

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

Information from the applicant for sub-threshold development for Schedule 7⁴ 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,	<p>The Mid-Shannon Wilderness Park Greenway is a proposed new greenway through the Bord na Móna bogs. The aim of the project is to expand the greenway provision in County Roscommon and Longford.</p> <p>The Roscommon element of this project, to which this Part VIII process relates, consists of the repurposing of an existing disused rail bridge crossing at Cloontuskert in County Roscommon to Kilnacarrow in County Longford (Subject to a separate Part VIII process in Longford County Council). A 89m section of greenway, facilitating pedestrians and cyclists, will be constructed in Cloontuskert along existing disused Bord na Mona industrial rail lines to facilitate future access on the western bank of the River Shannon.</p>
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,	<p>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.</p> <p>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</p>
The nature of any associated demolition works,	<p>No associated demolition proposed.</p> <p>Rails and sleepers to be removed by Bord na Mona as per condition 10 of EPA IPC Licence 504.</p>
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

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

	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,	<p>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.</p> <p>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.</p> <p>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</p>
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	<p>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.</p> <p>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</p>
The risks to human health (for example, due to water contamination or air pollution).	<p>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.</p> <p>The greenway would benefit human health by creating jobs and employment.</p>
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;	<p>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.</p> <p>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.</p>
(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	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'.

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;	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.	<p>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.</p> <p>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-Ballyleague 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.</p>

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 size of the population likely to be affected	<p>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.</p> <p>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</p>

	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,	<p>Population and Human Health – potential negative impact to local residents associated with construction, this impact will be short lived.</p> <p>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.</p> <p>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.</p> <p>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: <i>‘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’</i>. The condition also states that the agreed cutaway bog rehabilitation plan is implemented.</p>
the transboundary nature of the impact,	No effects are anticipated. The branch from the greenway entering County Roscommon at Kilnacarrow Bridge is less than 0.5km. The development is primarily located within County Longford and has been assessed at length in this report.
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.

<p>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</p>	<p>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.</p> <p>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</p> <p>No negative significant impacts anticipated.</p>
<p>the possibility of effectively reducing the impact.</p>	<p>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</p> <p>Noise from construction – follow best practice guidelines</p> <p>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.</p>

APPENDIX 2 – FLOOD RISK ASSESSMENT (FRA)

Mid-Shannon Wilderness Park Greenway Flood Risk Assessment

Document No: MSWP-RP-EN-0003-P05



DATE: 25/08/2021

Client: Roscommon County Council

Project: Mid-Shannon Wilderness Park Greenway



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1 INTRODUCTION

This Flood Risk Assessment has been prepared to inform a Part VIII statutory consent process for the Mid- Shannon Wilderness Park Greenway, a proposed new greenway crossing the River Shannon north of Lanesborough-Ballyleague at Cloontuskert in County Roscommon. The Roscommon element of this project, to which this Part VIII process relates, consists of the repurposing of an existing disused rail bridge crossing at Cloontuskert in County Roscommon to Kilnacarrow in County Longford (Subject to a separate Part VIII process in Longford County Council). A 89m section of greenway, facilitating pedestrians and cyclists, will be constructed in Cloontuskert along existing disused Bord na Mona industrial rail lines to facilitate future access on the western bank of the River Shannon.

In the interests of clarity and to ensure that potential cumulative impacts are addressed, the assessment, addressing the Longford Project elements (which are the subject of a separate Part VIII process in County Longford) in addition to the Roscommon proposals, have been included as part of this report.

The aim of the project is to expand greenway provision in Counties Roscommon and 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.

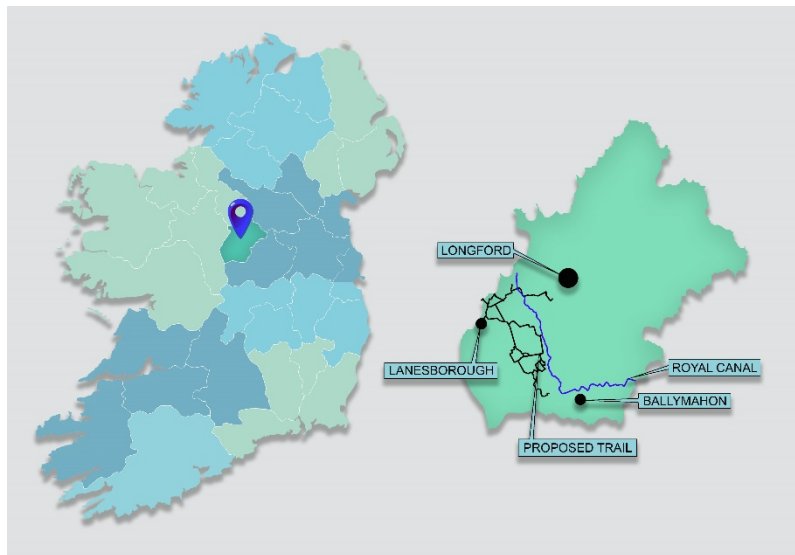


Figure 1: MSWP Greenway – Location Plan

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.

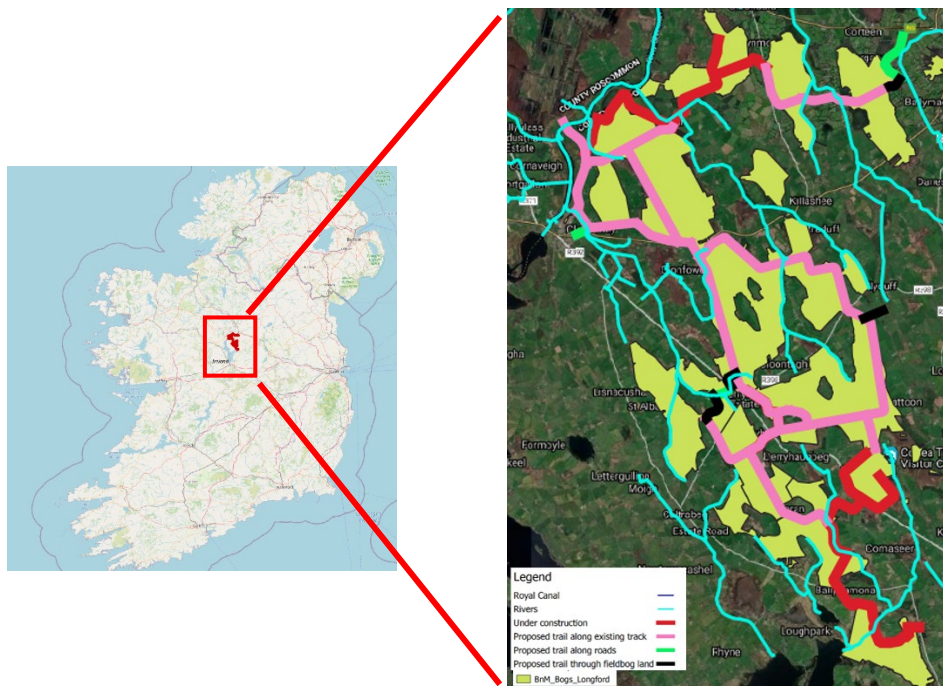
2 SITE DESCRIPTION

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-Ballyleague 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](http://www.gov.ie) (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.



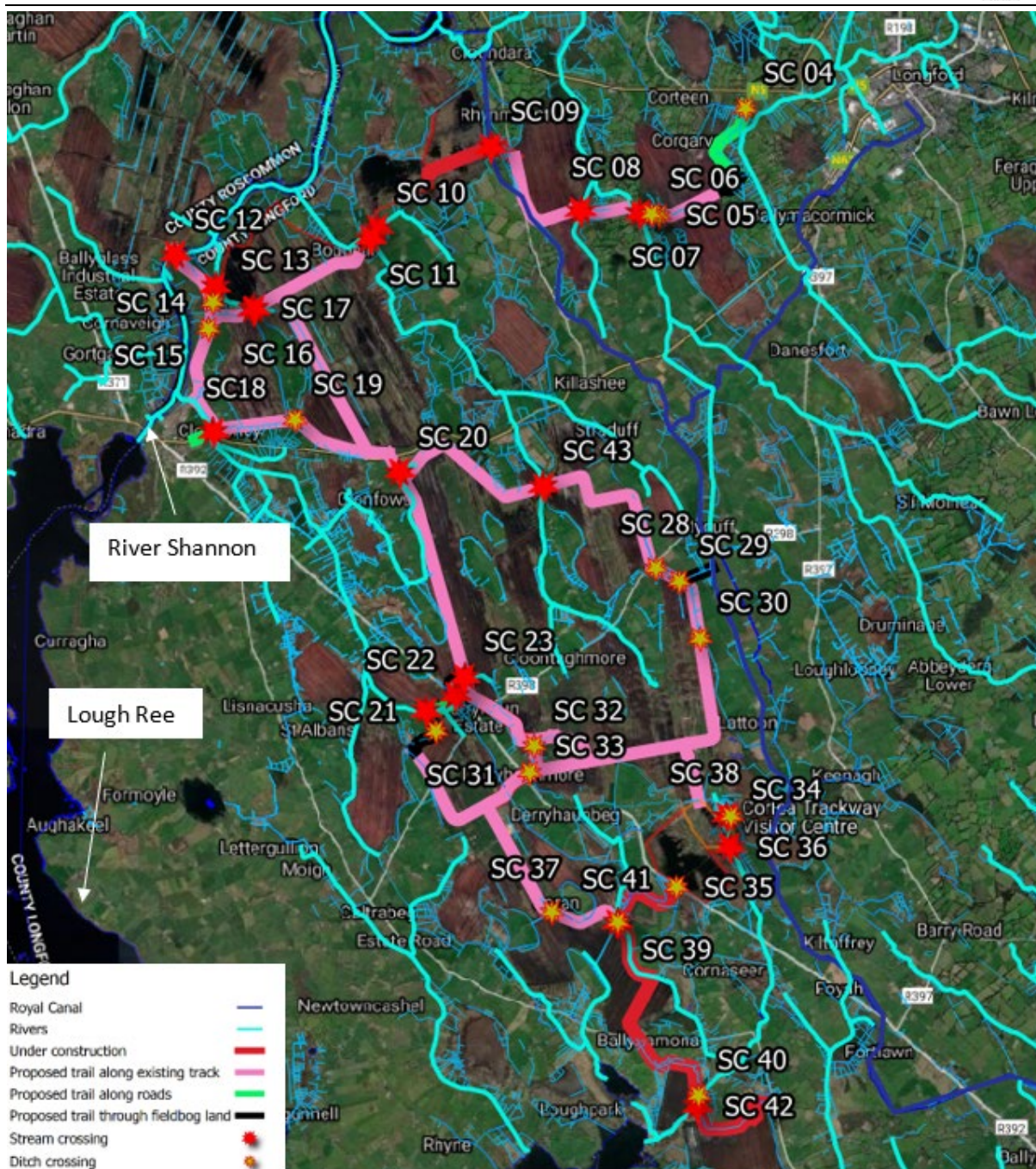


Figure 2 The Greenway route location

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.

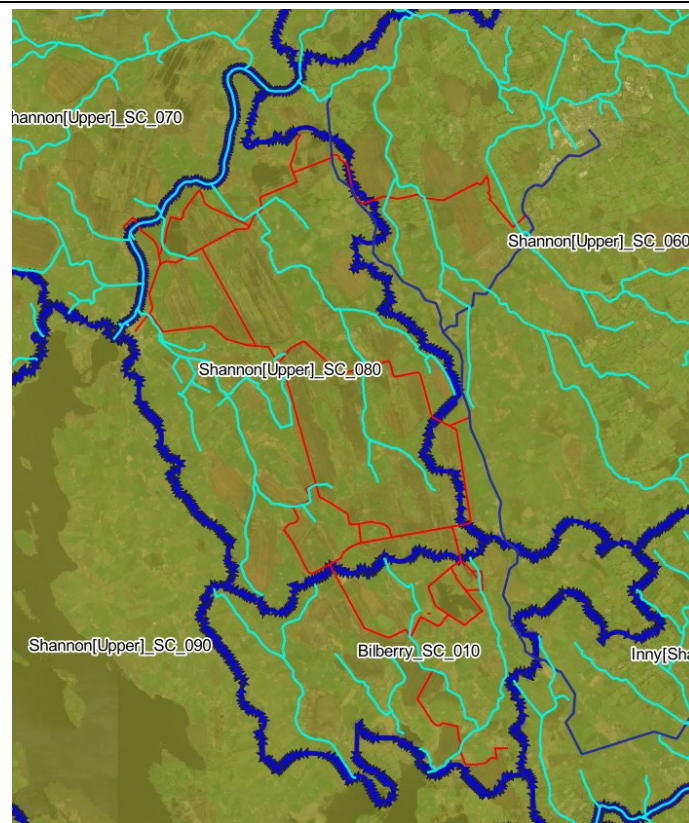


Figure 3 Hydrological Catchment areas (source: EPA)

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

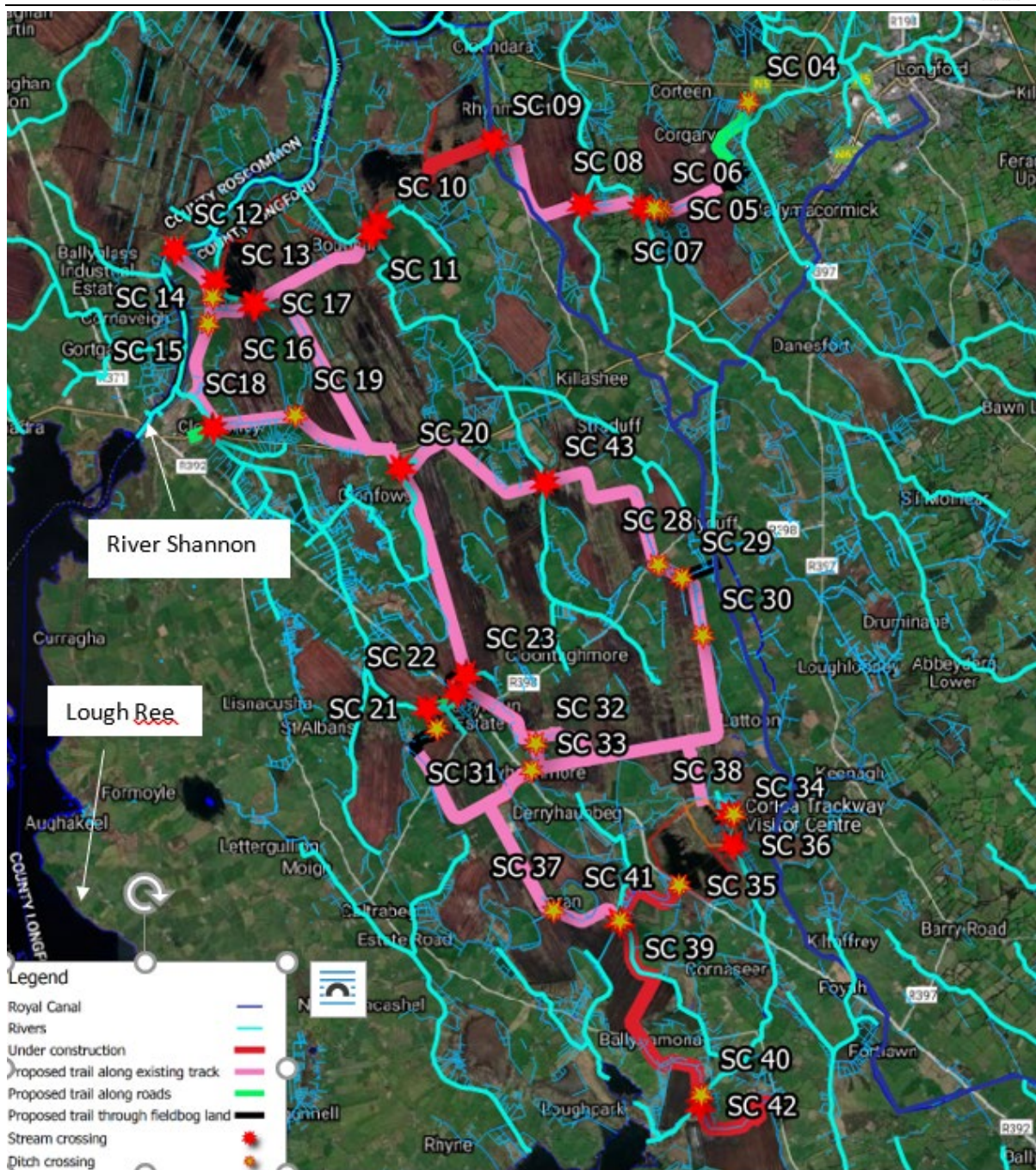


Figure 4 Local hydrology and stream crossing with the Greenway route locations.

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.

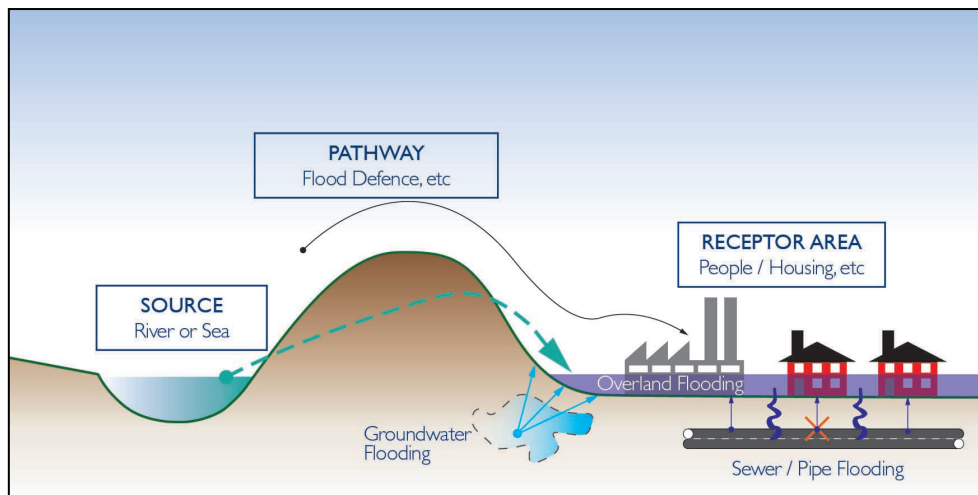


Figure 5 Flood Risk Assessment Source – Pathway – Receptor Model

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 the study area 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:

$$\text{Flood risk} = \text{Likelihood of flooding} \times \text{Consequences of flooding and the potential consequences arising.}$$

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.
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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.

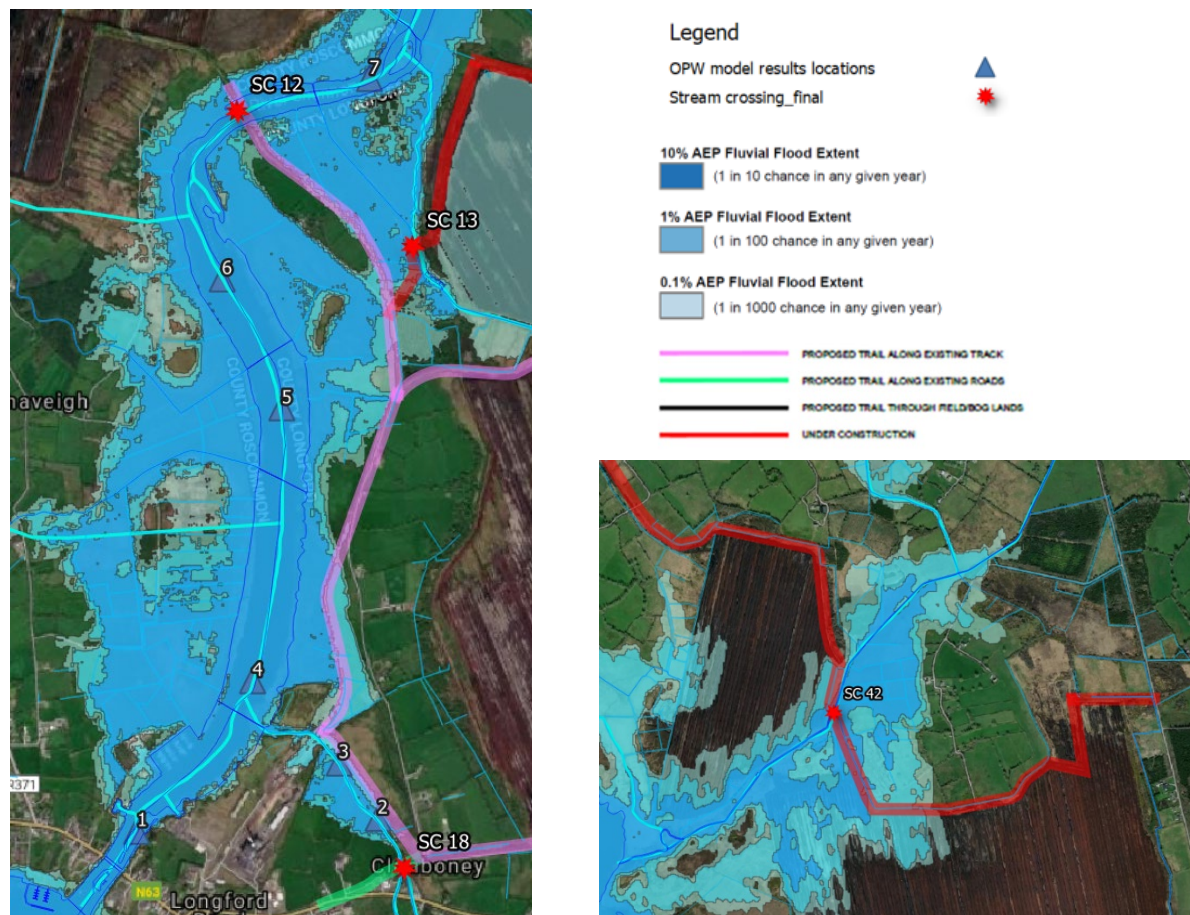


Figure 6 Greenway sections in red at fluvial Flood Risk. River Shannon section shown on the left and the Ledwithstown river on the right.

