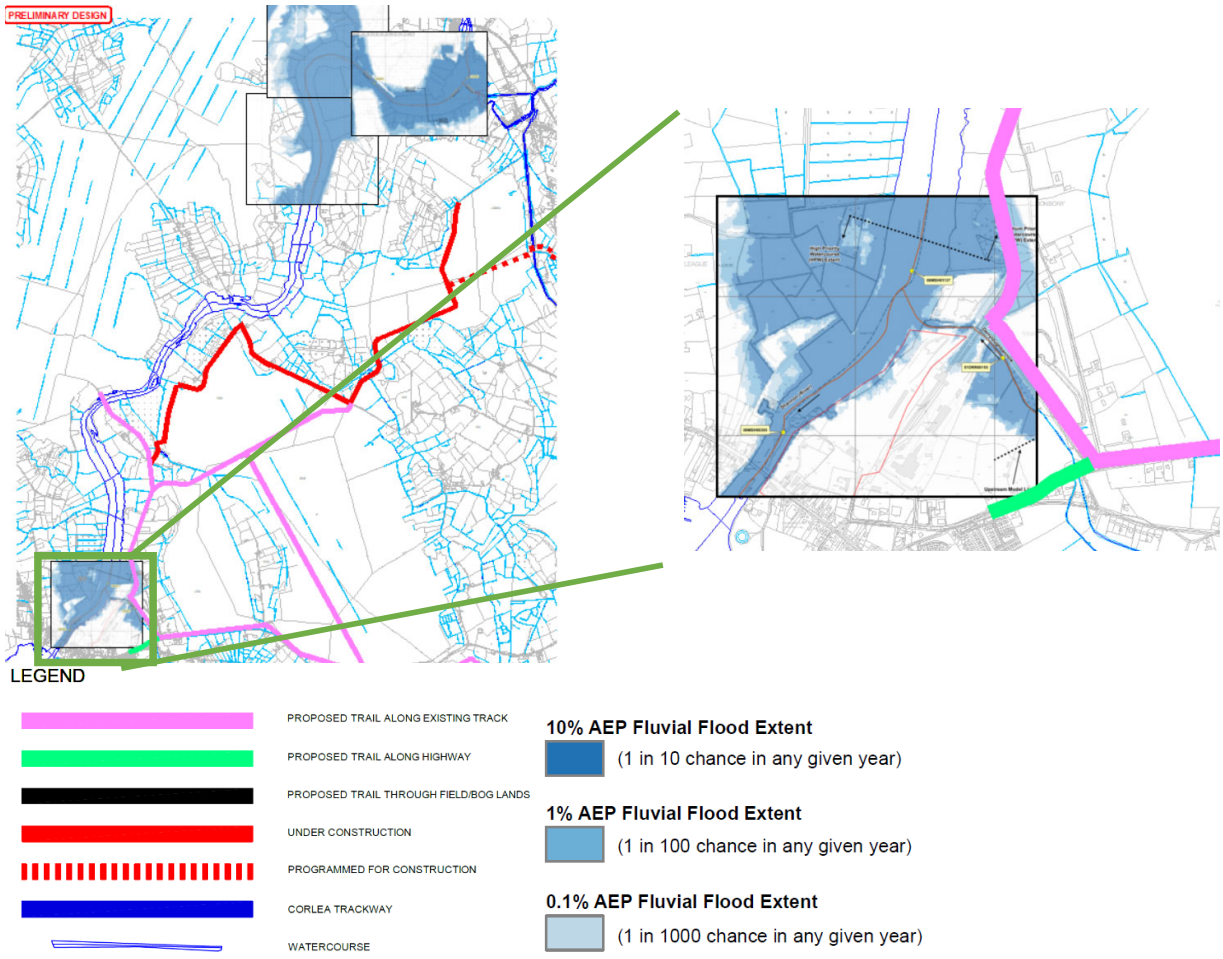


Figure 9 Shannon CFRAM Flood Maps for the study area.