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

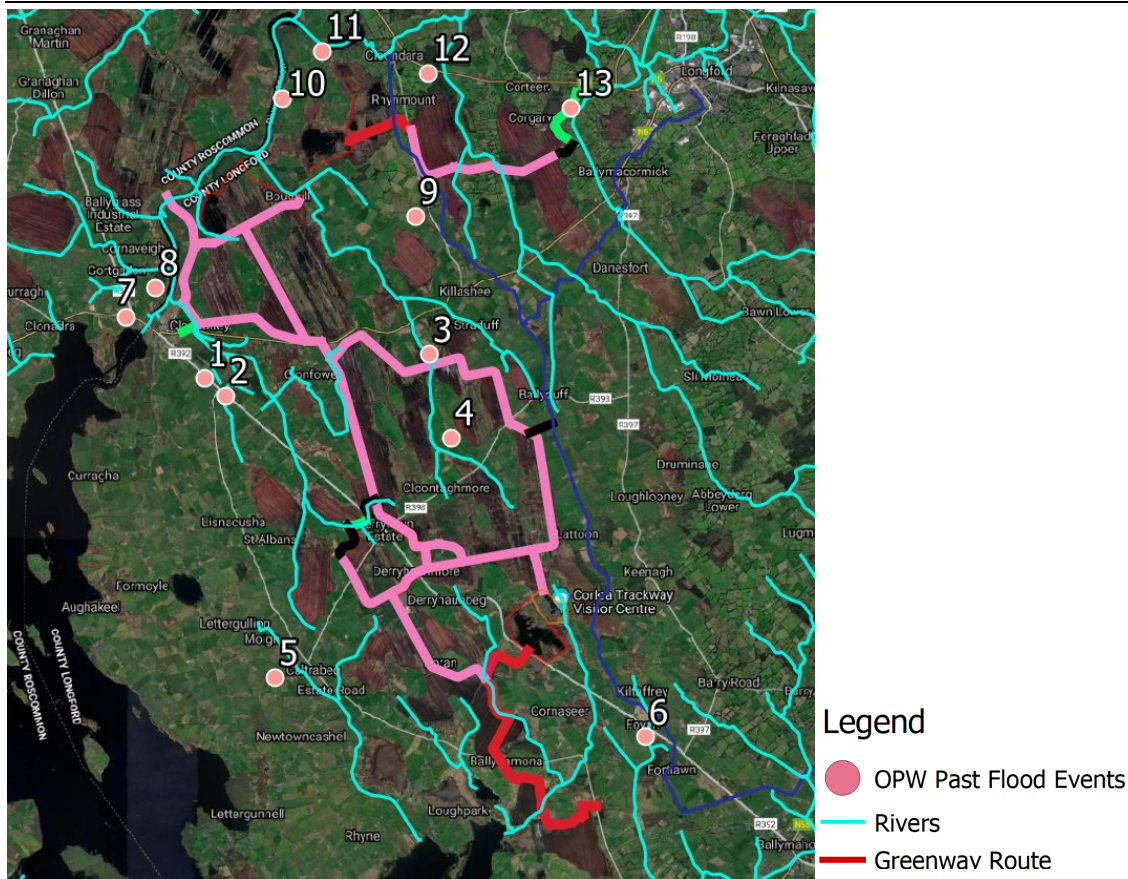


Figure 7 Past flood events in the vicinity of the study area

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	9
Cloonbony	2
Ballyleague/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-Ballyleague	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.

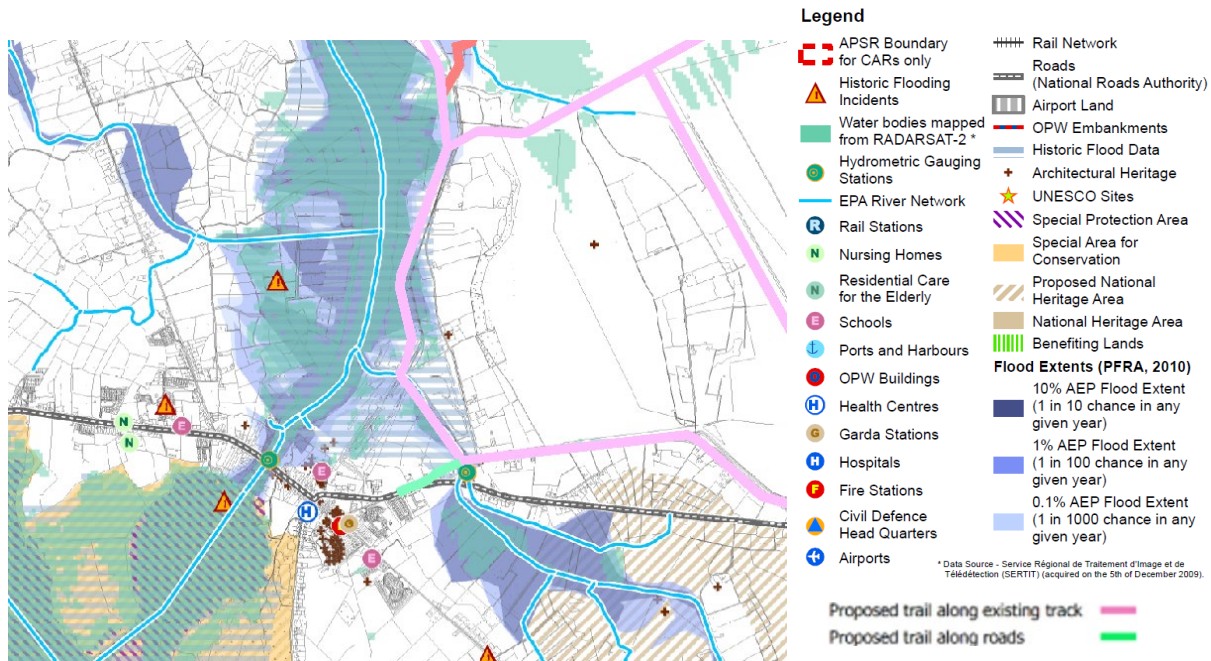


Figure 8 Shannon CFRAM Study Flood Risk Review Map - IRR4

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: <ul style="list-style-type: none"> 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.

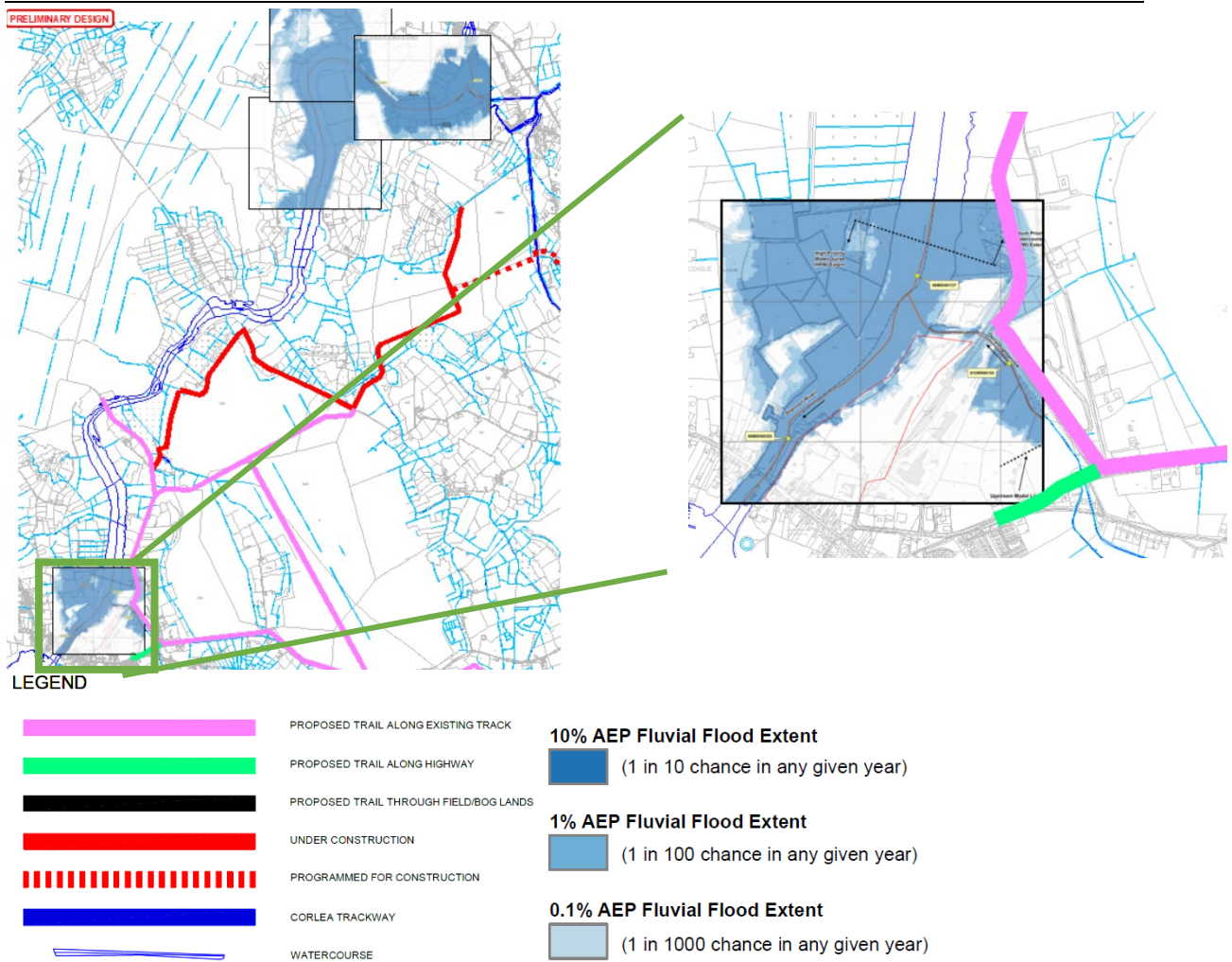


Figure 9 Shannon CFRAM Flood Maps for the study area.

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.

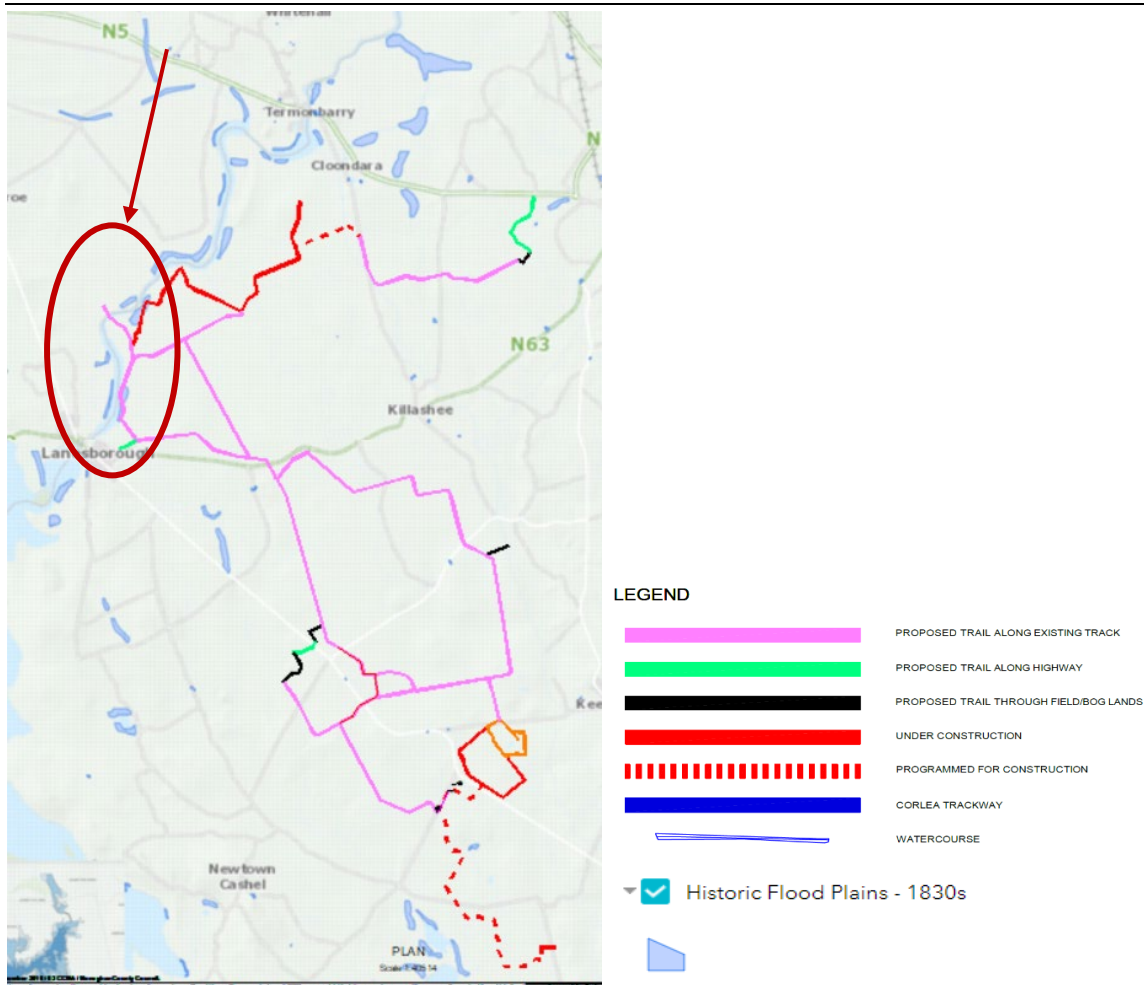


Figure 10 Historic Flood Plains 1830 (www.osi.ie National Townland and Historical Map Viewer)

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-Ballyleague 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.

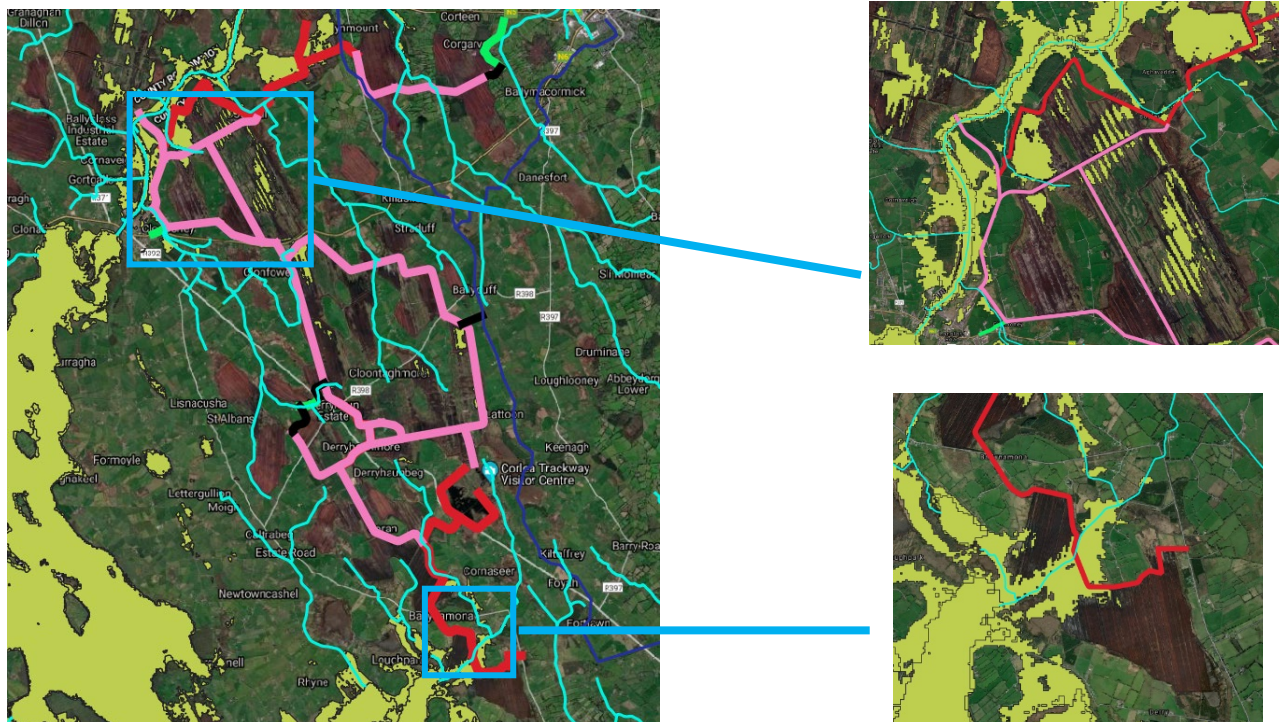


Figure 11 River Shannon flood extents during the event of the 30 November 2009

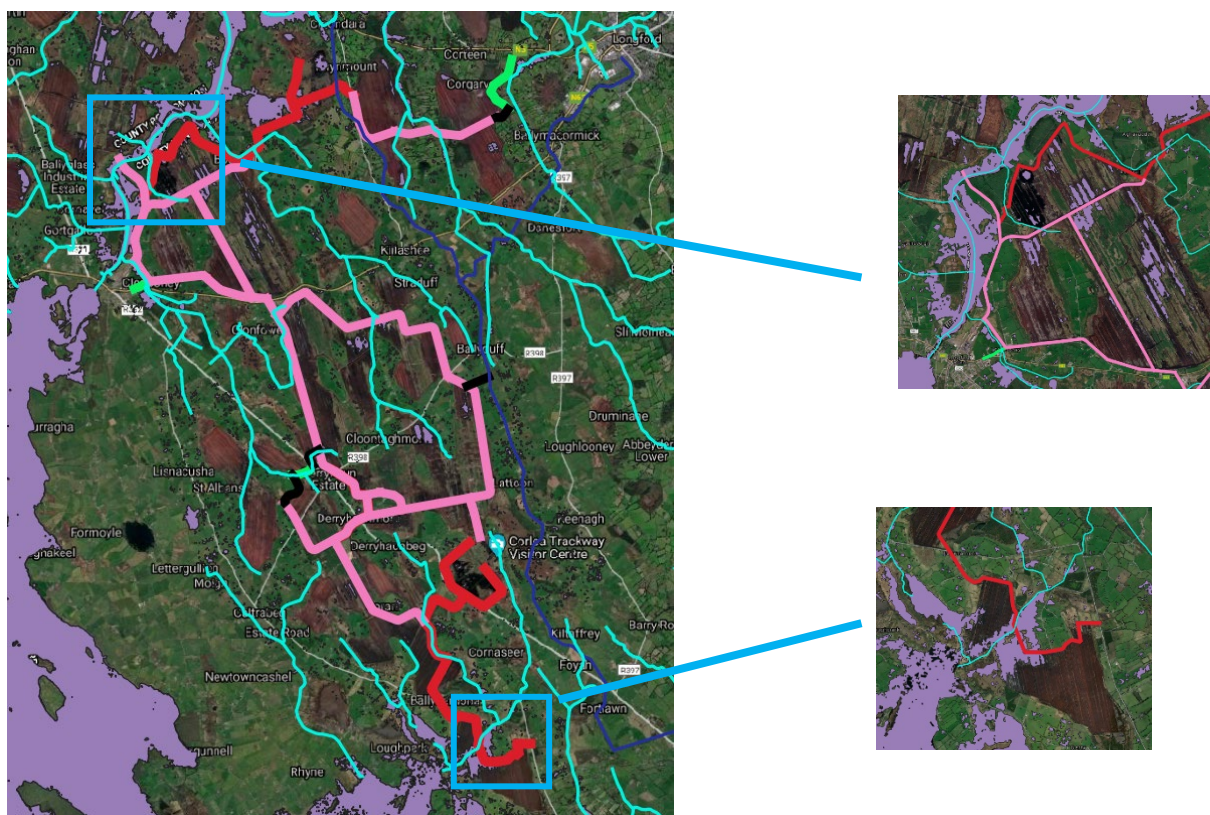


Figure 12 River Shannon flood extents during the event of the 28 December 2015

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. Reprofiting 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.