4.2.4 Other (6" maps, Bord na Móna info etc)

Other flood information was gathered from historic 6" and 25" mapping as well as following a meeting with Bord na Móna. In Figure 10 below it is possible to see the extents of the historical flood plains: the Greenway route section considered to be at greatest risk of flooding is the proposed trail section along the Shannon River on the existing Bord na Móna industrial railway line.

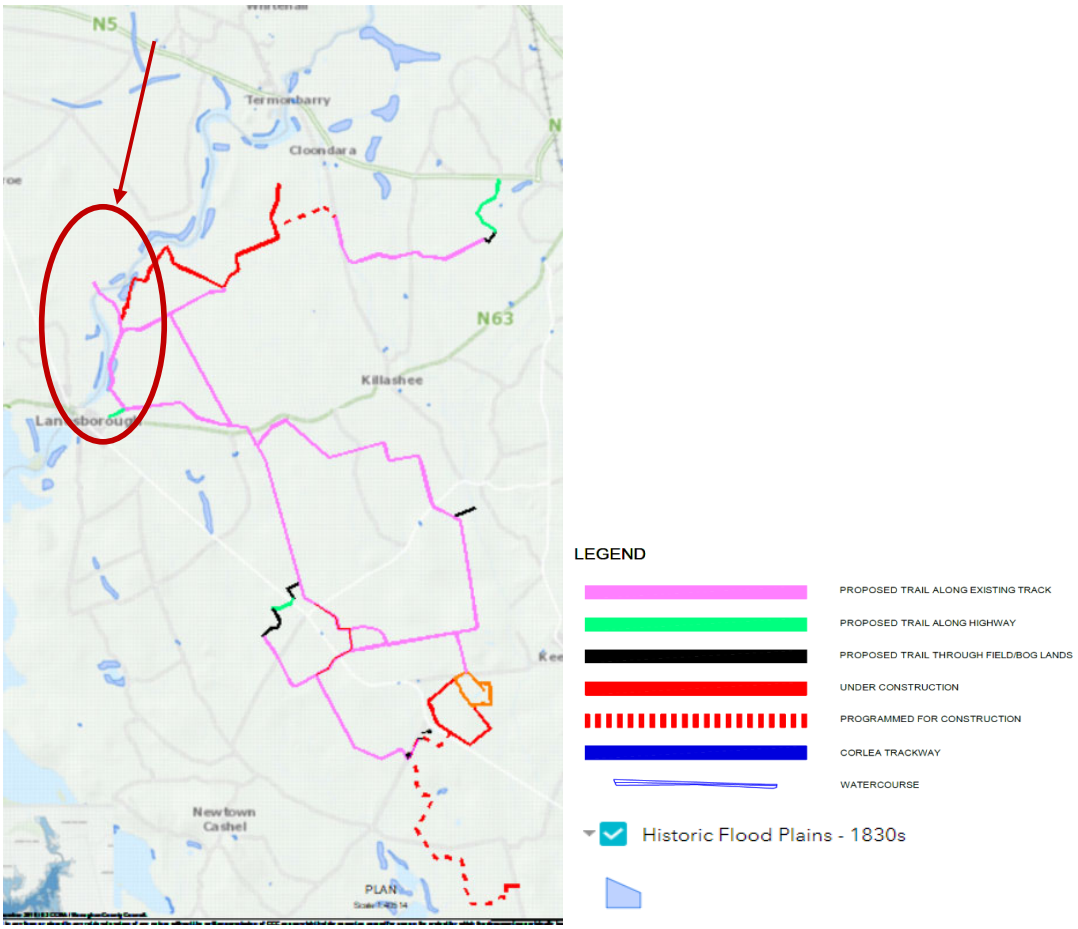


Figure 10 Historic Flood Plains 1830 (www.osi.ie National Townland and Historical Map Viewer)

On the 12th October 2020 a meeting with Bord na Móna was held: no detailed flood level or extents information was given during the meeting but 2 no. OPW flooding datasets were made available to the authors of this Flood Risk Assessment Report. These are the flood extents of the River Shannon during the 30 November 2009 flood event (Figure 11) and the 28 December 2015 (Figure 12) events. The first event in 2009 was more intense and caused flooding across the Greenway route particularly in two areas highlighted in the images below: at the north of Lanesborough along the Shannon River and within the Bord na Móna boglands as well as at the southern end of the scheme along the Ledwithstown watercourse.