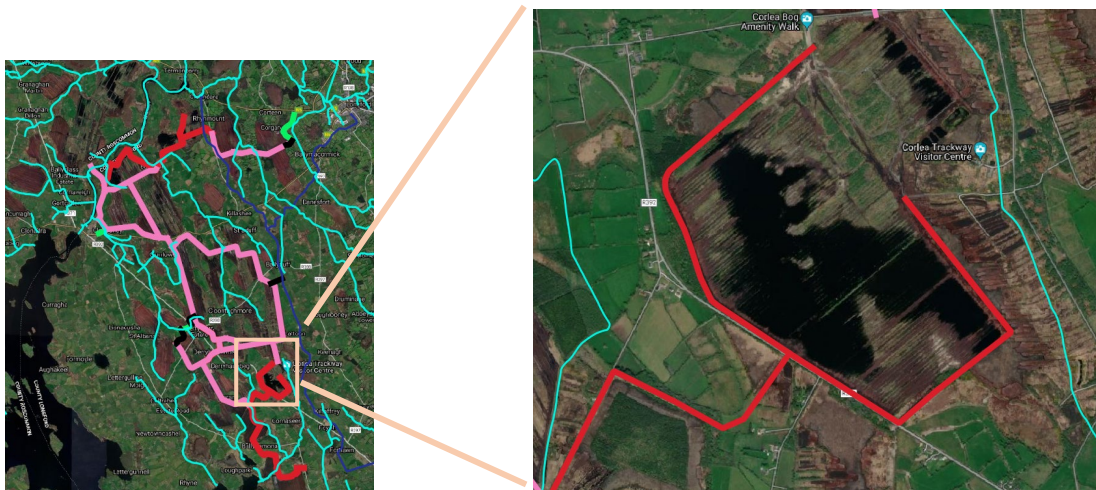


Figure 13 Corlea Greenway section crossing inundated areas.

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.

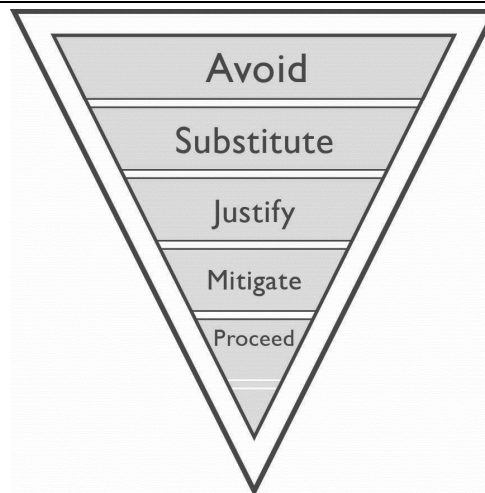


Figure 14 Sequential approach principles in Flood Risk Management

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)	<ul style="list-style-type: none"> • 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,

	<ul style="list-style-type: none"> • 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	<ul style="list-style-type: none"> • 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	<ul style="list-style-type: none"> • 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, • <u>Amenity open space, outdoor sports and recreation and essential facilities such as changing rooms, and</u> • 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-Ballyleague 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 Roscommon and Longford County Councils. The Contractor is to ensure measures are in place to reduce any potential inundation due to flooding during the works.

APPENDIX 3 – ECOLOGICAL IMPACT ASSESSMENT REPORT (ECIA)



Mid-Shannon Wilderness Park Greenway: Ecological Impact Assessment Report



By: Flynn, Furney Environmental Consultants

For: CLANDILLON CIVIL CONSULTING

Date: August 2021

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1 Executive Summary

This report examines the ecological considerations of a proposed new Greenway for Counties Roscommon and Longford. The project area is located within both counties, with the majority of the proposed development works in County Longford. Separate part VIII statutory consent processes will be run in tandem in both Counties. The entire assessment for both Counties is presented here in the interests of clarity and to address potential cumulative impacts to adequately inform the statutory consent processes.

A Greenway is a cycleway that caters for both pedestrians and cyclists in a recreational environment (TII, 2017). This proposed new greenway extends through the Bord na Móna bogs of County Roscommon and central Longford. The aim of this project is to expand greenway provision, adding to and linking 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 study area consists of a linear path around and through a number of former raised bogs that have been used by Bord na Móna for peat cutting over recent decades. A central tenet of the scheme is to make use of existing BnM industrial rail lines used by Bord na Móna as part of their peat harvesting operations which ceased in 2020.

In summary, the scheme, which is approximately 73 km long, 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.

Included within the 73 km are a number of spurs and side trails linking the main trail to roads, towns and to other trail networks. Works involved with this project includes track clearance, track widening, removal and stock piling of material, the laying of a new track surface, resurfacing of existing roads and the provision of signage and street furniture.

This report describes the ecological surveys carried out to facilitate the planning, design and construction of the Mid-Shannon Wilderness Park (MSWP) Greenway. Appendix 1 shows an overall map of the scheme, with more detailed mapping documents provided separately.

This proposed Greenway will generally comprise a 3m wide track, with 1m buffer strips on either side. The greenway will be constructed almost entirely within lands belonging to the Bord na Móna.

This report provides an Ecological Impact Assessment of the proposed route. In order to inform this document, a range of studies and surveys were undertaken by the authors. These include:

- Desktop Study of available resources on the ecological features, constraints and records
- A walkover survey of the route under study
- An assessment of the habitat types
- Species composition of habitats occurring within the site
- A mammal survey of the proposed route and adjacent lands
- Bat habitat survey

The results of all of the above surveys have been used to carry out an Ecological Impact Assessment of the proposed project. Arising from this, a number of impact mitigation measures have been recommended. These will assist in formulating the final design of the proposed route.

1.1 Details of Surveys Carried Out

Surveys were carried out in October 2020. Surveys were carried out at this time due to the constraints of the project schedule. The timing of the survey was suboptimal for a range of species and groups. These included flora and birds. However, sufficient data could be gathered to allow assessment of habitat types based on vegetation evident at time of survey. Dedicated breeding bird surveys could not be carried out at this time. However, any birds seen or heard were recorded and particular habitat types for specialist birds were noted. The timing was close to optimal for terrestrial mammal species.

1.2 Habitats Within Area Under Survey

A relatively limited range of habitats occurs within the immediate area under survey. By far the largest of these habitat types, in terms of surface area is cutover (or 'cutaway') bog. This comprises over 90% of the receiving environment of the proposed greenway development. However, across the very wide survey area other habitat types occur as a 'mosaic' of wetland areas. Habitat types here include remnant raised bog, scrub, wet grassland, heath and

woodland. It should be noted that as peat extraction has ceased in almost all of these peatlands, further (and more complex) habitats will develop as the areas begin to naturalise. After cutover bogland, woodlands were probably the most widely occurring habitat type recorded. These are extremely varied in character and species makeup. Many former cutover bog areas have reverted to Birch-dominated bog woodland. Some cutaway bog areas have been planted by Coillte for commercial production and are dominated by non-native Spruce species. Other habitats recorded which contain freshwater components or are dependent on water features were: wet grassland, tall-herb swamps, reed-fringes, streams and small to very substantial watercourses. The River Camlin is crossed by the route and it is also intended that a spur of the MSWP Greenway will be carried over the River Shannon into County Roscommon by an existing Bord na Móna railway bridge (Kilnacarrow Bridge). A further 89m section of greenway will be constructed in Cloontuskert along existing disused Bord na Mona industrial rail lines to facilitate future access on the western bank of the River Shannon.

1.3 Notable Flora

No rare, threatened or protected floral species as per the Red Data Book (Curtis and McGough, 1988) were found. No species listed in the Flora Protection Order (2015) were found to be growing within the site. No such species were recorded within the area of works. While it should be noted that the timing of works was suboptimal for floral survey, by far the greater majority of the proposed route is on highly modified habitat.

1.4 Trees and Old Woodlands

Older and long-established woodlands were also targeted by the survey. As well as this, older trees that were notable as either 'veteran' or 'champion' trees were specifically sought. Ancient and long-established woodlands are among the rarest of habitats in Ireland and are thus of great ecological and landscape significance. Veteran trees are large specimens of mature trees that offer much habitat of themselves. Champion trees are those that are taller, older or larger than other of their particular species.

The MSWP Greenway will not pass through any woodlands that may be considered to be ancient or long-established. Given the predominance of bogland here and its industrial usage, older trees are not common in this landscape. The commercial plantations here would not

contain such trees. However, any mature broadleaved trees that are valuable for their habitat as well as being of aesthetic and landscape value were noted and recorded.

1.5 Notable Fauna

Signs of activity of Pine Marten were recorded in several areas. Pine Marten is a protected species that has extended its range in Ireland in recent years. Its distribution in the survey area appeared to be associated with conifer plantations. Red Squirrel has similarly expanded its range in recent times and although no activity signs of this species were recorded, it is likely to occur within the survey area. There were some signs of activity of Badgers within the route but no setts found. Much of the area surveyed would be unsuitable habitat for badger setts.

No evidence of Otter activity was recorded and no Otter holts occur within close proximity to the proposed route. However, it is likely that this species would hold territories on the Rivers Shannon and Camlin and on the Royal Canal. Spraints and other signs of Fox were found in numerous locations throughout the survey area.

Surveys for sites suitable for bat roosts (e.g. buildings or large mature trees) were also carried out. No likely roost sites were recorded although some suitable foraging area (e.g. open water, grassland) for several bat species occurs over the area surveyed.

Food plants of the protected Marsh Fritillary butterfly were found in some areas and although no larval webs of this species were recorded, it is likely that these will occur within the area under survey.

All bird species seen and heard during surveys were recorded. The greater majority of the birds recorded were of least conservation concern (Birdwatch Ireland) but 3 no. species were 'red list' species (Golden Plover, Meadow Pipit and Peregrine Falcon), being of highest conservation concern.

1.6 Invasive Species

Some non-native invasive species were recorded within the survey area. These included Rhododendron, Cherry Laurel and Snowberry. In almost every case, these were outside the proposed route and in adjacent woodland, treeline or hedgerows.

1.7 Potential Impacts

No impacts upon any area designated for the conservation of nature are predicted. As by far the greater majority of the proposed route is on modified or built habitat, no direct impacts of any significance are predicted upon these. However, disturbance impacts of a short-term duration (during the construction phase) were described as *possible*. However, these would be negligible in significance. Some loss of habitat such as hedgerows and treelines may also occur but impact significance here will also be *Minor Adverse* at greatest and most impacts to habitats will be *Negligible*. No losses of other semi-natural habitats recorded (e.g. bog woodland, wetland habitats) are predicted. No bogland habitat of higher conservation value will occur.

No impacts are predicted on other wetland habitats such as wet grassland, marsh and reed swamps as the route will not enter these areas. Indirect impacts on some species groups are predicted as being of *minor adverse* significance before mitigation is applied. These include wetland birds.

While a number of invasive plant species occur within or adjacent to parts of the proposed route, there is negligible potential for these to have any significant negative impacts.

1.8 Proposed Mitigation

An extensive schedule of proposed mitigation measures has been drawn up to address the potential impacts predicted. This range of measures includes timing of works, avoidance of sensitive areas adjacent the proposed route and the planting of native tree species.

Invasive species identified may readily be treated following guidelines given in this report and those of statutory agencies. The drawing up of a Construction Environmental Management Plan (CEMP) to include these measures is recommended.

2 Legislation and Planning Policy

2.1 European Council Directives

2.1.1 Council Directive on the Conservation of Natural Habitats of Wild Fauna and Flora (92/43/EEC) (The Habitats Directive)

The main aim of the Directive is to promote the maintenance of biodiversity through the conservation of natural habitats and wild species listed on the Annexes of the Directive. Member States are required to take measures to maintain or restore, at favourable conservation status, biodiversity whilst taking account of economic, social, cultural requirements and regional and local characteristics.

It gives effect to site and species protection measures through establishment of the Natura 2000 network and designation of European Sites including Special Areas of Conservation (SAC) and Special Protected Areas (SPA). It also establishes a list of species (other than birds) whose habitats must be protected to secure their survival. These priority species and habitats are subject to a higher level of protection.

The Directive also requires appropriate assessment of any plan or project not directly connected with or necessary to the management of a European Site, but likely to have significant effects upon a European site, either individually or in combination with other plans or projects.

2.2 Council Directive on the Conservation of Wild Birds (2009/147/EC) (The Birds Directive)

The Directive provides a framework for the conservation and management of, and human interactions with, wild birds in Europe. It makes provisions for the maintenance of the wild bird populations across their natural range; conserves the habitats for rare or vulnerable species listed in Annex I and of migratory species through the classification of SPAs and provides protection for all wild birds.

2.3 Irish Legislation

2.3.1 The European Communities (Birds and Natural Habitats) (Amendment) Regulations 2015 (S.I. No. 355 of 2015)

The European Communities (Birds and Natural Habitats) (Amendment) Regulations provides that the following shall be construed together as one:

- Wildlife Act 1976
- Wildlife (Amendment) Acts of 2000, 2010 and 2012
- European Communities (Birds and Natural Habitats) (Restrictions of the Use of Poison Bait) Regulations 2010
- European Communities (Birds and Natural Habitats) Regulations 2011
- European Communities (Birds and Natural Habitats) (Amendment) Regulations of 2013, 2015
- Wildlife Amendment Bill 2016 (proposed legislation)

2.3.2 European Communities (Birds and Natural Habitats) Regulations 2011 to 2015

The Regulations give effect to requirements relating to the designation of protected sites under the Birds Directive and Habitats Directive. The Regulations provide for the protection and management of European Sites and place obligations on all public authorities to have regard to the requirements of the Habitats Directive beyond the realms of planning related consents issued under the Planning and Development Act 2000, as amended (the PDA). The Regulations also provide for the protection of species of European importance.

2.3.3 Wildlife Acts 1976 to 2012

The Acts provide for *inter alia* the protection of wildlife. The Acts prohibit the intentional killing, taking or injuring of certain wild birds or wild animals; or the intentional destruction, uprooting or picking of certain wild plants.

2.3.4 Wildlife Amendment Bill 2016

The purpose of the Bill is to provide for the implementation of a reconfiguration of the Raised Bog Natural Heritage Area Network arising from (i) the proposals from the Review of Raised Bog Natural Heritage Area Network published in January 2014; (ii) an assessment of the effects on

the environment of the proposals arising from the Review and, if required, any other screening for an assessment or as the case may be, assessment, including public consultation undertaken and (iii) observations or submissions received during the course of public consultation.

Taken as a whole, nature conservation legislation is of key importance in undertaking EclA for proposed development as it shapes planning policy.

2.4 Planning Policy

2.4.1 Roscommon County Development Plan

The current County Development Plan (2014-2020) states, at section 3.5, the county's tourism structure and visitor share are both weak and the Council will work to develop the potential for growth in sustainable Tourism in County Roscommon in conjunction with Fáilte Ireland and local communities. The Council aims to facilitate tourism wherever possible, without compromising the environment or the natural and built heritage. While the tourism sector in Roscommon is comparatively small and underdeveloped, it is of major importance to the local economy and there are tourism resource opportunities within the county. Roscommon's primary tourism resources are rural and natural resource based, and it is a leading outdoor activity destination e.g. its largely unspoilt rural landscape, Lough Key, Lough Ree, the Shannon and their environs. A number of relevant policies are in place with regard to the development of greenways and the need to protect and enhance green infrastructure, biodiversity and ecological integrity. These include:

- *Policy 3.63 Promote Roscommon as a cultural, heritage and eco-tourism destination in order to diversify the range of tourist facilities in the county. All tourist developments will be screened for Appropriate Assessment in accordance with Article 6(3) of the Habitats Directive.*
- *Policy 3.65 Support and facilitate the development of new tourism facilities and services throughout the county*
- *Policy 3.75 Support and promote, with the co-operation of private landowners, public access to heritage sites and features of archaeological interest, mountains, rivers, lakes and other natural amenities, subject to compliance with the requirements of the habitats Directive.*
- *Policy 3.76 Facilitate the development and expansion of existing and new tourist routes and trails, including walking and cycling routes, throughout the County, to include historical and cultural elements, environmental and recreation, general interest and amenities, which will satisfy the needs of the domestic and international visitors as well as the resident population.*

- *Policy 3.78 Restrict development which might be detrimental to scenic and heritage assets in cSACs, pNHAs & SPAs and to designated scenic views and routes as set out in the Landscape Character Assessment that accompanies this Plan.*
- *Policy 3.79 All tourist developments along the Shannon Corridor will be subject to compliance with the requirements of the Habitats Directive.*
- *Policy 8.36 Develop, provide, improve extend, safeguard, preserve, support encourage and facilitate the creation of a network of cycling/walking routes (including existing footpaths and walking routes, off road routes, local walks, tourist walks, medium and long distance walking routes), well marked and maintained public rights of way, green corridors to provide access to mountain lakeshore and river features, particularly where these have a historical association. Recognise the potential of walking and cycling as an amenity for local people and a tourism resource in opening up diverse landscape and to support the development of walks and cycle routes which consider local need and economic potential as well as the development of bicycle renting, walking and cycling tours. All such development will be subject to the Habitats Directive Assessment where appropriate and/or other relevant environmental assessment.*
- *Policy 8.37 Encourage walking and cycling as sustainable transport modes and healthy recreational activities by ensuring that a network of safe, well-marked and maintained rights-of-way, walking and cycle routes, and footpaths are provided in mountainous, lowland and tourist areas and throughout the County.*
- *Policy 8.38 Support and promote National Programmes to develop walking and cycle routes including the Irish Trails Strategy, the National Cycle Policy Framework 2009-2020 and the National 13 National Cycle Network Scoping Study, August 2010, Smarter Travel/NRA Cycle Network as well as supporting the development of local routes identified in the Council's Area Plans and Local Area Plans. All such development will be subject to the Habitats Directive Assessment where appropriate and/or other relevant environmental assessment.*
- *Policy 8.39 Actively encourage the use of off-road routes, such as disused railway lines and bridle paths for the development of medium and long distance walking and cycling routes as well as the development of linkages between existing and new trails, particularly those with a historic association in adjoining counties, in co-operation with Inland Waterways, Fáilte Ireland and with other relevant stakeholders to provide linkages with trails in adjoining counties in partnership with their councils.*

The emerging Draft Development Plan 2021-2027 specifically refers to the development of the Shannon Corridor blueway in the tourism section at chapter 6.7 and the collaboration with Fáilte Ireland on the hidden Heartlands brand and the Shannon tourism Masterplan. It also refers to the increased demand for activity tourism - walking and cycling in particular.

The plan contains the following relevant policies with regard to greenway development in a tourism and economic development context

- *ED 6.20 – promote tourism as an integral part of County Roscommon’s economic profile, supporting urban and rural enterprise and recognising the key strategic location of the County and access to tourist sites and attractions*
- *ED 6.22 – promote the development of sustainable tourism as part of our economy, that recognises our landscapes, our cultural heritage and our environment.*
- *ED 6.24 – Collaborate with relevant state bodies, neighbouring local Authorities and local communities in delivering a UNESCO accredited Biosphere for Lough Ree and the Mid-Shannon Wilderness Park*
- *ED 6.25 – Encourage walking and cycling as sustainable transport modes and healthy recreational activities by ensuring that a network of safe, well-marked and maintained rights-of-way, walking and cycling routes and footpaths are provided throughout the County*
- *ED 6.26 – Facilitate the creation of a network of cycling/walking routes (including existing footpaths and walking routes, off-road routes, local walks, tourist walks, medium and long-distance walking routes) within the County*
- *ED 6.27 – Develop linkages between existing and new trails, particularly those with a historic association in adjoining counties, in cooperation with inland Waterways, Fáilte Ireland and with other relevant stakeholders to provide linkages with trails in adjoining Counties in partnership with their Councils.*

The following policies relate to the potential for sustainable and ecologically sensitive greenway development:

- *NH 10.14 – Work with the relevant agencies such as Bord na Mona, NPWS, Coillte and adjacent Local Authorities to prepare an after-use framework plan for the peatlands and related infrastructure to provide for the future sustainable and environmentally sensitive use of large industrial peatland sites when peat harvesting finishes*
- *NH 10.23 - Facilitate the ongoing development and improvement of green infrastructure in the plan area including green networks, green amenities and linked green corridors which ensure the provision of recreational amenities, natural areas for the growth of wildlife and biodiversity and a network of infrastructure which results in a better quality of life for visitors and inhabitants alike*
- *NH 10.25 – Support the development of strategic greenways, blueways and peatways in the County in Accordance with the strategy for future development of national and regional greenways (2018)*

2.4.2 Longford County Development Plan

Longford hosts a wealth of wildlife including a range of threatened habitats and species which are protected by law and are recognised as being of local, national and EU importance.

The County Development Plan (CDP) sets out policies in relation to natural heritage and biodiversity: These consist of 23 Natural Heritage policy objectives that relate to the protection

of areas of natural heritage that are protected under European and National guidelines. The plan's objective is to ensure that all developments within the county are carried out in accordance with the guidelines for assessment and implementation stated in the guidelines discussed in section 2 of this report.