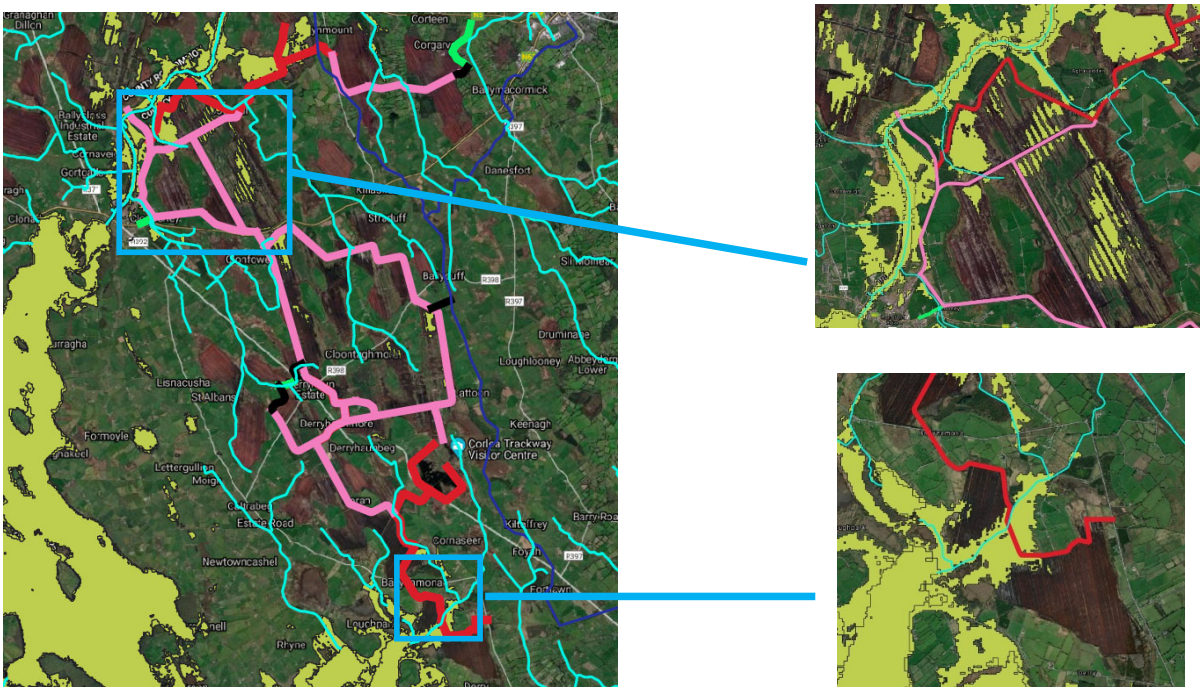


Figure 11 River Shannon flood extents during the event of the 30 November 2009

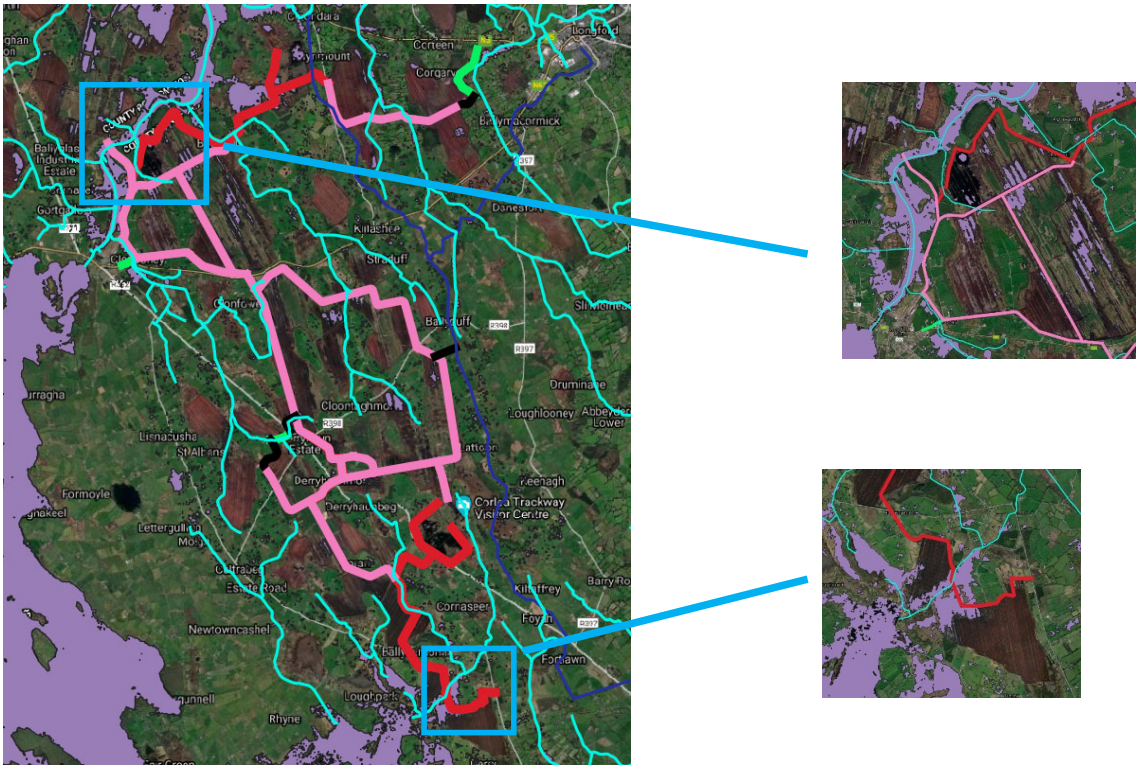


Figure 12 River Shannon flood extents during the event of the 28 December 2015

Bord na Móna outlined general plans for the boglands rewetting project which include blocking of land drains and turning off of existing surface water pumps. At this point, the extent of this work has

not been determined and will be tailored depending on preliminary results. Reprofiling of peat fields and bunding may also be implemented to achieve rewetting.

Regarding the historical flooding within the footprint and surrounds of the greenway route, consultation have been held with current/previous staff members who have many years' experience within the Mount Dillon bogland complex. Their local knowledge and experience would indicate that the majority of the route along the rail line would not be prone to flooding. There are areas close to the River Shannon (near the Kilnacarrow Bridge crossing) on both sides which would flood and this is shown on the OPW flood mapping. There are particular issues with flooding on the Roscommon side of the Shannon. It was also mentioned that Edera Bog would be prone to flooding (Bilberry River) and some areas around Knappogue (but not affecting the rail line route). Bord na Móna also referred to the proposed parallel tracks across an area near Corlea trackway. Recent satellite imagery clearly shows that the central track is in an area inundated with water (Figure 13). They recommended that the track section be omitted or moved given the rewetting operations underway at this location. The route has been amended to account for this.