The CDP also recognises the need to protect non-designated sites from inappropriate development. These include locally important natural habitats or wildlife corridors. The CDP also commits to protect and enhance important landscape features and their settings. The Council will also seek to enhance the county's biodiversity and natural heritage, including its landscape, by promoting appropriate recreational and amenity schemes.

With regard to recreation and tourism key strategic objectives of the CDP includes the Outdoor Longford strategy;

Developing the activity and adventure tourism market and building upon and developing opportunities to create 'Outdoor Longford'. Given that the activity and adventure tourism market is considered to be one of the most significant for the County, this includes opportunities that promote and facilitate development of this type and in particular cycling, walking and water sports.

With reference to the proposed Greenway the plan states:

The Corlea Project represents a first step in the development of a potential Mid Shannon Wilderness Park. Much of the land involved is in State ownership. Existing natural amenity areas such as Lough Ree, the Shannon, the Royal Canal and the future rehabilitated bogs, all of which are in very close proximity to each other in Longford, can be combined to create the Mid Shannon Wilderness Park.

The Council also now proposes to work with Bord na Móna to consider a future use of the bogs as they are worked out and re-habilitated over the next 10/20 years. It is envisaged that portions of the bogs will be re-habilitated as natural biodiversity locations thus providing Longford with potentially large areas of natural amenity with tourism potential. This could also allow for the existing bog rail banks to be utilized as additional walking/cycling tracks through the area thus increasing the walking/cycling network through the County.

Indeed it may also be possible to link a walking/cycling route from Dublin through Longford and across the Shannon to Strokestown, Roosky via the bog rail network and bridge. This in turn would open up the potential of linking Dublin through Longford and on to the Greenway at Westport and Sligo. As Bord na Móna completes its rehabilitation work on the bogs it may be possible for existing local communities, and Longford County Council to take responsibility for portions of the cutaway bogs. This will not conflict with any future intention of Bord na Móna and its potential future use of the bogs. The amenity use of the rehabilitated bogs can be compatible with any future use for the bogs such as renewable energy projects. The potential for the development of further walking routes within the County and linking with neighbouring counties should be explored, particularly where these have a cultural or historical association e.g. the Táin Trail.

The (Draft) County Longford Heritage Plan 2019-2024 states as an objective (Obj. 5) to: ‘Support the sustainable enjoyment of Longford’s countryside, waterways and heritage’. In particular, it will: ‘Support the development of walking, cycling and waterways routes within the county’. The MSWP is later particularly referenced here.

3 Desk Study

Prior to the main fieldwork contributing to this assessment, a desktop survey of available information sources was carried out. These included:

- The National Biodiversity Data Centre Online Database
- The National Biodiversity Network Online Atlas
- The OSI Geohive Database
- The NPWS Protected Species Database and Online Mapping
- The Environmental Protection Agency Database
- The EPA Water Quality in Ireland Report
- Biology.ie

Desk research also included a review of records available through the National Biodiversity Data Centre mapping system. These included rare and protected species. Records were requested for all species appearing within the study area or immediately surrounding the study area.

Designated sites were identified using the current boundary shapefiles downloaded from the NWPS website. Records of species from within the relevant Km squares were also obtained. Habitat mapping also reviewed included the Irish Semi-Natural Grassland Surveys (ISGS), the National Survey of Native Woodland (NSNW) and Ancient woodland inventory.

4 Field Study

Field work for this survey was carried out between the 1st and the 9th of October 2020. The field survey habitat assessments were carried out according to guidelines given by the Heritage Council (2011) and the JNCC (2010). The primary purposes of the field survey was to:

- Identify habitat types within the study area
- Assess for the presence of protected species of flora and fauna
- Identify ecological and environmental constraints to the construction of this Greenway
- Identify ecological sensitivities around and within the study area.

The walkover survey considered a broad survey corridor to ensure all other important features that could be impacted by the development were considered (e.g. significant treelines and hedgerows, mammal paths, streams and other watercourses). Gross habitat mapping was carried out and was a key output of this survey (See Separate mapping document in Appendix A). The fieldwork also provided guidance for any further, more detailed surveys including further bird surveys during optimal times of the year (e.g. winter – for wetland bird species) and repeated visits to some sensitive sites. The field survey was also used to identify areas of greater environmental/ecological sensitivity. These were recorded as Ecologically Sensitive Areas (ESAs) and at this stage were flagged for further study if required. This survey also established further fieldwork requirements/limitations - e.g. where sites were not accessible

5 Stakeholder Consultation

Prior to, during and following the fieldwork assessment for the Ecological Impact Assessment, the authors undertook measures to consult with a number of bodies and known authorities as well as non-governmental and voluntary organisations. These included:

Habitats and Species

- National Parks and Wildlife Service
- Longford County Council
- Roscommon County Council
- Bord na Móna
- Irish Wildlife Trust

Rivers, Fisheries and Watercourses

- Inland Fisheries Ireland

Birds

- Birdwatch Ireland

Flora

- Botanical Society of the British Isles

6 General Ecology and Habitats

6.1 Introduction

The purpose of the ecology survey was to:

- Classify and map the habitats according to Fossitt (2000) and where appropriate the Habitats Directive (European Commission, 2013) classification scheme.
- Carry out an inventory of flora and fauna, particularly mammals and birds, in each section.
- Identify Ecologically Sensitive Areas in the study area
- Prepare a GIS database of habitat mapping, rare species records, invasive species and other ecological and management features.

About the authors

The survey and reporting was carried out by ecologists Billy Flynn, Ian Douglas, Usna Keating and Chris Doyle. Billy, Chris and Usna undertook the botanical and faunal assessment, Usna and Billy undertook bird and mammal surveys. Ian was responsible for the overall GIS habitat mapping. All of the team members are qualified and experienced ecologists.

6.2 Methodology

6.2.1 Desk study and consultations

Designated sites were identified using the current boundary shapefiles (SAC 07/2017, SPA 01/2017) downloaded from the NPWS website. Other online mapping reviewed included Geohive maps, aerial photography and EPA shapefile datasets¹. Habitat mapping reviewed included the Irish Semi-Natural Grassland Surveys (ISGS), the National Survey of Native Woodland (NSNW) and the Ancient and long established Woodland (NPWS shapefiles). Desk research also included review of records available through the National Biodiversity Data Centre mapping system. Consultation was made with a number of bodies and individuals which included the NPWS, Bord na Móna and Inland Fisheries.

¹ www.gis.epa.ie/Envision

6.3 Field surveys

6.3.1 Un-surveyed areas

Access to the proposed route was readily achieved in all of the areas under survey. The industrial railway network that the proposed route will follow was in use or in recent use and there was little overgrowth. The authors are satisfied that all areas required to be surveyed for the purposes of this assessment were accessed. However, if there are any variations to the proposed route, it is recommended that these be subject to further survey.

6.3.2 Habitats and flora

Habitats within the study area were mapped according to level 3 of the Heritage Council classification (Fossitt, 2000) following the Heritage Council's Best Practice Guidance (Smith et al., 2011) and the Joint Nature Conservation Committee's (JNCC) Handbook for Phase 1 Habitat Survey – a technique for environmental audit (JNCC, 2010). The Heritage Council's *A Guide to Habitats in Ireland* (Fossitt, 2000) is the standard habitat classification system used in Ireland.

Habitats were also assessed for correspondence to the Habitats Directive Annex I habitat types (European Commission, 2013). Habitats of high species diversity or rarity within the local context and sensitive habitats were classified as Ecologically Sensitive Areas (ESAs).

Habitats and flora field surveys were carried out over a number of days in October 2020. Habitats were mapped by annotating aerial photographs and OSI vector maps in the field and using GPS point. These were then digitized using QGIS 3.4 software. The full extent of the proposed greenway corridor was walked. This included an approximately 3 metre wide strip upon which the greenway will run. However, the surveyed area was between 10-20 meters and more in open areas. In most instances, areas of dense vegetation were not within the clearance corridor and are therefore not likely to be impacted upon by the proposed development. Some areas outside the immediate footprint of the greenway pathway were also surveyed these may include areas within the same habitat type or adjoining habitats including the areas of regenerating bog and surrounding fields, woodland, hedgerows and streams.

A list of vascular and other plant species was recorded from each section. Invasive plant species (where found) were recorded using a GPS. No occurrence of Third Schedule Invasive Species was recorded. These are species whose propagation and spreading is strictly controlled by regulations.

The survey was carried out in October 2020 which is late in the flowering season, therefore some early flowering plant species may have been missed. In particular, early flowering orchid species may be under recorded or the abundance of vernal species such as Bluebells or Violets may be under represented.

6.3.3 Ecological Impact Assessment Methodologies

This ecological impact assessment has been prepared in accordance with relevant legislation and best practice guidance including:

- The Chartered Institute of Ecology and Environmental Management Guidelines for Ecological Impact Assessment in the UK and Ireland: terrestrial, freshwater and Coastal 2nd Edition. CIEEM (2018).
- The EPA's Draft Advice Notes on Preparing Environmental Impact Statements (EPA, 2015a).
- The EPA's Draft Revised guidelines on Information to be Contained in Environmental Impact Statements (EPA, 2015b).
- Guidelines for Assessment of Ecological Impacts of National Road Schemes (NRA, 2009).

Ecological features (habitats and species) were evaluated for their conservation importance according to the National Roads Authority's scheme (NRA 2009). For habitats or species, significance of effects was assessed with reference to their conservation status, abundance and distribution. Description of significant effects follows guidance outlined in the EPA Draft Revised Guidelines on the Information to be Contained in EIS (EPA, 2015b). The term 'significant effect' as used in this report follows guidance (CIEEM, 2018) and is an effect that either supports or undermines biodiversity conservation objectives for 'important ecological features' or for biodiversity in general. In the case of designated sites, a negative significant effect would be one that undermines the conservation objectives and targets for that site. The significance of impacts on habitats was determined with reference to the value of the feature being affected and the magnitude of the impact. Impacts are considered ecologically significant at a stated geographic scale or are considered not significant.

7 Results

7.1 Designated Areas

All sites designated for the conservation of nature within 15km of the proposed works are detailed in Table 1 – Table 2.

Table 1: Designated sites with 15km of the Proposed Project Area

Site Code	Site Name	Designation	Distance from the Site
4064	Lough Ree	SPA	0.57km
4101	Ballykenny-Fisherstown Bog	SPA	1.63km
440	Lough Ree	SAC	0.57km
2202	Mount Jessop Bog	SAC	1.6km
1818	Lough Forbes Complex	SAC	1.7km
2346	Brown Bog	SAC	1.8km
448	Fortwilliam Turlough	SAC	3.4km
2349	Corbo Bog	SAC	5.4km
2348	Clooneen Bog	SAC	7.6km
1626	Annaghmore Lough (Roscommon)	SAC	13.4km
2313	Ballymore Fen	SAC	13.4km
2336	Carn Park Bog	SAC	14.9km
1444	Derry Lough	pNHA	0.01km
2103	Royal Canal	pNHA	0.01km
449	Lough Bannow	pNHA	0.14km
1819	Lough Bawn	pNHA	0.16km
440	Lough Ree	pNHA	0.57km
1818	Lough Forbes Complex	pNHA	1.7km
442	Brown Bog	pNHA	1.8km
1821	Cordara Turlough	pNHA	2.0km
447	Derrymore Bog	pNHA	2.1km
448	Fortwilliam Turlough	pNHA	3.4km
1443	Lough Slawn	pNHA	5.0km
602	Corbo Bog	pNHA	5.4km

1822	Carrickglass Demesne	pNHA	6.5km
445	Clooneen Bog	pNHA	7.6km
689	Lough Sewdy	pNHA	11.1km
608	Kilglass And Grange Loughs	pNHA	11.2km
1732	Waterstown Lake	pNHA	11.5km
1642	Lough Bodergh And Lough Bofin	pNHA	12.3km
1617	Ardakillin Lough	pNHA	13.6km
676	Carn Park Bog	pNHA	14.9km
1450	Mount Jessop Bog	NHA	1.6km
1448	Forthill Bog	NHA	2.18km
605	Derrycanan Bog	NHA	9.3km
2072	Lisnarragh Bog	NHA	9.3km
422	Aghnamona Bog	NHA	11.3km
1423	Cloonageeher Bog	NHA	11.6km
691	Rinn River	NHA	12.5km
1420	Corracramph Bog	NHA	14.1km

A total of 10 sites designated as SACs and 2 sites designated as SPAs were recorded within 15km of the proposed development. The nearest Natura designated sites were Lough Ree SAC and Lough Ree SPA, around 0.6km from the proposed route.

A total of 8 proposed National Heritage Areas (NHAs) were also recorded within 15km of the proposed development. The closest being Mount Jessop Bog 1.6km away.

A total of 20 pNHAs were found within 15km of the route. The closest of these was Derry Lough the boundary of which the route runs along its boundary at some points.

No risks to the conservation objectives of any other sites listed in table 1 are considered likely due one or more of the following:

- Lack of connectivity between the proposed development and the designated area.
- Significant buffer between the proposed works area and the designated area
- No impact or change to the management of the designated area or;
- No change to chemical or physiological condition of the designated site as a result of the proposed development.

Table 2: Lough Ree SAC & SPA Qualifying & Conservation Interests

SITE	CODE	DISTANCE TO DESIGNATED SITE	SCREENING CRITERIA
Lough Ree SPA & SAC	004064	Approximately 0.5km	No physical pathways identified
HABITAT TYPES (*DENOTES A PRIORITY HABITAT)			Habitat (Natura)
Natural eutrophic lakes with Magnopotamion or Hydrocharition - type vegetation			3150
Semi-natural dry grasslands and scrubland facies on calcareous substrates (Festuco-Brometalia) (* important orchid sites)			6210
Active raised bogs			7110
Degraded raised bogs still capable of natural regeneration			7120
Alkaline fens			7230
Limestone pavements			8240
Bog woodland			91D0
Alluvial forests with <i>Alnus glutinosa</i> and <i>Fraxinus excelsior</i> (Alno-Padion, Alnion incanae, Salicion albae)			91E0
Annex II Species: Common name (<i>Latin Name</i>)			Species (Natura) Code No.
Little Grebe (<i>Tachybaptus ruficollis</i>)			A004
Whooper Swan (<i>Cygnus cygnus</i>)			A038
Wigeon (<i>Anas penelope</i>)			A050
Teal (<i>Anas crecca</i>)			A025
Mallard (<i>Anas platyrhynchos</i>)			A053
Shoveler (<i>Anas clypeata</i>)			A056
Tufted Duck (<i>Aythya fuligula</i>)			A061
Common Scoter (<i>Melanitta nigra</i>)			A065
Goldeneye (<i>Bucephala clangula</i>)			A067
Coot (<i>Fulica atra</i>)			A125
Golden Plover (<i>Pluvialis apricaria</i>)			A140
Lapwing (<i>Vanellus vanellus</i>)			A142

Common Tern (<i>Sterna hirundo</i>)	A193
Wetland and Waterbirds	A999
Otter (<i>Lutra Lutra</i>)	1355

7.2 Overview of habitats and classification

An overview of the main habitats recorded is detailed below. Greenway study area and the classification applied is provided here. More detail is provided in the description of habitats within each section.

7.2.1 Conifer Plantation (WD4) and Mixed Conifer Woodland (WD3)

Fossitt (2000) describes this category as areas that support dense stands of planted conifers where the broadleaved component is less than 25% and the overriding interest is commercial timber production. The conifer plantations encountered were characterised by even-aged stands of trees that are usually planted in regular rows running adjacent to the proposed route and in the surrounds. Plantations consisted mainly of Sitka Spruce (*Picea sitchensis*), Scots Pine (*Pinus sylvestris*) Lodgepole Pine (*Pinus contorta*), Norway Spruce (*Picea abies*) and Larches (*Larix spp.*). Species diversity was generally low and single species stands are common.

Mixed Conifer Woodland as they appeared surrounding the study area was composed of mixed stands of the above species. Depending upon the density of planting and species composition these stands contained varying levels of shrub and understory plants.

The proportion of ground flora species was dependent upon the degree of light penetration and Bramble growth. In many instances, Bramble (*Rubus fruticosus agg.*) dominated the understorey and smothered all other plants with the exception of those who could climb above the thicket like Ivy (*Hedera helix*), Honeysuckle (*Lonicera periclymenum*), Hedge Bindweed (*Calystegia sepium*), Cleavers (*Galium aparine*) and Bush Vetch (*Vicia sepium*). Bent grasses (*Agostis spp.*) were noted here.

7.2.2 Mixed broadleaved/conifer woodland WD2

This general category includes woodland areas with mixed stands of broadleaved trees and conifers, where both types have a minimum cover of 25%, and a maximum of 75%. Trees contained a mixture of both native or non-native species. In general non-natives were usually conifers including Sitka Spruce (*Picea sitchensis*), Lodgepole Pine (*Pinus contorta*), Norway

Spruce (*Picea abies*) and Larches (*Larix spp.*) with the exception of the broadleaved species Beech (*Fagus sylvatica*) and Sycamore (*Acer pseudoplatanus*). The native broadleaved component usually contained Willows (*Salix Spp.*), Alder (*Alnus glutinosa*), Sessile Oak (*Quercus petraea*), Downy Birch (*Betula pubescens*), Holly (*Ilex aquifolium*), Rowan (*Sorbus aucuparia*), Elder (*Sambucus nigra*), Ash (*Fraxinus excelsior*) and Hazel (*Corylus avellana*). The mixture of these species was usually determined by seed sources, light exposure and degree of wetness. Small and immature broadleaved trees and shrubs were common in these habitat types. Understory plants varied greatly across the site depending on topography and acidity of the soil. Under conifers and where conifers had recently stood the following herb species were common; Willowherb (*Epilobium spp.*), Foxgloves (*Digitalis purpurea*) and ferns including Bracken (*Pteridium aquilinum*) and Hard Fern (*Blechnum spicant*). Climbers; Honeysuckle (*Lonicera periclymenum*) and Ivy (*Hedera helix*) were also common. In areas where broadleaved trees dominated the ground flora layer Cleavers (*Galium aparine*), Bush Vetch (*Vicia sepium*), Meadow Vetchling (*Lathyrus pratensis*), Nettle (*Urtica dioica*) and Wood Sorrel (*Oxalis acetosella*) were noted. Species diversity was likely greater than that described here but could not be fully assessed given the time of the year.

7.2.3 Scrub (WS1)

This broad category includes areas that are dominated by at least 50% cover of shrubs, stunted trees or brambles. The canopy height is generally less than 5 metres. Scrub develops as a precursor to woodland or as a result of recent disturbance and was often found in inaccessible locations, or on abandoned or marginal land. Scrub was common throughout the study area and has developed in a number of different circumstances. Scrub dominated by bramble, gorse and willow was most common. Scrub was commonly found along the sides of the tracks between the track and areas of cutover bog. In many instances scrub was found to transition into bog woodland. Scrub often formed an impenetrable thicket and often could not be surveyed in detail. Trees in the scrub usually consisted of Willows (*Salix Spp.*), Downy Birch (*Betula pubescens*), Hawthorn (*Crataegus monogyna*), Blackthorn (*Prunus spinosa*) and Gorse (*Ulex europaeus*). Climbers included Dog-rose (*Rosa canina*), Bramble (*Rubus fruticosus agg.*), Ivy (*Hedera helix*), Honeysuckle (*Lonicera periclymenum*), Hedge Bindweed (*Calystegia sepium*), Cleavers (*Galium aparine*) and Bush Vetch (*Vicia sepium*). A herb layer and grasses were generally absent or minimal.

7.2.4 Hedgerows (WL1) and Treelines (WL2)

Hedgerows are linear strips of shrubs, often with occasional trees. Some hedgerows may be overgrown or fragmented if management has been neglected, but where still considered in this category unless they have changed beyond recognition. Most hedgerows recorded during this survey were outside the study area or forming the boundary of the study areas e.g. along roadways or along the track side. Species composition varies with factors such as age, management, soils and exposure. Hedgerows usually contained plants such as Hawthorn (*Crataegus monogyna*), Blackthorn (*Prunus spinosa*), Gorse (*Ulex europaeus*), Holly (*Ilex aquifolium*), Dog-rose (*Rosa canina*), Bramble (*Rubus fruticosus agg*), Ash (*Fraxinus excelsior*), Hazel (*Corylus avellana*), Beech (*Fagus sylvatica*), Elder (*Sambucus nigra*), Elms (*Ulmus spp.*) and Willows (*Salix spp.*). In many instances mature trees over 10 meters tall were found within hedgerows. Climbing plants such as Ivy (*Hedera helix*), Honeysuckle (*Lonicera periclymenum*), Hedge Bindweed (*Calystegia sepium*), Cleavers (*Galium aparine*) and Bush Vetch (*Vicia sepium*) were common. Many hedgerows particularly those in front of houses or that ran along roads contained non-native shrub species including Fuchsia (*Fuchsia magellanica*), Box (*Buxus sempervirens*), Snowberry (*Symphoricarpos albus*), Cotoneaster (*Cotoneaster spp.*), Leyland cypress (*Cupressus x leylandii*) and Cherry Laurel (*Prunus laurocerasus*).

Treelines were also common features in the same context as hedgerows discussed above. Treelines usually had the same characteristics as hedgerows but contained more mature trees. Treelines species included: Beech (*Fagus sylvatica*), Downy Birch (*Betula pubescens*), Horse Chestnut (*Aesculus hippocastanum*), Sycamore (*Acer pseudoplatanus*), Ash (*Fraxinus excelsior*) and Alder (*Alnus glutinosa*).

7.2.5 Mixed Broadleaved woodland (WD1)

Fossit describes this general category of woodlands as areas with 75-100% cover of broadleaved trees, and 0-25% cover of conifers. Mixed broadleaved woodland is used in situations where woodland stands cannot be classified as semi-natural or are clearly planted this may include woodlands planted hundreds of years before as is often the case in and around old estates. Beech (*Fagus sylvatica*) was a common inclusion in this habitat type along with Willows (*Salix Spp.*), Alder (*Alnus glutinosa*), Sessile Oak (*Quercus petraea*), Downy Birch (*Betula pubescens*), Holly (*Ilex aquifolium*), Rowan (*Sorbus aucuparia*), Sycamore (*Acer pseudoplatanus*), Elder (*Sambucus nigra*), Ash (*Fraxinus excelsior*) and Hazel (*Corylus avellana*) in varying quantities. The

ground layer within this habitat type was variable and often contained large numbers of sapling Ash (*Fraxinus excelsior*), Elder (*Sambucus nigra*) and Sycamore (*Acer pseudoplatanus*).

Bramble (*Rubus fruticosus* agg.) was dominant or abundant in most areas of Mixed Broadleaved woodland along Wood Speedwell (*Veronica montana*), Ivy (*Hedera helix*), Herb-Robert (*Geranium robertianum*), Bush Vetch (*Vicia sepium*), Enchanter's-nightshade (*Circaea lutetiana*), Wood Sorrel (*Oxalis acetosella*) and Bracken (*Pteridium aquilinum*).

In wet areas where streams and ditches were found or where the ground level was closer to the water level wet woodland areas occurred. Many of these areas have been classified as Wet Willow Woodland (WN6) and these are discussed in detail below. Areas of broadleaved woodland that were wet but did not fit into that category as they were not permanently waterlogged are described here:

Woodlands dominated by Willows (*Salix* Spp.), Alder (*Alnus glutinosa*) and Downy Birch (*Betula pubescens*) was commonly found in depressions bordering the site and along the edge of areas of cutover bog.. Alder (*Alnus glutinosa*) and Willow usually dominated the canopy with grasses including creeping bent (*Agrostis stolonifera*) often forming a uniform mat in the understory. Herbs included Water Mint (*Mentha aquatica*), Water forget-me-nots (*Myosotis* spp.), Meadowsweet (*Filipendula ulmaria*) and Rushes (*Juncus* Spp). Many of these areas graded into true Wet willow woodland or areas of wet grassland.

7.2.6 Wet willow-Alder-ash woodland (WN6)

According to Fossitt (2000) this broad category includes woodlands of permanently waterlogged sites that are dominated by Willows (*Salix* sp.), Alder (*Alnus glutinosa*) or Ash (*Fraxinus excelsior*), or by various combinations of some or all of these trees. It includes woodlands of lakeshores, stagnant waters and fens. Woodlands of this habitat types have a ground flora that is often 'grassy' in appearance with abundant remote Sedge (*Carex remota*) and Creeping bents (*Agrostis stolonifera*). Other common components of the field layer include Bramble (*Rubus fruticosus* agg.), Creeping Buttercup (*Ranunculus repens*), Meadowsweet (*Filipendula ulmaria*), Marsh-bedstraw (*Galium palustre*), Yellow pimpernel (*Lysimachia nemorum*) and Lady-fern (*Athyrium filix-femina*).

Surrounding the study area these woodlands were typically found around where rivers and drainage ditches were close to ground level creating permanent or near permanent flooded conditions for most of the year. Ground flora was quite typical of WN6 woodlands in places with

common components including Reed Canary-grass (*Phalaris arundinacea*), Remote Sedge (*Carex remota*), Creeping Buttercup (*Ranunculus repens*), Marsh-bedstraw (*Galium palustre*). Other species commonly occurring in this habitat included Water Mint (*Mentha aquatica*), Marsh Thistle (*Cirsium palustre*), Purple loosestrife (*Lythrum salicaria*), Wild Angelica (*Angelica sylvestris*) and Lady-fern (*Athyrium filix-femina*).

Fossitt notes that “wet willow-Alder-ash woodland (WN6) may contain links with the priority Annex I habitat Alluvial forests with *Alnus glutinosa* and *Fraxinus excelsior* (*Alno-padion*, *Alnion incanae*, *Salicion albae*) (91E0)”.

7.2.7 Depositing lowland rivers (FW1) and Eroding upland Rivers (FW1)

Rivers within the study area were found crossing the route at a number of occasions. In most instances, aquatic vegetation was only occasional and typically species here included Fool’s Water Parsley (*Apium nodiflorum*), Reed Canary Grass (*Phalaris arundinacea*) and unbranched Bur-reed (*Sparganium emersum*) with water starwort (*Callitriche sp.*) and Duckweed (*Lemna sp.*) occurring where the flow was particularly slow.

7.2.8 Drainage ditches (FW4)

This category includes linear water bodies or wet channels that are entirely artificial in origin, and some sections of natural watercourses that have been excavated or modified to enhance drainage and control the flow of water. Drainage ditches either contained water (flowing or stagnant) or were wet enough to support wetland vegetation. Drainage ditches were common throughout the site and were usually associated with drainage of peat formations. These varied in sizes and significance. Smaller ditches contend little Fool’s Water-cress (*Apium nodiflorum*), Bramble (*Rubus fruticosus agg.*), Creeping Buttercup (*Ranunculus repens*) and Lady-fern (*Athyrium filix-femina*). Other larger drainage ditches were dominated by Duckweed (*Lemna sp.*) but also contained Hogweed (*Heracleum mantegazzianum*).

7.2.9 Dry meadow and grassy verges (GS2)

Dry meadow and grassy verges (GS2) primarily occurred on unmanaged land associated with roadside verges, paths and lands unmanaged for recreation or agriculture. This habitat type often merged between areas of recolonising bare ground, hedgerows, scrub and treelines.

These grasslands were typically overgrown, contained a high proportion of coarse grasses such as Cock's-foot (*Dactylis glomerata*), Bents (*Agrostis spp.*), False Oat-grass (*Arrhenatherum elatius*) and Purple Moor-grass (*Molinia caerulea*). The herb layer contained mainly tall growing or climbing herbs including common Hogweed (*Heracleum sphondylium*), Hedge Bindweed (*Calystegia sepium*), Bush Vetch (*Vicia sepium*) and Common Knapweed (*Centaurea nigra*). In wetter areas Bog Asphodel (*Narthecium ossifragum*) and Devil's-bit Scabious (*Succisa pratensis*) were commonly recorded.

Where disturbance was minimal or along the unkept banks of the industrial trainlines, species diversity was high in places including Silverweed (*Potentilla anserina*), St John's Wort (*Hypericum perforatum*), Selfheal (*Prunella vulgaris*), Common Bird's-foot Trefoil (*Lotus corniculatus*), Cat's-ear (*Hypochoeris radicata*). was often abundant. In wetter areas Bog Asphodel (*Narthecium ossifragum*) and Devil's-bit Scabious (*Succisa pratensis*) were commonly recorded. The dead stalks of Orchids were found in and along a number of verges. These could not be indemnified given the time of year but were likely common spotted orchids.

7.2.10 Recolonising Bare Ground

Fossit describes Recolonising bare ground ED3 as areas where bare or disturbed ground, derelict sites or artificial surfaces of tarmac, concrete or hard core have been invaded by herbaceous plants. Vegetation cover should be greater than 50% for inclusion in this category.

Recolonising bare ground was recorded throughout the study area along the trainline, at junctions on the edges of the bogs and around yards. Many of the plant species found within this habitat types were typical ruderals, or weed plants including Colt's Foot (*Tussilago farfara*), Nettle (*Urtica dioica*), Dandelion (*Taraxacum spp.*), Willow-herb (*Epilobium spp.*) and Ragwort (*Senecio spp.*). Some bare areas contained a lot of peat bog species including Heath Milkwort (*Polygala serpyllifolia*), Purple Moor-grass (*Molinia caerulea*), Cotton grasses (*Eriophorum spp.*) and Heathers (*Calluna vulgaris*) were noted in a number of areas. Species diversity in some areas of recolonising bare ground was quite high with Tormentil (*Potentilla erecta*), Silverweed (*Potentilla anserina*), St John's Wort (*Hypericum perforatum*), Yarrow (*Achillea millefolium*), Selfheal (*Prunella vulgaris*), Common Bird's-foot Trefoil (*Lotus corniculatus*) and Common Centaury (*Centaureum erythraea*). The remains of a number of Orchids were also noted these were likely Common Spotted Orchid (*Dactylorhiza fuchsii*).

7.2.11 Cutover bog (PB4)

The dominant habitat type surrounding much of the site. Cutover bogs are areas of bog where part of or most of the original mass of peat has been removed through turf cutting or other forms of peat extraction. Areas of cutover recorded were generally abandoned or exhausted cutover as little or no peat (relative to its original mass) remained. In many instances the bedrock under the original peat mass was visible. In other areas peat was seen at depths of over 2 meters. Cutover bog was generally recorded as a transitional habitat, or complex of habitats, that can include mosaics of bare peat and revegetating areas with woodland, scrub, heath, fen and or grassland communities. The nature of the recolonising vegetation was dependent on numerous factors including the frequency and extent of disturbance, hydrology, the depth of peat remaining, and the nature of the peat and the underlying substratum.

Standing water was present in drains, pools or excavated hollows. Some large areas of flooded cut over bog were recorded around the site and have begun to form complex wetland and wetland fringe habitat similar to fens, flushes and reed fringes.

To allow for a more accurate representation of this habitat type within the report Cutover Bog has been further separated into 4 categories. These categories generally follow the descriptions used in previous ecological studies carried out by Bord na Móna Ecologist. Habitats as described here have been adapted from the Bord na Móna future habitat mapping database. These have been slightly modified to better suit this report. The level of detail provided within these data bases was beyond that required for this report given that this project is not likely to significantly impact areas of recolonising cutover peat. See foot notes for corresponding habitat classifications.

Bare Cutover Bog (Bare PB4)²

Areas of recent disturbance where recolonisation has just begun or has not yet taken place. Bare peat accounts for over 80% of the area.

² Classified as bare peat on the Bord na Mona future habitat mapping database

Figure 1: Bare Peat area**Emerging grassland and heath on Cutover peat (PB4 (GS4, HH1)³**

A mosaic of areas of grassland usually composed of Purple Moor-grass (*Molinia caerulea*), Rushes (*Juncus effusus*, *J. acutiflorus*, *J. articulatus*, *J. inflexus*), Sedges (*Carex Spp*) and Heathers (*Calluna vulgaris*, *Erica spp*). Tree including Willows (*Salix sp.*) and Birch Downy Birch (*Betula pubescens*) are present but only as seedlings or juvenile trees.

Figure 2: Emerging grassland and heath on Cutover peat (PB4 (GS4, HH1)

³ Classified as Bog woodland, heathland, and/or degraded raised bog communities (WN7/WS1/PB1/HH1/HH3/PF2/GS3) on the Bord na Mona future habitat mapping database

Emerging Woodland Cutover Bog (WN7, GS4, HH1)⁴

These are areas of previously open grassland, heathland type cutover bog as described above. Bog woodland species are beginning to become dominant. Trees including Willows (*Salix sp.*) and Birch Downy Birch (*Betula pubescens*) abundant but not yet dominant.

Figure 3: Emerging Woodland Cutover Bog (WN7, GS4, HH1

**Bog woodland & wetland mosaic (WN7, FL, FS1, PF2, WN6)⁵**

This habitat type was commonly found within depressions over large areas of expansive cutover raised bog. These areas where complex mosaics of submerged or semi-submerged plants interspersed within open deeper water. Waters levels are likely to fluctuate greatly during the year. Willow (*Salix Spp*) commonly formed dense stands within this mix along with reed fringe species including Common Reed (*Phragmites australis*), Bulrush (*Typha latifolia*) and Reed Canary-grass (*Phalaris arundinacea*). These habitats were noted as important feeding and resting grounds for a wide range of wetland bird species.

⁴ Broadly corresponds to Bog woodland (WN7) dominated - with pockets of open habitats (PF2, GS, HH1) on the Bord na Mona future habitat mapping database

⁵ Bord na Mona future habitat mapping database

Figure 4: Bog woodland & wetland mosaic (WN7, FL, FS1, PF2, WN6)**Bog Woodland (WN7)**

This category includes woodlands of intact ombrotrophic bogs, bog margins and cutover bog. Bog woodland typically occurs on deep acid peat that is relatively well drained in the upper layers and is commonly associated with former turf cutting activity or drainage. It may also occur in areas of cutover bog where most of the peat has been removed. Downy Birch (*Betula pubescens*) and Willows (*Salix spp.*) usually dominated and often formed pure stands. In particularly well developed areas of bog woodland other trees and shrubs can including Holly (*Ilex aquifolium*), Rowan (*Sorbus aucuparia*), Scots Pine (*Pinus sylvestris*) and Oaks (*Quercus spp.*) were noted. Dwarf shrubs such as Ling (*Calluna vulgaris*) or Bilberry (*Vaccinium myrtillus*) were commonly found in the field layer of this habitat usually in association with Bracken (*Pteridium aquilinum*), Bramble (*Rubus fruticosus agg.*), Ivy (*Hedera helix*), Purple Moor-grass (*Molinia caerulea*) and Honeysuckle (*Lonicera periclymenum*).

7.2.12 Wet grassland (GS4)

Areas of wet grassland varied across the site. Significantly large areas of this habitat type were recorded surrounding the site and were associated with low intensity agriculture. These were generally dominated by Rushes (*Juncus effusus*, *J. acutiflorus*, *J. articulatus*, *J. inflexus*) and Sedges (*Carex Spp*). Grasses included Yorkshire-fog (*Holcus lanatus*) and Creeping Bent (*Agrostis stolonifera*). The herb component usually contained Creeping Buttercup (*Ranunculus repens*), Marsh Thistle (*Cirsium palustre*), Silverweed (*Potentilla anserina*), Meadowsweet (*Filipendula*

ulmaria), Water Mint (*Mentha aquatica*) and Horsetails (*Equisetum spp.*). Yellow Iris (*Iris pseudacorus*) dominated wet grassland was also recorded in a number of locations.

Table 3: Other Habitats noted around the site

Habitat Types	Fossit Code
Stone walls and other stonework	BL1
Buildings and artificial surfaces	BL3
Improved Grassland	GA1
Amenity Grassland	GA2
Dense bracken	HD1
Rich fen and flush	PF1
Ornamental/non-native shrub	WS3
Immature woodland	WS2

8 Habitats and Ecology by Route Section

To make this report more user-friendly and manageable route descriptions have been separated into 4 no. main sections based on the townlands through which the route passes. These are explained in a general north to south direction.

Table 4: Survey sections (See Appendix A for Maps)

Greenway Sections		Report Section
Section 1	Ballyloughan to Boughill	8.1
Section 2	Boughill to Derryhaun	8.2
Section 3	Derryhaun to Mosstown	8.3
Section 4	Mosstown to Gorteencalreen	8.4

For the purposes of describing the habitats and constraints along the route of the proposed Greenway each section was then further subdivided by chainages. A summary of habitats and constraints within each subsection is given in the table at the start of each section. This is followed by an overall description of the habitats and other ecological elements of each section. This section of the report should be read in conjunction with the associated habitat and ecological constraints maps document which is provided with this document. Photographs taken in each section are also provided in Appendix D.

8.1 Section 1: Ballyloughan to Boughill

Table 5: Ballyloughlan to Boughill

Map Sections	Ballyloughan to Boughill
Chainage	0000 to 10329, 0000a to 1065a, 0000b to 0890b
Map	Ballyloughan to Boughill Ecological Constraints & Habitats
General Habitat types on and surrounding the route	Buildings and artificial surfaces BL3 Improved Grassland GA1 Amenity Grassland GA2 Hedgerows WL1 Treelines WL2 Wet Grassland GS4

	Bog Woodland WN7 Cutover Bog PB4 Lowland Depositing River FW2 Drainage Ditches FW4 Scrub WS1 (Remnant) Raised bog PB1 Emerging grassland and heath on Cutover peat PB4 (GS4, HH1) Emerging Woodland Cutover Bog PB4 (GS4, HH1, WN7) Bog woodland & wetland mosaic PB4 (WN7, FL, FS1, PF2, WN6)
Ecological Constraints	Large mature trees to be retained where possible Invasive Species (not third schedule) Fly-tipping
Ecological Sensitivities	Rivers crossed by route. Willow woodland, (remnant) raised bog, wet grassland and mixed woodland close to route but outside the Zone of Influence.

This section begins on the L50011 off the N5, approximately 3km to the west of Longford town centre. A little over 1.5km of the route following this is on a minor road – a much smaller cul-de-sac laneway. The L50011 laneway is flanked by hedgerows with mature trees – predominantly Ash and Sycamore. The invasive species Snowberry was noted here also. Later, Conifer plantations and mature bog woodland and wet grassland boarder the route. Approximately 1.6km from the N5 the route turns west onto a bog road.

Wet grassland habitat was noted within the route and on either side Birch-dominated bog woodland habitat occurs. The route crosses over a section of recently worked cutover bog with little vegetation succession. The route then joins the Bord na Móna railway line. The habitat within the immediate route corridor here does not readily conform to habitat classification but it is broadly artificial surface and recolonising bare ground. In some areas (where the track has been longer disused) the vegetation diversity is quite high with species such as Purple Moor Grass, Colt's-foot, Yarrow, Silverweed and Self-heal. Orchids (believed to be Common Spotted Orchid) were also noted.

The route then passes through areas of cutover bog with bare peat, the edges of which having primary colonisers. The route then passes through bog woodland and scrub habitat with Birch

and Willow being the dominant species. There are then conifer plantations to the north of the route. Pine Marten spraints were noted in several locations

The route crosses over the Fallan River (a tributary of the Camlin) via a substantial bridge. The habitat either side of the route is scrub and bog woodland. The route is crossed by a local road which is carried out over the railway line by a mass concrete bridge of low bat potential. The route widens passing through a Bord na Móna railway yard before crossing an open section of cutover bog. Some raised bog potentially capable of regeneration was noted to the south of the route.

The route then turns to the north and runs adjacent to the Royal Canal from which it is separated by a thin strip of woodland comprised of mainly of Birch, Willow and Ash. The route crosses the Royal Canal via a lifting bridge before entering another section of cutover bog. The railway line is banked up high over existing bogland here and it was noted that a mosaic of habitats here include bog woodland and a range of wetland habitats with some substantial areas of open water.

The route has additional spurs that include over a kilometre of recently laid crushed stone which passes through a bog woodland and wetland mosaic as described above. Another spur runs through cutover bog with bare peat to the north and the woodland/wetland mosaic to the south. Mature Birch treelines were noted here.

On the main route, more mature scrub has developed around the railway line in places. A section of wet woodland which may correspond to the Annex I habitat type was noted to the south of and outside the proposed route. The route crosses the Ballynakill River at two locations. The river here appears to have been substantially altered here and there were large drainage ditches adjoining this.

8.2 Section 2: Boughill to Derryhaun

Table 6: Boughill to Derryhaun

Map Sections	Boughill to Derryhaun
Chainage	0000 to 13500, 0000 – 2700a, 0000b to 1120b & 0000c to 3000c, 0000d – 0460d
Map	Boughill to Derryhaun Ecological Constraints & Habitats
General Habitat types on and surrounding the	Buildings and artificial surfaces BL3 Recolonising bare ground BL ED3

route	Improved Grassland GA1 Hedgerows WL1 Treelines WL2 Wet Grassland GS4 Bog Woodland WN7 Cutover Bog PB4 Lowland Depositing River FW2 Drainage Ditches FW4 Scrub WS1 (Remnant) Raised bog PB1 Emerging grassland and heath on Cutover peat PB4 (GS4, HH1) Emerging Woodland Cutover Bog PB4 (GS4, HH1, WN7) Bog woodland & wetland mosaic PB4 (WN7, FL, FS1, PF2, WN6)
Ecological Constraints	Large mature trees to be retained where possible Invasive Species (not third schedule) Rubbish
Ecological Sensitivities	Rivers crossed by route. Willow woodland, (remnant) raised bog, wet grassland and mixed woodland close to route but outside the Zone of Influence.

This route section begins on an existing roadway – a rural cul-de-sac. The route is flanked by mature treelines and broadleaved woodland. The species of mature trees here include Ash and Hazel. The invasive species Snowberry was also noted as being present in the boundaries here. The route crosses a number of drainage ditches.