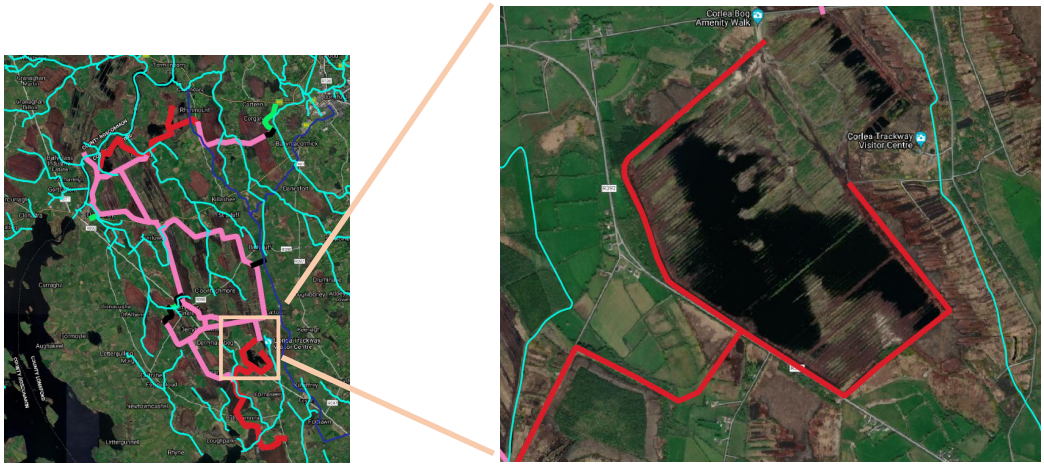


Figure 13 Corlea Greenway section crossing inundated areas.

4.3 Conclusion of Stage 1

The records outlined in the preceding sections indicated that the surroundings of the Greenway route are at risk of flooding from fluvial and pluvial source. Therefore, the FRA was progressed to Stage 2 – Initial Flood Risk Assessment.

5 STAGE 2 – INITIAL FLOOD RISK ASSESSMENT

The purpose of the Initial FRA was to appraise the availability and adequacy of the identified flood risk information, to qualitatively appraise the flood risk posed to the site and potential impacts on flood risk elsewhere and recommend possible mitigation measures to reduce the risk to acceptable level.

The potential source of flood risk identified at Stage I were:

- Fluvial – High Risk
- Blockage from culverts/bridges – High Risk
- Pluvial (overland flow) and Groundwater – High Risk (pluvial) and Medium Risk (groundwater)

In consideration of the above assessment, the primary flood risk to the study area was attributed to fluvial flooding which may be accentuated by blockage from downstream culverts. Other sources of flooding were surface water and groundwater.

5.1 Initial Fluvial Flood Risk Assessment

The high-risk source of flooding to the proposed Greenway Route was attributed to fluvial flooding from the River Shannon, as well as its tributaries both on the southern side of the study area and nearby Lanesborough power station.

The predicted flood maps commissioned by the OPW show that the Greenway route within the Lanesborough Power station and Kilnacarrow BnM Bridge encroaches on Flood Zones A, B and C. The OPW datasets of the Shannon River Flood events of 2009 and 2015 also indicate that area is subject to flooding as well as the southern side of scheme due to proximity of the Ledwithstown river. For the latter, without a back analysis, it is not possible to relate the flood extents to a particular Flood Zone.

5.2 Initial Pluvial and Groundwater Flood Risk Assessment

Pluvial flooding relates to flooding as a direct result of extreme rainfall. Pluvial flooding can occur during an extreme rainfall event. If the rate at which water falls on the ground is faster than the rate at which the water can make its way to the drainage network or percolate into the ground, then flooding will occur. This type of flood is referred to as “ponding”. Generally, in order for a site to be considered at risk of flooding from overland flow, it characteristically has steep gradients either within or above the site and a reasonably large contributing catchment area. However, developed bogs are generally susceptible to pluvial ponding during rainfall events, particularly where peat extraction has resulted in forming a topographically depressed area. During high rainfall events, the flat gradient of the drainage network will provide storage capacity and attenuation and will slow the discharge from the bog. In this case, the site and the surrounding lands are low lying and flat, therefore the risk of flooding from a pluvial source is considered moderate.

Regarding Groundwater Flood Risk, the OPW PFRA carried out a national scale Groundwater Flooding Report which concludes that ground water flooding is largely confined to the West Coast of Ireland due to the hydrogeology of the area. The GSI online mapping viewer shows locations outside the project footprint where karst features have been identified including swallow holes and turloughs. In addition, much of the aquifer is classified as Regionally Important Karstified Aquifer. Groundwater flooding is not considered to be a significant risk for this site, especially considering the lack of reported historical flooding within the site footprint.