After around 1km, the route passes through open countryside with fields of agricultural grassland bounded by hedgerows and treelines with banks and drainage ditches. Some houses and yards were recorded here. One of these was noted as having potential bat roost habitat. Later, another invasive species – Cherry Laurel – was recorded in the mature high-sided roadside hedgerow.

Greenway construction works have begun for a significant portion of this section. Any vegetation has been cleared and crushed rock surface has been laid for around 3km. An area of birch-dominated bog woodland is emerging to the north of the route. The completed works

here include a new bridge over the Kilnacarrow River. The route passes alongside the edge of an extensive area of bare peat. To the west there is an extensive area of mixed conifer plantation. Species noted here were Sitka Spruce and Scots Pine. There is also some broadleaved plantation here.

A separate spur takes the proposed route along Bord na Móna railway line through mixed conifer and broadleaved woodland with several wet ditches and treelines. The railway line then crosses the River Shannon via a substantial bridge. A Kingfisher (an Annex II species) was recorded here. The route continues on a raised bank with agricultural grasses dominating before turning westward and through wet grassland and cutover bog.

The main route continues through recolonising bare ground which is flanked by mixed conifer and broadleaved woodland as well as hedgerows which separate the railway line from wet grassland to the south. The route then again passes through an extensive area of bare peatland. Later, bog woodland appears to the north of the line. An additional spur brings the route to the Bord na Móna Mount Dillon Yard and bare peat is the dominant habitat type here.

The route between this and the power station in Lanesborough is bound by mature treelines and hedgerows. Large drainage ditches flank the route also. An area of wet woodland occurs to the west of the route. The proposed route approaching the power station is a wide area of built ground (crushed rock) with variable recolonisation by herb species. A spur connecting the route to Lanesborough via the N63 at the Rathcline GAA ground was also noted in this area.

Chainage 0000e to 6013e moves along an old trainline with scrubby hedgerows separating the route from areas of cutover bog and recolonising cutover bog. Whooper Swan and Golden Plover were both recorded adjacent to the route in areas of open water and recolonising cutover bog. A number of areas of remnant raised bog were recorded north of this route section. Towards the end of this section (south of the Mount Dillon Bord na Móna Depot) a number of large drains and ditches were recorded that were likely formerly used to drain this area of bog.

8.3 Section 3: Derryhaun to Mosstown

Table 7: Derryhaun to Mosstown

Map Sections	Derryhaun to Mosstown
Chainage	0000 to 10003, 0000a to 16400a, 0000b to 0924b, 0000c to 1016c
Maps	Derryhaun to Mosstown Ecological Constraints Maps

General Habitat types on and surrounding the route	Buildings and artificial surfaces BL3 Recolonising bare ground BL ED3 Improved Grassland GA1 Hedgerows WL1 Treelines WL2 Wet Grassland GS4 Bog Woodland WN7 Cutover Bog PB4 Lowland Depositing River FW2 Drainage Ditches FW4 Scrub WS1 (Remnant) Raised bog PB1 Emerging grassland and heath on Cutover peat PB4 (GS4, HH1) Emerging Woodland Cutover Bog PB4 (GS4, HH1, WN7) Bog woodland & wetland mosaic PB4 (WN7, FL, FS1, PF2, WN6)
Ecological Constraints	Evidence of Pine Marten & Badger activity Raptor Hunting Area
Ecological Sensitivities	Mammal habitat to be protected, , (remnant) raised bog, Invasive species occurring.

This route begins at the level crossing of the Bord na Móna railway line north-east of Derryhaun Estate.

The route starts on bare peat which is quickly recolonised by calcareous grassland. The next section runs north along a raised bank, bordered by broadleaved woodland and a patch of raised bog. Multiple mammal trails were observed here along with badger faeces and a live Irish Hare. From here it runs the bog perimeter until it meets the main road. The route runs along the southern side of the R398 road towards Longford. The route is mostly bounded by agricultural grassland (including drainage ditches), residential areas and cutover bog. A consistent hedge/treeline runs along the road on both sides, occasionally broadening into woodland. Several mammal trails were found crossing the road.

The invasive species cherry laurel (*Prunus laurocerasus*), snowberries (*Symphoricarpos spp.*) and old man's beard (*Clematis vitalba*) were found, however none of these are third schedule. This

section contained a number of excellent mature trees, ash (*Fraxinus excelsior*), beech (*Fagus sylvatica*) and hawthorn (*Crataegus mongyna*), that should be retained where possible.

The route leaves the road at 7300a and follows the old rail line south into the bog. The area immediately surrounding the track was composed of rough grassland bordered by scrub and a willow-dominated treeline. Some patches of devil's bit scabious (*Succisa pratensis*) were found which are important to the marsh fritillary (*Euphydryas aurinia*), protected under annex II of the European Union Habitats and Species Directive, which has been recorded within 15 km of the area. Both badger (*Meles meles*) and pine marten (*Martes martes*) droppings were found in this section.

Section b branches off at 8100a and runs through agricultural grassland until it meets the canal at 0912b. A raised limestone mound with a mixed treeline runs along south of the first half of the proposed route and a field drain runs the entire way along the north side.

From the point where section b joins, the main route continues south. The rail line is predominantly grassland with a continuous border of gorse and patches of bracken. The route continues like this, passing an area of bog woodland on the east, with agricultural grassland on the west, until it meets and moves on to cutover bog at 9400a. Multiple badger faeces and mammal trails were found along this section. The route runs directly through this area of cutover bog which is lightly recolonising. One area of wet flushes with high ecological significance was observed adjacent to the track. It is recommended that the conservation of these flushes be included as a part of the bog restoration plan. Several pellets from an unidentified bird of prey were found on this strip of bog along with one instance of badger faeces. On the south side of the bog, the rail line turns to the east and continues straight until 16300a. The track is predominantly bare ground, recolonising bare ground and grassland, bordered to the north by some raised bog and bog woodland.

The track runs south along a gravelled rail line, surrounded by cutover bog. The route is bordered by bracken scrub with occasional gorse. The route ends in a wooded area, just north of the northern Corlea Bog car park.

8.4 Section 4: Mosstown to Gorteencalreen

Table 8: Mosstown to Gorteencalreen

Map Sections	Mosstown to Gorteencalreen incl Corlea Trackway
Chainages	0000 to 13300, 0000a to 3400a, 0000b to 2500b

Maps	Mosstown to Gorteencalreen Ecological Constraints Maps
General Habitat types on and surrounding the route	<p>Buildings and artificial surfaces BL3</p> <p>Improved agricultural grassland GA1</p> <p>Improved agricultural grassland/Wet grassland GA1/GS4</p> <p>Amenity Grassland GA2</p> <p>Hedgerows WL1</p> <p>Treelines WL2</p> <p>Heath HH1</p> <p>Heath/Scrub HH1/WS1</p> <p>Wet Grassland GS4</p> <p>Bog Woodland WN7</p> <p>Cutover bog/Bare peat PB4</p> <p>Eroding Upland Stream FW1</p> <p>Drainage Ditches FW4</p> <p>Drainage ditches/Eroding rivers FW4/FW1</p> <p>Scrub WS1</p> <p>(Remnant) Raised bog PB1</p> <p>Bog woodland/Mixed broadleaved woodland WN7/WD1</p> <p>Bog woodland/Scrub WN7/WS1</p> <p>Recolonising bare ground/Buildings and artificial surfaces BL3/ED3</p> <p>Buildings and artificial surfaces/Dense bracken BL3/HD1</p> <p>Conifer Plantation WD4</p> <p>Emerging grassland and heath on Cutover peat PB4 (GS4, HH1)</p> <p>Emerging Woodland Cutover Bog PB4 (GS4, HH1, WN7)/WS1</p> <p>Emerging woodland on cutover bog/Scrub</p> <p>Bog woodland & wetland mosaic PB4 (WN7, FL, FS1, PF2, WN6)</p>
Ecological Constraints	<p>Evidence of Pine Marten & Badger Activity</p> <p>Wet flush areas</p> <p>Invasive Species</p>
Ecological Sensitivities	<p>Wetland habitats to be protected, , (remnant) raised bog, Minimise disturbance to mammal habitat</p>

This section starts at the railway crossing north east of Derryhaun estate and continues north along the old rail line. This route follows the old rail line north over until it reaches an area of cutover bog where it branches off the main track and heads east, passing recolonising cutover bog before turning south. Some badger faeces and several mammal trails were observed on the initial section of calcareous grassland.

As the route turns south, there is a collection of large pools fed by a drain that continues adjacent to the path for the next few kilometres. There is some light bog rehabilitation around the ponds. The route runs through wet and rough grassland until it meets a local road. Numerous mammal trails were found here. At 2+550 the route turns back on itself and follows a drain that runs through private farmland (it should be noted that this could be a mapping error as it seems unnecessary and would be difficult to develop). The route is predominantly agricultural grassland with some light to medium scrub until it re-joins with the old rail line.

The rail line here (still in use) continues south away from the cutover bog it is bordered on both sides by deciduous woodland and mature bog woodland, both being excellent examples of these habitats.

There is also a patch of raised bog in very good condition, which should be avoided if possible. Some badger droppings and mammal trails were noted in this section. At the bottom of the route (running west) there is a large gravel path which the route follows, passing more bog woodland, raised and cutover bog until it meets a main road under a mixed treeline.

This section starts on gravel path southwest of Derryhaunmore cross and continues south. The habitat along the route is primarily rough grassland with patches of bare ground and scrub.

There is a large construction area on the west of the route at 0300 with a small area of recolonised wetland contained within. The route is initially bordered by a drainage ditch and a large area of well-established bog woodland, which can be seen from satellite photographs. Some badger droppings were found on this section.

After this it runs around the edge of recovering/recolonising cutover bog for several kilometres. Occasional scrub and mammal trails were present, with some bog woodland and broadleaved woodland at the borders of the bog. An existing gravel road runs parallel to the rail track for a large part of the middle section, at times bordered by a large spoil heap and drain.

An established reed swamp occurs where the route meets a canal at 7710, from here the route continues along the northern side of an area of cutover bog until it meets a large area of wet grassland. This wet grassland was an excellent and largely undisturbed habitat, ideal for birds,

and care should be taken during development. This area of wetland connects to the main road via a small wooded lane, featuring multiple mammal trails, which the route follows. Once it meets the main road, the route runs south for several hundred metres past broadleaved woodland, plantation and agricultural grassland.

8.5 Habitats Evaluation

Within the broader study area, a diverse range of habitats occur. However, within the proposed route corridor, a much more limited range of habitats occur. This is owing to the highly modified nature of the railway line and path/laneway/roadway proposed for development as Greenway. There are no designated conservation areas within the proposed route. The route crosses a number of watercourses from very minor ditches and streams to major rivers. Outside of the main proposed route, there is a large homogeneity to much of the surrounding habitats, being cutover bog with exposed peat. However, where extraction has ceased, these peatlands are reverting to a range of habitat types that will be of increasing habitat value, particularly where Bord na Móna rehabilitation works are ongoing.

The table below gives a detailed summary of the main habitat types found within the survey area.

Table 9: Ecological significance of habitats within the site.

Ecological feature	Fossitt code	Evaluation	Rationale
Cutover & Cutaway Bog	PB4	Moderate Local	A degraded peatland habitat type but of increasing importance as rehabilitation measures applied.
Treelines	WL2	High Local	Mature treelines some containing notable mature trees.
Hedgerows	WL1	High Local	Ecological corridor often containing notable mature trees.
Wet woodlands	WN6	High local value and regional importance	Important for a number of wetland plants but also birds, reptiles and mammals.
Broadleaved	WD1	Moderate local, low	Areas of value to local wildlife.

woodland		regional	
Lowland rivers	FW2	High Local to High Regional	Ecological corridors.
Drainage ditches	FW4	Low Local	Small areas supporting wetland vegetation some of local importance to wildlife
Wet grassland	GS4	Moderate local in general. Higher where it forms part of a mixed wetland habitat mosaics	Small areas of semi-natural habitat or part of broader wetland areas.
Reed Swamp	FS1	High Local	Important for a range of species.
Dry or Improved Grasslands	GA1	Low Local	Small areas of generally species poor dry meadow grassland and grassy verges. Often highly modified.
Recolonising bare ground	ED3	Low Local	Supports generally common vegetation
Scrub	WS1	Moderate Local	Important cover for birds. Low diversity overall
Buildings and artificial surfaces	BL3	Low Local	None or limited vegetation
Mixed Conifer Woodland	WD3	Moderate Local, Moderate Regional	No significance for plants and invertebrates but important for Red Squirrel and Pine Marten
Conifer Plantation	WD4	Moderate Local	No significance for plants and invertebrates but important for Red Squirrel and Pine Marten
Mixed broadleaved/conifer woodland	WD2	Moderate Local, Moderate Regional	Low to moderately good for plants and invertebrates. Commonly important for Red Squirrel and Pine

			Marten
Bog Woodland	WN7	High Local	Extensive woodland habitat. Value will increase as matures.

A detailed evaluation of the major and most ecologically significant habitats types found during the survey is given below.

8.5.1 Woodland habitats

Much of the woodland habitat in the study area is composed of conifer plantation. Conifer plantations particularly those of Sitka Spruce, Lodgepole Pine, Norway Spruce and Larches were generally much lower in overall biodiversity than other habitats within the study area. A lack of light and changes in soil pH brought about by their dense canopies and acidic needles produces sub-optimal conditions for other plant life in general. In areas where these woodlands were in thin strips and were flanked by deciduous vegetation, this would add to their overall biological value. These areas of some ecological value for birds. Signs of Pine Martens were commonly found within or close to these areas indicating that they provide at the very least some supplementary food sources for these species.

Mixed conifer woodlands with species such as Larch and Scots Pine were also recorded throughout the site. These conifer woodlands unlike the above areas generally allow more light into their understory where small trees, shrubs and ground flora was able to flourish. These areas will also naturalise with or without management.

Bog Woodland was the next most extensive woodland type occurring. This woodland type was generally dominated by Downy Birch, with few other species. Scots Pine and Willows also occurred. This is a locally important woodland type but will tend to increase in ecological importance as it matures and becomes more extensive.

It is not envisaged that any woodland type will be impacted upon by the proposed route.

Other woodland habitat types include: Scrub (WS1), Immature Woodland (WS2), Mixed Broadleaved woodland (WD1) and some Wet willow-alder-ash woodland (WN6). Areas of excellent Mixed Broadleaved woodland were rare and were noted well away from the route.

Areas of Wet willow-alder-ash woodland (WN6) were occasionally found around the site practically in all low-lying areas prone to flooding or inundation. These were in many instances

found within a mosaic of habitats including cutover bog. Floristically these areas may be the most species diverse and are likely to provide habitat to a wide range of invertebrate and bird species. These areas are generally outside the boundary of the project and should not be impacted by the proposed works.

Scrub woodland formed an important component of the woodlands within the study area. Scrub woodland here is a transitional habitat type brought on by low levels of grazing, wind blow or recolonisation of recently cleared ground. Scrub can provide an important nesting and feeding ground for birds and invertebrates and should not be cleared during the bird nesting season.

8.6 Grassland habitat types

Grasslands were generally found in areas that were mixed use, e.g. had an amenity purpose, along the fringes of woodlands and wetlands or forming thin strips along existing footpaths. Grassland habitat types recorded included Dry meadow and grassy verges (GS2), Wet Grassland (GS4) and Improved Grassland (GA1).

Wet Grassland areas tend to be among the more ecologically diverse habitats in terms of flowering plant species. Wet Grassland areas also are vulnerable to disturbance and as such should be avoided where possible. Other grassland types were generally species-poor as limited grazing pressure has led to the dominance of coarse grass species limiting overall species diversity. The exception to this is when these grasslands were found as part of a habitat mosaics like those where they were found interspersed with wetland habitats and areas of woodland such as bog woodland.

8.7 Wetland habitat types

Given the nature of the site, wetland habitats types were common, these included Lowland Depositing River (FW2), Reed and Large Sedge Swamps (FS1) and Drainage Ditches (FW4). Wetland habitats were generally recorded as being of high species diversity and in many instances formed an important semi-aquatic boundary between the reservoir and the terrestrial habitat types. Wetland habitats are also important features for a number of wintering migratory birds for which the rehabilitating peatlands provide an important refuge. Wetland areas should be avoided where possible.

8.8 Peatland habitat types

By far the greater majority of the peatland habitat types occurring would conform to the broad description given by Fossitt (2000) of Cutover bog (PB4). However, it is acknowledged that while the majority of the former raised bog that is cutover or cutaway would conform to this, there are several habitat types occurring within this that do not readily conform in this way. These include areas of remnant bog (formerly PB1), areas of wet heath (HH3) and dry siliceous heath (HH1). Also within the wider cutover bog there are areas of scrub and bog woodland (as described above) and wet ditches.

9 Ecological Impact Assessment

9.1 Introduction and Context

The impacts which may be expected from the development of the proposed route are assessed below. These possible impacts have been assessed under the CIEEM (2018) and the National Roads Authority guidelines (NRA, 2006). Criteria for assessment of duration of impacts used (EPA 2002). These provide guidance on assessing impact significance upon features of sites proposed for works. Impact significance must be given in context of their respective ecological value of the site and features under study.

The ‘ecological value’ of an area or feature therefore is defined with reference to geographical context. That is, whether it is of value locally, regionally, nationally or internationally. This is assessed by ecologists on reviewing survey outcomes. Key criteria are the presence of designated sites, the site or feature containing protected species or areas of high biodiversity. The criteria for ecological value are given in Table 10, below:

Table 10: Ecological Value Criteria

Ecological Value	Criteria
International	<p>‘European Sites’ including Special Areas of Conservation (SAC) & Special Protection Areas (SPA).</p> <p>Sites that satisfy the criteria for designation as a ‘European Site’ (see Annex III of the Habitats Directive, as amended).</p> <p>Features essential to maintaining the coherence of the Natura 2000 Network.</p> <p>Sites containing ‘best examples’ of the habitat types listed in Annex I of the Habitats Directive.</p> <p>Resident or regularly occurring populations (assessed to be important at the national level) of the following:</p> <p>Species of bird, listed in Annex I and/or referred to in Article 4(2) of the Birds Directive; and/or</p> <p>Species of animal and plants listed in Annex II and/or IV of the Habitats Directive.</p> <p>Ramsar Sites</p>

Ecological Value	Criteria
	<p>World Heritage Sites (Convention for the Protection of World Cultural & Natural Heritage, 1972).</p> <p>Sites hosting significant species populations under the Bonn Convention</p> <p>Sites hosting significant populations under the Berne Convention</p>
National	<p>Areas of Special Scientific Interest (ASSI) or Natural Heritage Area (NHA).</p> <p>National Nature Reserves (NNR).</p> <p>Marine Nature Reserves (MNR).</p> <p>Area of Outstanding Natural Beauty (AONB).</p> <p>Refuge for species protected under the Wildlife (Northern Ireland) Order 1985 (as amended).</p> <p>Undesignated sites fulfilling the criteria for designation as an ASSI; NNR; MNR; and/or refuge for species protected under the Wildlife (Northern Ireland) Order 1985 (as amended).</p> <p>Resident or regularly occurring populations (important at the national level) of the following:</p> <p>Species protected under Wildlife (Northern Ireland) Order 1985 or Wildlife Act 1976, as amended); and/or</p> <p>Species listed on the relevant Red Data list.</p> <p>Sites containing 'viable areas' of the habitat types listed in Annex I of the Habitats Directive.</p>
Regional	<p>Sites of Local Nature Conservation Importance (SLNCI).</p> <p>Areas subject to a Tree Preservation Order.</p> <p>Resident or regularly occurring populations (assessed to be important at the Regional level) of the following:</p> <p>Species of bird, listed in Annex I and/or referred to in Article 4(2) of the Birds Directive;</p> <p>Species of animal and plants listed in Annex II and/or IV of the Habitats Directive;</p> <p>Species protected under the Wildlife (Northern Ireland) Order 1985 (as amended); and/or</p>

Ecological Value	Criteria
	<p>Species listed on the relevant Red Data list.</p> <p>Sites containing areas of the habitat types listed in Annex I of the Habitats Directive that do not satisfy the criteria for valuation as of International or National importance.</p> <p>Regionally important populations of species or viable areas of semi-natural habitats or natural heritage features identified in the National or Local Biodiversity Action Plan (BAP), if this have been prepared.</p> <p>Sites containing semi-natural habitat types with high biodiversity in a regional context and a high degree of naturalness, or populations of species that are uncommon within the region.</p> <p>Sites containing habitats and species that are rare or are undergoing a decline in quality or extent at a national level.</p>
Local	<p>Locally important populations of priority species or habitats or features of natural heritage importance identified in the Local BAP, if this has been prepared;</p> <p>Resident or regularly occurring populations (assessed to be important at the Local level) of the following:</p> <p>Species of bird, listed in Annex I and/or referred to in Article 4(2) of the Birds Directive;</p> <p>Species of animal and plants listed in Annex II and/or IV of the Habitats Directive;</p> <p>Species protected under the Wildlife (Northern Ireland) Order 1985 (as amended); and/or</p> <p>Species listed on the relevant Red Data list.</p> <p>Sites containing semi-natural habitat types with high biodiversity in a local context and a high degree of naturalness, or populations of species that are uncommon in the locality;</p> <p>Sites or features containing common or lower value habitats, including naturalised species that are nevertheless essential in maintaining links and ecological corridors between features of higher ecological value</p>

Ecological Value	Criteria
	<p>Sites containing small areas of semi-natural habitat that are of some local importance for wildlife;</p> <p>Sites or features containing non-native species that are of some importance in maintaining habitat links.</p>

Ecological Impact Assessment must also consider the significance of effects that may be expected arising from a proposed development. CIEEM guidelines (2018) define a significant effect as:

“an effect that either supports or undermines biodiversity conservation objectives for ‘important ecological features’... or for biodiversity in general. Conservation objectives may be specific (e.g. for a designated site) or broad (e.g. national/local nature conservation policy) or more wide-ranging (enhancement of biodiversity). Effects can be considered significant at a wide range of scales from international to local”.

It also states that:

“an effect that is sufficiently important to require assessment and reporting so that the decision maker is adequately informed of the environmental consequences of permitting a project. A significant effect is a positive or negative ecological effect that should be given weight in judging whether to authorise a project: it can influence whether permission is given or refused and, if given, whether the effect is important enough to warrant conditions, restrictions or further requirements such as monitoring”.

The criteria for assessment of significance of effects is given in the following table. It should be noted that significant effects may also include beneficial effects.

Table 11: Criteria for Assessing Significance of Effects

Impact Significance		Criteria
Significant Negative Effect	Major Adverse	<p>Loss of, permanent damage to or adverse impact on any part of a site of international or national importance;</p> <p>Loss of a substantial part or key feature of a site of regional importance;</p> <p>Loss of favourable conservation status (FCS) of a legally protected species;</p> <p>Loss of or moderate damage to a population of nationally rare or scarce species.</p>
	Moderate Adverse	<p>Temporary disturbance to a site of international or national importance, but no permanent damage;</p> <p>Loss of or permanent damage to any part of a site of regional importance;</p> <p>Loss of a key feature of local importance;</p> <p>A substantial reduction in the numbers of legally protected species such that there is no loss of FCS but the population is significantly more vulnerable;</p> <p>Reduction in the amount of habitat available for a nationally rare or scarce species, or species that are notable at a regional or county level.</p>
No Significant Effect	Minor Adverse	<p>Temporary disturbance to a site of regional value, but no permanent damage;</p> <p>Loss of, or permanent damage to, a feature with some ecological value in a local context but that has no nature conservation designation;</p> <p>A minor impact on legally protected species but no significant habitat loss or reduction in FCS;</p> <p>A minor impact on populations of nationally rare or scarce species or species that are notable at a regional or county level.</p>

Impact Significance		Criteria
	Negligible	<p>No impacts on sites of international, national or county importance;</p> <p>Temporary disturbance or damage to a small part of a feature of local importance;</p> <p>Loss of or damage to land of negligible nature conservation value;</p> <p>No reduction in the population of legally protected, nationally rare, nationally scarce or notable (regional level) species on the site or its immediate vicinity.</p> <p>Beneficial and adverse impacts balance such that resulting impact has no overall affect upon feature.</p>
	Minor Beneficial	A small but clear and measurable gain in general wildlife interest, e.g. small-scale new habitats of wildlife value created where none existed before or where the new habitats exceeds in area that habitats lost.
Significant Positive Effect	Moderate Beneficial	Larger new scale habitats (e.g. net gains over 1 ha in area) created leading to significant measurable gains in relation to the objectives of biodiversity action plans.
	Major Beneficial	Major gains in new habitats (net gains of at least 10 ha) of high significance for biodiversity being those habitats, or habitats supporting viable species populations, of national or international importance cited in Annexes I and II of the habitats Directive or Annex I of the Birds Directive.

The duration of impact must also be considered when assessing overall ecological impacts. Criteria for assessment of duration of impacts uses (EPA 2002), the following terms are defined when quantifying duration:

- Temporary: up to 1 year
- Short-term: from 1-7 years
- Medium-term: 7-15 years

- Long-term: 15-60 years
- Permanent: over 60 years

The likelihood of impacts should also be defined. Assessment of likelihood of impact followed CIEEM guidelines. These assesses likelihood as follows:

- Almost Certain: probability estimated at greater than 95%
- Probable or Likely: probability estimated between 50% and 95%
- Unlikely: probability estimated between 5% and 50%
- Extremely Unlikely: probability estimated at less than 5%

In the case of the development being considered, most effects may be defined as likely as much of the route is known.

The following section gives the evaluation of habitat areas encountered within the scheme. These are given per section and per habitat type. A rationale for selection is also given.

9.2 MSWP Greenway Habitat Evaluation

Within the MSWP Greenway study area a diverse range of habitats occur with some habitats providing important ecological corridors and resources for a range of plant and animal species.

The quality or sensitivity of the habitats varies due to degree of species richness, the presence or absence native and degree of degradation or the presence of notable plant or animal species.

The more valuable of these areas in terms of biodiversity are defined as Ecologically Sensitive Areas (ESAs). These are shown in the Maps and Appendix A and listed in Table 12.

Table 12: Ecologically Sensitive Areas recorded within the survey area.

id	Name	Section	Nearest Chainage Marker
1	River Crossing	Ballyloughan to Boughill	5100 - 5200
2	Remnant Raised Bog	Ballyloughan to Boughill	4950 - 5150
3	Remnant Raised Bog	Ballyloughan to Boughill	3700
4	Remnant Raised Bog	Ballyloughan to Boughill	2600
5	Remnant Raised Bog	Ballyloughan to Boughill	6400 - 6950
6	Remnant Raised Bog	Ballyloughan to Boughill	2600 - 2800
7	Wet willow ash alder woodland	Ballyloughan to Boughill	10100 - 10500
8	River Crossing	Ballyloughan to Boughill	0800 - 1100
9	River Crossing	Ballyloughan to Boughill	1500 - 1600
10	River Crossing	Ballyloughan to Boughill	5700 - 5900
11	River Crossing	Ballyloughan to Boughill	4000 - 4300
12	Remnant Raised Bog	Boughill to Derryhaun	0000a - 0100a

13	Remnant Raised Bog	Boughill to Derryhaun	1600a - 1900a
14	Remnant Raised Bog	Boughill to Derryhaun	11700 - 12500
15	Remnant Raised Bog	Boughill to Derryhaun	5250 - 5600
16	River Crossing	Boughill to Derryhaun	1950a - 2050a
17	River Crossing	Boughill to Derryhaun	0850b - 1200b
18	River Crossing	Boughill to Derryhaun	5800 - 5950
19	River Crossing	Boughill to Derryhaun	9800 - 10100
20	Remnant Raised Bog	Derryhaun to Mosstown	8200 - 8500
21	Remnant Raised Bog	Derryhaun to Mosstown	11900a
22	Remnant Raised Bog	Derryhaun to Mosstown	0500a - 0700a
23	Remnant Raised Bog	Derryhaun to Mosstown	10400a - 10800a
24	Remnant Raised Bog	Derryhaun to Mosstown	3400
25	Remnant Raised Bog	Derryhaun to Mosstown	1800
26	Remnant Raised Bog	Derryhaun to Mosstown	0100a
27	Remnant Raised Bog	Derryhaun to Mosstown	4100a
28	Remnant Raised Bog	Derryhaun to Mosstown	5300a
29	Remnant Raised Bog	Derryhaun to Mosstown	4250
30	Remnant Raised Bog	Derryhaun to Mosstown	2300a
31	Remnant Raised Bog	Derryhaun to Mosstown	5300 - 5500
32	Remnant Raised Bog	Derryhaun to Mosstown	5400 - 6100
33	Remnant Raised Bog	Derryhaun to Mosstown	6300 - 6400
34	Remnant Raised Bog	Derryhaun to Mosstown	7000 - 7600
35	Remnant Raised Bog	Derryhaun to Mosstown	3000 - 3200
36	Remnant Raised Bog	Derryhaun to Mosstown	8600 - 9100
37	Remnant Raised Bog	Derryhaun to Mosstown	1600a - 1850a
38	Remnant Raised Bog	Derryhaun to Mosstown	13400a - 13600a
39	Remnant Raised Bog	Derryhaun to Mosstown	9700a - 9900a
40	Remnant Raised Bog	Derryhaun to Mosstown	10600a - 11200a
41	Remnant Raised Bog	Mosstown to Gorteencalreen	1300a - 1600a
42	Remnant Raised Bog	Mosstown to Gorteencalreen	1900b - 2000b
43	Remnant Raised Bog	Mosstown to Gorteencalreen	900
44	Remnant Raised Bog	Mosstown to Gorteencalreen	9800 - 9100
45	Remnant Raised Bog	Mosstown to Gorteencalreen	9200
46	Remnant Raised Bog	Mosstown to Gorteencalreen	0100a - 0300a
47	Remnant Raised Bog	Mosstown to Gorteencalreen	5600
48	Remnant Raised Bog	Mosstown to Gorteencalreen	1100 - 1300
49	Remnant Raised Bog	Mosstown to Gorteencalreen	2750a - 3000a
50	Remnant Raised Bog	Mosstown to Gorteencalreen	5600
51	Remnant Raised Bog	Mosstown to Gorteencalreen	2300
52	Remnant Raised Bog	Mosstown to Gorteencalreen	2350 - 2750
53	Remnant Raised Bog	Mosstown to Gorteencalreen	0400 - 0500
54	Remnant Raised Bog	Mosstown to Gorteencalreen	0200 - 0350
55	River Crossing	Mosstown to Gorteencalreen	1400 - 2000

56	River Crossing	Mosstown to Gorteencalreen	3350 - 3600
57	River Crossing	Mosstown to Gorteencalreen	7600 - 7900
58	River Crossing	Mosstown to Gorteencalreen	11500 -11600

Tables 13 to 20 below summarise the conservation evaluation for habitats and conservation interests found within the MSWP Greenway study area. Remnant raised bog was found to be widespread throughout the survey area but does not occur with the proposed route area.

9.2.1 Conservation evaluation: Section 1: Ballyloughlan to Boughill

Table 13: Conservation Evaluation: Section 1: Ballyloughlan to Boughill

BALLYLOUGHAN TO BOUGHILL			
Ecological feature	Fossitt code	Evaluation	Rationale
Cutover & Cutaway Bog	PB4	Moderate Local	A degraded peatland habitat type but of increasing importance as rehabilitation measures applied.
Treelines	WL2	High Local	Mature treelines some containing notable mature trees.
Hedgerows	WL1	High Local	Ecological corridor often containing notable mature trees.
Wet woodlands	WN6	High local value and regional importance	Important for a number of wetland plants but also birds, reptiles and mammals.
Broadleaved woodland	WD1	Moderate local, low regional	Areas of value to local wildlife.
Lowland rivers	FW2	High Local to High Regional	Ecological corridors.

Drainage ditches	FW4	Low Local	Small areas supporting wetland vegetation some of local importance to wildlife
Wet grassland	GS4	Moderate local in general. Higher where it forms part of a mixed wetland habitat mosaics	Small areas of semi-natural habitat or part of broader wetland areas.
Reed Swamp	FS1	High Local	Important for a range of species.
Dry or Improved Grasslands	GA1	Low Local	Small areas of generally species poor dry meadow grassland and grassy verges. Often highly modified.
Recolonising bare ground	ED3	Low Local	Supports generally common vegetation
Scrub	WS1	Moderate Local	Important cover for birds. Low diversity overall
Buildings and artificial surfaces	BL3	Low Local	None or limited vegetation
Mixed Conifer Woodland	WD3	Moderate Local, Moderate Regional	No significance for plants and invertebrates but important for Red Squirrel and Pine Marten
Conifer Plantation	WD4	Moderate Local	No significance for plants and invertebrates but important for Red Squirrel and Pine Marten
Mixed broadleaved/conifer woodland	WD2	Moderate Local, Moderate Regional	Low to moderately good for plants and

			invertebrates. Commonly important for Red Squirrel and Pine Marten
Bog Woodland	WN7	High Local	Extensive woodland habitat. Value will increase as matures.

9.2.2 Conservation evaluation: Section 2: Boughill to Derryhaun

Table 14: Conservation Evaluation: Section 2: Boughill to Derryhaun

BOUGHILL TO DERRYHAUN			
Ecological feature	Fossitt code	Evaluation	Rationale
Cutover & Cutaway Bog	PB4	Moderate Local	A degraded peatland habitat type but of increasing importance as rehabilitation measures applied.
Treelines	WL2	High Local	Mature treelines some containing notable mature trees.
Hedgerows	WL1	High Local	Ecological corridor often containing notable mature trees.
Wet woodlands	WN6	High local value and regional importance	Important for a number of wetland plants but also birds, reptiles and mammals.
Broadleaved woodland	WD1	Moderate local, low regional	Areas of value to local wildlife.
Lowland rivers	FW2	High Local to High Regional	Ecological corridors.

Drainage ditches	FW4	Low Local	Small areas supporting wetland vegetation some of local importance to wildlife
Wet grassland	GS4	Moderate local in general. Higher where it forms part of a mixed wetland habitat mosaics	Small areas of semi-natural habitat or part of broader wetland areas.
Reed Swamp	FS1	High Local	Important for a range of species.
Dry or Improved Grasslands	GA1	Low Local	Small areas of generally species poor dry meadow grassland and grassy verges. Often highly modified.
Recolonising bare ground	ED3	Low Local	Supports generally common vegetation
Scrub	WS1	Moderate Local	Important cover for birds. Low diversity overall
Buildings and artificial surfaces	BL3	Low Local	None or limited vegetation
Mixed Conifer Woodland	WD3	Moderate Local, Moderate Regional	No significance for plants and invertebrates but important for Red Squirrel and Pine Marten
Conifer Plantation	WD4	Moderate Local	No significance for plants and invertebrates but important for Red Squirrel and Pine Marten
Mixed broadleaved/conifer woodland	WD2	Moderate Local, Moderate Regional	Low to moderately good for plants and

			invertebrates. Commonly important for Red Squirrel and Pine Marten
Bog Woodland	WN7	High Local	Extensive woodland habitat. Value will increase as matures.

9.2.3 Conservation evaluation: Section 3: Derryhaun to Mosstown

Table 15: Conservation Evaluation: Section 3: Derryhaun to Mosstown

DERRYHAUN TO MOSSTOWN			
Ecological feature	Fossitt code	Evaluation	Rationale
Cutover & Cutaway Bog	PB4	Moderate Local	A degraded peatland habitat type but of increasing importance as rehabilitation measures applied.
Treelines	WL2	High Local	Mature treelines some containing notable mature trees.
Hedgerows	WL1	High Local	Ecological corridor often containing notable mature trees.
Wet woodlands	WN6	High local value and regional importance	Important for a number of wetland plants but also birds, reptiles and mammals.
Broadleaved woodland	WD1	Moderate local, low regional	Areas of value to local wildlife.
Lowland rivers	FW2	High Local to High Regional	Ecological corridors.

Drainage ditches	FW4	Low Local	Small areas supporting wetland vegetation some of local importance to wildlife
Wet grassland	GS4	Moderate local in general. Higher where it forms part of a mixed wetland habitat mosaics	Small areas of semi-natural habitat or part of broader wetland areas.
Reed Swamp	FS1	High Local	Important for a range of species.
Dry or Improved Grasslands	GA1	Low Local	Small areas of generally species poor dry meadow grassland and grassy verges. Often highly modified.
Recolonising bare ground	ED3	Low Local	Supports generally common vegetation
Scrub	WS1	Moderate Local	Important cover for birds. Low diversity overall
Buildings and artificial surfaces	BL3	Low Local	None or limited vegetation
Mixed Conifer Woodland	WD3	Moderate Local, Moderate Regional	No significance for plants and invertebrates but important for Red Squirrel and Pine Marten
Conifer Plantation	WD4	Moderate Local	No significance for plants and invertebrates but important for Red Squirrel and Pine Marten
Mixed broadleaved/conifer woodland	WD2	Moderate Local, Moderate Regional	Low to moderately good for plants and

			invertebrates. Commonly important for Red Squirrel and Pine Marten
Bog Woodland	WN7	High Local	Extensive woodland habitat. Value will increase as matures.

9.2.4 Conservation evaluation: Section 4: Mosstown to Gorteencalree

Table 16: Conservation evaluation: Section 4. Mosstown to Gorteencalree

MOSSTOWN TO GORTEENCALREE			
Ecological feature	Fossitt code	Evaluation	Rationale
Cutover & Cutaway Bog	PB4	Moderate Local	A degraded peatland habitat type but of increasing importance as rehabilitation measures applied.
Treelines	WL2	High Local	Mature treelines some containing notable mature trees.
Hedgerows	WL1	High Local	Ecological corridor often containing notable mature trees.
Wet woodlands	WN6	High local value and regional importance	Important for a number of wetland plants but also birds, reptiles and mammals.
Broadleaved woodland	WD1	Moderate local, low regional	Areas of value to local wildlife.
Lowland rivers	FW2	High Local to High Regional	Ecological corridors.

Drainage ditches	FW4	Low Local	Small areas supporting wetland vegetation some of local importance to wildlife
Wet grassland	GS4	Moderate local in general. Higher where it forms part of a mixed wetland habitat mosaics	Small areas of semi-natural habitat or part of broader wetland areas.
Reed Swamp	FS1	High Local	Important for a range of species.
Dry or Improved Grasslands	GA1	Low Local	Small areas of generally species poor dry meadow grassland and grassy verges. Often highly modified.
Recolonising bare ground	ED3	Low Local	Supports generally common vegetation
Scrub	WS1	Moderate Local	Important cover for birds. Low diversity overall
Buildings and artificial surfaces	BL3	Low Local	None or limited vegetation
Mixed Conifer Woodland	WD3	Moderate Local, Moderate Regional	No significance for plants and invertebrates but important for Red Squirrel and Pine Marten
Conifer Plantation	WD4	Moderate Local	No significance for plants and invertebrates but important for Red Squirrel and Pine Marten
Mixed broadleaved/conifer woodland	WD2	Moderate Local, Moderate Regional	Low to moderately good for plants and

			invertebrates. Commonly important for Red Squirrel and Pine Marten
Bog Woodland	WN7	High Local	Extensive woodland habitat. Value will increase as matures.

9.3 Greenway Impact Assessment

The potential impacts on the ecological features identified for each of the proposed route sections are given in the following tables.