5.3 Conclusion of Stage 2 FRA

The proposed development site was identified to have a high fluvial flood risk and hence a further assessment of the implications to the site and surrounding areas was necessary. The Greenway route will not amend the existing flood pathways and adverse impact are not expected on the flooding mechanism. Therefore, the FRA was progressed to a Justification test.

6 JUSTIFICATION TEST

6.1 Criteria for Justification Test

Development should be avoided in areas at risk of flooding, where this is not possible, a land use that is less vulnerable to flooding should be considered. If the proposed land use cannot be avoided or substituted a Justification Test must be applied and appropriate sustainable flood risk management proposals should be incorporated into the development proposal. Figure 814 shows the sequential approach principles in flood risk management. Table 1212 and 13 outline recommendations from the Guidelines for the types of development that would be appropriate to each flood zone and those that would be required to meet the Justification Test.

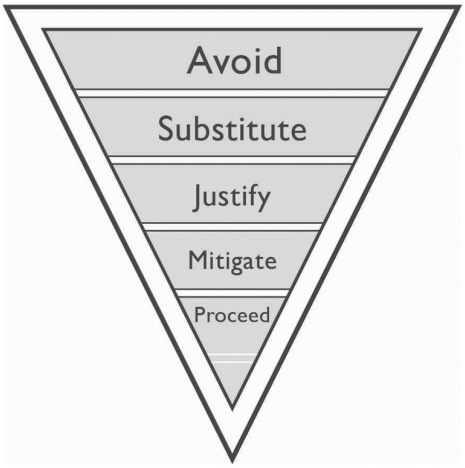


Figure 14 Sequential approach principles in Flood Risk Management

Table 12 Matrix of vulnerability versus flood zone to illustrate appropriate development and that required to meet the Justification Test

	Flood Zone A	Flood Zone B	Flood Zone C
Highly vulnerable development	Justification Test	Justification Test	Appropriate
Less vulnerable development	Justification Test	Appropriate	Appropriate
Water compatible development	Appropriate	Appropriate	Appropriate

The Justification Test is used to assess the appropriateness of developments in flood risk areas. The test is comprised of two processes. The first is the Plan-making Justification Test and is used at the plan preparation and adoption stage where it is intended to zone or otherwise designate land which is at moderate or high risk of flooding. The second is the Development Management Justification Test and is used at the planning application stage where it is intended to develop land at moderate or high risk of flooding for uses or development vulnerable to flooding that would generally be inappropriate for that land.

Table 13 Classification of vulnerability of different types of development

Vulnerability Class	Land uses and types of development which include*:
Highly vulnerable development (including essential infrastructure)	• Garda, ambulance and fire stations and command centres required to be operational during flooding, • Hospitals, • Emergency access and egress points, • Schools, • Dwelling houses, student halls of residence and hostels, • Residential institutions such as residential care homes, children's homes and social services homes, • Caravans and mobile home parks,

	• Dwelling houses designed, constructed or adapted for the elderly or, other people with impaired mobility, and • Essential infrastructure, such as primary transport and utilities distribution, including electricity generating power stations and sub-stations, water and sewage treatment, and potential significant sources of pollution (SEVESO sites, IPPC sites, etc.) in the event of flooding.
Less vulnerable development	• Buildings used for: retail, leisure, warehousing, commercial, industrial and non-residential institutions, • Land and buildings used for holiday or short-let caravans and camping, subject to specific warning and evacuation plans, • Land and buildings used for agriculture and forestry • Waste treatment (except landfill and hazardous waste), • Mineral working and processing, and • Local transport infrastructure.
Water-compatible development	• Flood control infrastructure, • Docks, marinas and wharves, • Navigation facilities, • Ship building, repairing and dismantling, dockside fish processing and refrigeration and compatible activities requiring a waterside location, • Water-based recreation and tourism (excluding sleeping accommodation), • Lifeguard and coastguard stations, • *Amenity open space, outdoor sports and recreation and essential facilities such as changing rooms,* and • Essential ancillary sleeping or residential accommodation for staff required by uses in this category (subject to a specific warning and evacuation plan).
***Uses not listed here should be considered on their own merit**	

6.2 Vulnerability Classification Chosen

The proposed Project is a leisure/open space amenity which can be considered to fit in the 'water-compatible development' vulnerability class as set out in the Guidelines (see Table 13 above).

6.3 Justification Test

The requirement for a Justification Test for the proposed development site was reviewed in accordance with the OPW guidelines "*The Planning System and Flood Risk Management – Guidelines for Planning Authorities*" (see extract Box 5.1 below which forms the basis of the Justification Test for development management)

Box 5.1 Justification Test for development management (to be submitted by the applicant)

When considering proposals for development, which may be vulnerable to flooding, and that would generally be inappropriate as set out in Table 3.2, the following criteria must be satisfied:

1. The subject lands have been zoned or otherwise designated for the particular use or form of development in an operative development plan, which has been adopted or varied taking account of these Guidelines.
2. The proposal has been subject to an appropriate flood risk assessment that demonstrates:
   - (i) The development proposed will not increase flood risk elsewhere and, if practicable, will reduce overall flood risk;
   - (ii) The development proposal includes measures to minimise flood risk to people, property, the economy and the environment as far as reasonably possible;
   - (iii) The development proposed includes measures to ensure that residual risks to the area and/or development can be managed to an acceptable level as regards the adequacy of existing flood protection measures or the design, implementation and funding of any future flood risk management measures and provisions for emergency services access; and
   - (iv) The development proposed addresses the above in a manner that is also compatible with the achievement of wider planning objectives in relation to development of good urban design and vibrant and active streetscapes.

The acceptability or otherwise of levels of residual risk should be made with consideration of the type and foreseen use of the development and the local development context.

Figure 15 Justification Test Criteria

The Justification Test which is referred to as part of the Sequential Approach is an assessment of whether a development proposal within an area at risk of flooding meets specific criteria for proper planning and sustainable development and demonstrates that it will not be subject to unacceptable risk nor increase flood risk elsewhere. The justification test should be applied only where development is within flood risk areas that would be defined as inappropriate under the screening test of the sequential risk based approach outlined above.

Although parts of the proposed greenway route has been determined to be vulnerable to flooding, the type of development (water-compatible development) is considered appropriate. As a 'water compatible development' it is considered an appropriate development type for lands which lie within delineated Flood Risk Zones A, B or C and therefore the proposed development does not require to be subjected to a Justification Test.

	Flood Zone A	Flood Zone B	Flood Zone C
Water compatible development	Appropriate	Appropriate	Appropriate

Therefore, in accordance with the Guidelines a Justification test is not required and the development type is appropriate.

7 CONCLUSION AND RECOMMENDATIONS

The results of this Flood Risk Assessment indicated that parts of the proposed Greenway route are subjected to Fluvial and Pluvial Flood risk. The Project Team has reviewed all the available datasets relating to flood risk for the proposed development and has concluded that the predominant source of flood risk to the development is fluvial flooding from the Shannon River and pluvial flooding from intense rainfall events.

In particular, the Greenway section within Lanesborough and the Kilnacarrow Bord na Móna Bridge encroaches on Flood Zone A, B and C as well as the track section nearby the Ledwithstown river. Flooding occurred in these locations as shown by the OPW datasets of the 2009 and 2015 Shannon River Flood events.

A Justification test was not required since the development is considered to be 'water compatible' and therefore appropriate for all Flood Zone classes A, B and C. However, the risk of flooding will need to be appropriately signed in these areas so that users are aware of this risk.

In the next project phases the design of the Greenway and stream crossing structures is to take into consideration the most up to date standards for drainage design.

The Contractor will be required to prepare an Emergency Plan for managing flood risk during construction, which may include monitoring of weather conditions through consultation with Met Éireann and Longford County Council. The Contractor is to ensure measures are in place to reduce any potential inundation due to flooding during the works.