9.3.1 Impact Assessment: Section 1: Ballyloughan to Boughill

Table 17: Impact Assessment: Section 1: Ballyloughan to Boughill

BALLYLOUGHAN TO BOUGHILL				
Ecological feature	Evaluation	Nature of Impact	Significance	Duration & Likelihood
Cutover & Cutaway Bog (including PB4 subtypes)	Moderate Local	Loss of habitat	Negligible	Permanent/Likely
Treelines	High Local	No impact predicted	None	None
Hedgerows	High Local	No impact predicted	None	None
Lowland rivers	High Local to High Regional	Works may cause temporary pollution	Minor adverse	Temporary/Unlikely
Drainage ditches	Low Local	Works may cause temporary pollution	Negligible	Temporary/Unlikely
Wet grassland	Moderate local in	Loss of habitat		

	general. Higher where it forms part of a mixed wetland habitat mosaics		Negligible	Permanent/ Possible
Dry or Improved Grasslands	Low Local	No impact predicted	None	None
Recolonising bare ground	Low Local	Loss of habitat	Negligible	Permanent/Likely
Scrub	Moderate Local	No impact predicted	None	None
Buildings and artificial surfaces	Low Local	No impact predicted	None	None
Bog Woodland	High Local	No impact predicted	None	None

9.3.2 Impact Assessment: Section 2: Boughill to Derryhaun

Table 18: Impact Assessment: Section 2.Boughill to Derryhaun

BOUGHILL TO DERRYHAUN				
Ecological feature	Evaluation	Nature of Impact	Significance	Duration & Likelihood
Cutover & Cutaway Bog (including PB4 subtypes)	Moderate Local	Loss of habitat	Negligible	Permanent/Likely
Treelines	High Local	No impact predicted	None	None
Hedgerows	High Local	No impact predicted	None	None

Wet woodlands	High local value and regional importance	No impact predicted	None	None
Lowland rivers	High Local to High Regional	High Local to High Regional	Works may cause temporary pollution	Minor adverse
Drainage ditches	Low Local	Works may cause temporary pollution	Negligible	Temporary/ Unlikely
Wet grassland	Moderate local in general. Higher where it forms part of a mixed wetland habitat mosaics	Loss of habitat	Negligible	Permanent/ Possible
Reed Swamp	High Local	No impact predicted	None	None
Dry or Improved Grasslands	Low Local	No impact predicted	None	None
Recolonising bare ground	Low Local	Loss of habitat	Negligible	Permanent/Likely
Scrub	Moderate Local	Loss of habitat	Negligible	Permanent/ Possible
Buildings and artificial surfaces	Low Local	No impact predicted	None	None

Conifer Plantation	Moderate Local	No impact predicted	None	None
Bog Woodland	High Local	No impact predicted	None	None

9.3.3 Impact Assessment: Section 3: Derryhaun to Mosstown

Table 19: Impact Assessment: Section 3: Derryhaun to Mosstown

DERRYHAUN TO MOSSTOWN				
Ecological feature	Evaluation	Nature of Impact	Significance	Duration & Likelihood
Cutover & Cutaway Bog	Moderate Local	Loss of habitat	Negligible	Permanent/ Possible
Treelines	High Local	No impact predicted	None	None
Hedgerows	High Local	No impact predicted	None	None
Wet woodlands	High local value and regional importance	No impact predicted	None	None
Drainage ditches	Low Local	Works may cause temporary pollution	Negligible	Temporary/ Unlikely
Dry or Improved Grasslands	Low Local	Loss of habitat	Negligible	Permanent/ Possible
Recolonising bare ground	Low Local	Loss of habitat	Negligible	Permanent/ Possible

Scrub	Moderate Local	Loss of habitat	Negligible	Permanent/ Possible
Buildings and artificial surfaces	Low Local	No impact predicted	None	None
Conifer Plantation	Moderate Local	No impact predicted	None	None
Bog Woodland	High Local	No impact predicted	None	None

9.3.4 Impact Assessment: Section 4. Mosstown to Gorteenalree

Table 20: Impact Assessment: Section 4: Mosstown to Gorteenalree

MOSSTOWN TO GORTEENCALREE				
Ecological feature	Evaluation	Nature of Impact	Significance	Duration & Likelihood
Cutover & Cutaway Bog (including PB4 subtypes)	Moderate Local	Loss of habitat	Negligible	Permanent/Likely
Treelines	High Local	High Local	No impact predicted	None
Hedgerows	High Local	High Local	No impact predicted	None
Wet woodlands	High local value and regional importance	No impact predicted	None	None
Lowland rivers	High Local to High Regional	High Local to High Regional	Works may cause temporary pollution	Minor adverse

Drainage ditches	Low Local	Low Local	Works may cause temporary pollution	Negligible
Wet grassland	Moderate local in general. Higher where it forms part of a mixed wetland habitat mosaics	No impact predicted	None	None
Dry or Improved Grasslands	Low Local	Loss of habitat	Minor adverse	Permanent / Possible
Recolonising bare ground	Low Local	Loss of habitat	Negligible	Permanent/Likely
Scrub	Moderate Local	Loss of habitat	Negligible	Permanent/Possible
Buildings and artificial surfaces	Low Local	No impact predicted	None	None
Conifer Plantation	Moderate Local	No impact predicted	None	None
Mixed broadleaved/conifer woodland	Moderate Local, Moderate Regional	No impact predicted	None	None
Bog Woodland	High Local	No impact predicted	None	None

10 Discussion of Impact Assessment

10.1 Impact on Habitats

Impacts upon habitats types within which the greenway corridor will be constructed are considered to be *Minor Adverse* or lesser significance, given the conservation value of the habitat types which are likely to be impacted upon by the proposed construction and operation of the greenway. The only habitat types for which impacts of *Minor Adverse* significance are predicted are Lowland (Depositing) Rivers (FW2) and Hedgerow habitat. Impacts of *Minor Adverse* significance are predicted as being possible but *Unlikely* in probability for the watercourses crossed by the proposed route. Here, the construction phase may result in some pollution to the watercourses. This would be of *Temporary* duration.

Some impact of *Minor Adverse* significance is predicted as being *possible* on agricultural lands in Section 3 (Derryhaun to Mosstown) if the route is to be directed through improved agricultural grassland here. This would result in loss of habitat here that would be of *Permanent* duration. However, It is yet to be confirmed whether this route option through agricultural lands is to be pursued.

The nature of impact on Cutover and Cutaway Bog will be loss of habitat where some sections will be converted to Greenway surface. This will be a *Permanent* impact, as this habitat type will be lost here and that is predicted as being *likely*. However, it should be noted that this habitat type is highly modified and is also extremely widespread in the survey area. Therefore the significance of this impact is considered as *Negligible*.

Impacts of *Negligible* significance are also predicted on Drainage Ditches which may also be impacted upon by construction activities resulting in impacts of *Temporary* duration. However, as with the larger watercourses, such impacts are considered unlikely. Impacts to Wet Grassland are also predicted as being *Possible*. However, as a very small proportion of the route (estimated < 250m) will cross this habitat type, any loss of this habitat would be of *Negligible* significance.

Also predicted as being of *Negligible* significance are any impacts on Scrub or Recolonising Bare Ground habitat types. The former will only require clearance from an estimated less than 200m of the route and where recorded it was largely species-poor, being comprised mostly of Gorse and Bramble. If cleared outside the bird nesting season (March-August inclusive), no impacts of significance are predicted. The latter is typically species-poor and is generally highly modified in

character. Recolonising Bare Ground makes up a large proportion of the substrate of the existing railway line and this will be substantially altered due to works. However, this would not result in any significant loss of biodiversity given the nature of this habitat type.

Some impact of *Negligible* significance is predicted as being *possible* on agricultural grassland habitat in Section 3 (Derryhaun to Mosstown) if the route is to be directed through improved agricultural grassland here.

Impacts on more ecologically valuable peatland habitats including Heath (HH) and Bog Woodland (WN7) have not been predicted as likely. This is due to the location of the proposed Greenway route on existing track and laneway/road as well as adherence to good works practices during the construction phase.

The overall impact significance of the proposed development upon these habitats (taken as a whole) can therefore be considered to be *Minor Adverse* or lower. Measures to mitigate these impacts are given in the following section.

11 Impact Mitigation

Mitigation measures to address the potential impacts as detailed above on the ecological features of each of the proposed route sections are given in the following tables.

11.1 Mitigation Measures Section 1: Ballyloughan to Boughill

Table 21: Mitigation Measures Section 1: Ballyloughan to Boughill

BALLYLOUGHAN TO BOUGHILL		
Ecological feature	Nature of Impact	Recommended Mitigation Measures
Cutover & Cutaway Bog (including PB4 subtypes)	Loss of habitat	<ul style="list-style-type: none"> - Area of works to be strictly delineated - Good works practices to be maintained - Topsoil salvage to be carried out where appropriate
Lowland rivers	Works may cause temporary pollution	<ul style="list-style-type: none"> -Best practice methodologies to be followed for watercourse crossings - No in-stream works to be carried out -Works to be carried out under ecologist supervision - Works practices in riparian areas to be strictly controlled
Drainage ditches	Works may cause temporary pollution	<ul style="list-style-type: none"> -Best practice methodologies to be followed for watercourse crossings -Works to be carried out under ecologist supervision
Wet grassland	Loss of habitat	<ul style="list-style-type: none"> - Area of works to be strictly delineated - Good works practices to be maintained - Topsoil salvage to be carried out where appropriate
Recolonising bare ground	Loss of habitat	<ul style="list-style-type: none"> - Topsoil salvage to be carried out where appropriate

11.2 Mitigation Measures Section 2: Boughill to Derryhaun

Table 22: Mitigation Measures Section 2: Boughill to Derryhaun

BOUGHILL TO DERRYHAUN		
Ecological feature	Nature of Impact	Recommended Mitigation Measures
Cutover & Cutaway Bog (including PB4 subtypes)	Loss of habitat	<ul style="list-style-type: none"> - Area of works to be strictly delineated - Good works practices to be maintained - Topsoil salvage to be carried out where appropriate
Lowland rivers	Works may cause temporary pollution	<ul style="list-style-type: none"> -Best practice methodologies to be followed for watercourse crossings - No in-stream works to be carried out -Works to be carried out under ecologist supervision - Works practices in riparian areas to be strictly controlled
Drainage ditches	Works may cause temporary pollution	<ul style="list-style-type: none"> -Best practice methodologies to be followed for watercourse crossings -Works to be carried out under ecologist supervision
Wet grassland	Loss of habitat	<ul style="list-style-type: none"> - Area of works to be strictly delineated - Good works practices to be maintained - Topsoil salvage to be carried out where appropriate
Recolonising bare ground	Loss of habitat	<ul style="list-style-type: none"> - Topsoil salvage to be carried out where appropriate
Scrub	Loss of habitat	<ul style="list-style-type: none"> - Area of works to be strictly delineated - Any clearance to take place outside the bird nesting season

11.3 Mitigation Measures Section 3: Derryhaun to Mosstown

Table 23: Mitigation Measures Section 3: Derryhaun to Mosstown

DERRYHAUN TO MOSSTOWN		
Ecological feature	Nature of Impact	Recommended Mitigation Measures
Cutover & Cutaway Bog	Loss of habitat	<ul style="list-style-type: none"> - Area of works to be strictly delineated - Good works practices to be maintained - Topsoil salvage to be carried out where appropriate
Hedgerows	Loss of habitat	<ul style="list-style-type: none"> - Area of works to be limited - Any clearance to take place outside the bird nesting season - Hedgerows to be replaced with linear habitat along Greenway
Drainage ditches	Works may cause temporary pollution	<ul style="list-style-type: none"> - Best practice methodologies to be followed for watercourse crossings - Works to be carried out under ecologist supervision
Dry or Improved Grasslands	Loss of habitat	<ul style="list-style-type: none"> - Area of works to be strictly delineated - Topsoil salvage may be carried out and appropriately seeded following initial site clearance works.
Recolonising bare ground	Loss of habitat	<ul style="list-style-type: none"> - Topsoil salvage to be carried out where appropriate
Scrub	Loss of habitat	<ul style="list-style-type: none"> - Area of works to be strictly delineated - Any clearance to take place outside the bird nesting season

11.4 Mitigation Measures Section 4: Mosstown to Gorteencalree

Table 24: Mitigation Measures Section 4: Mosstown to Gorteencalree

MOSSTOWN TO GORTEENCALREE		
Ecological feature	Nature of Impact	Recommended Mitigation Measures
Cutover & Cutaway Bog (including PB4 subtypes)	Loss of habitat	<ul style="list-style-type: none"> - Area of works to be strictly delineated - Good works practices to be maintained - Topsoil salvage to be carried out where appropriate
Lowland rivers	High Local to High Regional	<ul style="list-style-type: none"> - Best practice methodologies to be followed for watercourse crossings - No in-stream works to be carried out - Works to be carried out under ecologist supervision - Works practices in riparian areas to be strictly controlled
Drainage ditches	Low Local	<ul style="list-style-type: none"> - Best practice methodologies to be followed for watercourse crossings - Works to be carried out under ecologist supervision
Recolonising bare ground	Loss of habitat	<ul style="list-style-type: none"> - Topsoil salvage to be carried out where appropriate
Scrub	Loss of habitat	<ul style="list-style-type: none"> - Area of works to be strictly delineated - Any clearance to take place outside the bird nesting season

Impacts on fauna and other ecological receptors are given in the following section.

12 Impacts and Mitigation: Fauna & other Species Groups

12.1 Badgers

It is essential that the construction and operation of the Greenway does not lead to the disturbance to the natural function, home range or feeding patterns of local Badgers populations.

Badgers and their refugia are protected under the Wildlife (Amendment) Act 2000 and the Wildlife Act 1976 and by European legislation. Possible Badger activity was recorded within and surrounding the proposed route at a number of locations. This survey identified Badger scats, possible tracks and possible signs of foraging. No Badger setts or potential Badger setts were found within or immediately surrounding the study area.

12.1.1 Potential Impacts upon Badger Population

As the Greenway is generally following existing train lines, roads and paths the risk of territory splitting *Negligible*. In addition no Badger setts were recorded during the survey making direct impact also *Negligible*.

12.1.2 Mitigation for Badgers

As no impacts to any Badger population were concluded no mitigation measures are required.

12.2 Bats

All bat species are protected by law in Ireland under the Bonn Convention (1992), the Bern Convention (1982) the EU 'Habitats' Directive (92/43/EC; transposed into Irish law by S.I. No. 94 of 1997) and the Wildlife Acts 1976 and 2000. Lesser Horseshoe Bats are listed as Annex II species of the Habitats Directive (afforded special protection). All other Irish bat species are listed in Annex IV (general protection) of this Directive.

A survey of all potential bat roosting habitats was undertaken. Such habitat areas include buildings, old stone walls, bridges and mature trees. The Greenway route and its surroundings offer a wide range of landscape features that could provide feeding and some roosting opportunities for bats. Feeding and foraging habitats include rivers, lakes, woodlands, hedgerows, and wet grasslands. No potential bat roosts were recorded within the footprint of

the Greenway route. No mature trees or building that could possibly serve as Bat roosting sites were noted as requiring removal for the construction of the Greenway.

A tree survey for bat potential was carried out along the proposed Greenway route. Mature specimen trees and mature Ivy growth surrounding the proposed route were common. All mature trees should be retained where possible across the route not only for bats but also for their overall habitat and amenity value. If any mature or Ivy covered trees as recorded within the study areas and must be removed, they will firstly require a dedicated bat survey.

12.2.1 Impacts upon Bat Populations

The proposed Greenway may be predicted as having some *minor adverse* impacts upon bat populations during the construction phase due to the loss of some trees and scrub. This may cause minor impacts to feeding opportunities for local bat populations. All clearance works are due to take place during hibernation (November to March) and therefore direct impacts from clearing and constructions works should be *Negligible*.

Most of the vegetation within the boundary of the site shall be maintained along the Greenway and as the linear nature of the corridor is to be maintained, impacts to Bats due to clearance should be *minor adverse*. Minor short-term reduction in the abundance of prey species may also exist due to the removal of vegetation.

It is understood that the Greenway is not proposed to be lit. Lighting can severely impact on bat roosting behaviour, foraging behaviour and commuting behaviour with knock-on effects on accessing feeding areas. Many species of bats forage along dark corridors like rivers and hedgerows and are known to stay clear of well-lit areas. If the Greenway or bridges are inappropriately lit, this can impact upon bats' home ranges. Bat vision is an important sense during dusk and dawn as bats begin to move to and from the roosting sites. Excessive luminance particularly around roosting sites can lead to bats being disorientated and can also lead to abandonment of roosts. Lighting can also impact feeding behaviour as prey species are drawn towards lights leading to a localised decrease in prey populations as most bat species will avoid well-lit areas.

12.2.2 Mitigation of Impacts upon Bat Populations

The proposed measures are intended to minimise the significance of impacts of the construction and operation of the Greenway on bats that use the route area and surrounds for feeding and connectivity through the landscape.

Minimising unnecessary removal of vegetation as well as expanding the extent of natural habitat in some areas would reduce the impact of the development on bats. Installation of bat boxes on selected trees, bridges or other appropriate areas would have a positive influence on bat species.

Mature trees within the boundary and particularly those close to the clearance area have been recorded as they many contain bat roosts. Where a tree marked as a mature specimen cannot be retained, trees must be felled in an appropriate and sensitive manner in accordance with NRA guidelines (2005) for the treatment of bats. Such tree-felling will be supervised by an ecologist where required. Recorded tree roosts are generally excluded/felled during March to April or Sept to November in order to minimise potential impacts. An acceptable mitigation measure is for mature specimen trees, with bat habitat potential, to be felled and left for 24 hours to allow any bats to escape before being cut up or removed.

Where lights in non-built up areas are required to be installed these should conform to the following specifications:

- Lights should face down or be masked to avoid light hitting potential roosting areas.
- Lights should work on sensors
- Low Pressure Sodium (SOX) or High Pressure Sodium (SON) lighting should be used where possible
- Avoid lights that emit high levels of ultraviolet light or Metal Halide & Mercury vapour lights.
- Place shields or masking over the top and lights to focus light away from roosts on navigation paths.
- Use Internal and external louvres to reduce light spillage.

12.3 Impacts on Protected Invertebrates

No protected invertebrate species were recorded during surveys. However, the plant Devil's-Bit Scabious (*Succisa pratensis*) was commonly found to occur in several areas along the banks and verges surrounding the Greenway route. This is the food plant of the Marsh Fritillary butterfly

(*Euphydryis aurinia*). This European Habitats Directive Annex II species is the only insect in Ireland that is designated as Annex II, with it being a qualified interest for fourteen Special Areas of Conservation (SAC) in Ireland.

In Ireland, the species relies solely on Devil's-Bit Scabious as its larval food plant. This is a plant of damp ground and often occurs in stands (mosaics) within areas of damp and wet grassland. Marsh Fritillary deposit eggs on the underside of *Succisa* leaves in mid-May, with the caterpillars then moving towards the base of the plant on hatching. A web is spun in which the larvae live gregariously and feed. The webs increase in size throughout the summer and are at their most conspicuous between August and October, which is the appropriate time of year to carry out larval web searches.

There were no larval webs found during the ecology surveys as these were either absent or inconspicuous at time of survey. It is reasonable to assume that this species may be widespread in some of the areas of wet grassland and regenerating bog habitat surrounding the route.

12.3.1 Impacts on Marsh Fritillary

Marsh Fritillary is thought to be widespread in Ireland. However, there is a paucity of information on its distribution, known sites and long-term monitoring of same. A database of findings from a national butterfly survey is held by the NBDC. The populations of this species are thought to fluctuate considerably (www.npws.ie). Colonies require a sufficient area of habitat so that the species can survive natural changes to habitats and the effects of parasites. Individual sites are thought to exist as part of a network of neighbouring sites that are used periodically as conditions permit. If there is suitable habitat over a sufficient area, colonies may persist for many years. Removal of the food plant and the habitats suitable for same could therefore result in moderate negative impacts for a long-term duration.

Significant amounts of Devil's-Bit Scabious were noted within the area which will be cleared and resurfaced to accommodate the construction of the Greenway. The number of plants within the Zone of Influence of works was however minor compared to the amount noted within the surrounding landscape. Therefore, possible impacts to Marsh Fritillary are considered *Minor adverse*.

12.3.2 Mitigation of Impacts on Marsh Fritillary

Mitigation by avoidance of suitable habitat for this species is recommended. Construction works should aim to avoid impacting the area surrounding the footprint of the route where possible. Machinery and equipment should be stored on existing areas of bare peat to avoid impacts to heavily vegetated areas. Mitigation by designing new habitat areas within the footprint of the Greenway project may be readily achieved. This could serve not only to expand on existing habitat patches but also to create 'stepping stone' habitat areas along the verges to facilitate colonisation. It was noted that much fallow wet grassland and recolonising bare ground exists surrounding the proposed route. These areas would be highly suitable for the planting/seeding of Devil's Bit Scabious.

12.4 Trees and other vegetation

12.4.1 Trees

The route for the proposed Greenway was often surrounded by woodland and scrub. As much of the route and surroundings is former cutover bog much of the woodland areas as young (1 – 50 years) with scrub a major component of the mixture. Mature trees were generally only recorded along roads and within boundaries hedges. Conifer plantation was also common recorded surrounding the route. The Greenway route's trees and woodlands provide a variety of ecosystem services including shelter and feeding opportunities for birds, bats and other mammals. Providing deadwood for invertebrates and organic matter. Additionally, they add to the overall character of the Greenway for users by creating a sense of enclosure and age that add to the overall aesthetic appeal of the Greenway.

12.4.2 Impacts to Trees

The overall impact upon tree species is considered *Negligible* as most of the works take place along existing trackway and roads. Any trees that are likely to be removed will be young (under 25 years old) and of low ecological significance. The indirect impacts of tree removal include the losses of nest and roosting opportunities for birds and possibly bats in the longer term. Losses of food sources through decreases in seed, nut and berry volumes and in invertebrates that are food sources for insectivorous mammals and birds. This impact is considered *minor adverse*.

12.4.3 Mitigation of Impacts to Trees

Maps indicate the location of specimen trees identified during this survey. These are trees of an exceptional age or aesthetic beauty, offer potential roosting opportunities for bats or birds, or exceptional feeding opportunities for birds or mammals. Site operatives and site managers involved in clearance works should be made familiar with the location of trees within the vicinity of their works areas and be able to identify species even if no leaves are present at the time of clearance.

In instances where specimen trees are on or near the clearance area works should aim to go around these trees where possible. If this is not possible trees should be pruned to allow track clearance while maintaining tree growth. Pruning with hand tools would be necessary, as removal of branches with diggers or other machinery can cause cracking in branches, leading to subsequent rot and tree death.

To help mitigate the losses of overall tree numbers, saplings found along the clearance route should be carefully lifted and transplanted into areas of low tree cover. This will help offset the overall loss of trees and help create greater woodland cover. To prevent losses of biodiversity associated with tree clearance, cut logs from removed trees should be left along the embankments locally, to support communities of detritivores (worms, millipedes, wood lice and other invertebrates), fungi and lichen species.

12.4.4 Scrub

Scrub was a common habitat feature of the greenway route. Areas of scrub containing thickets of Hawthorn, Blackthorn as well as Bramble, Willow, Bracken and Gorse are of high importance for nesting, foraging and resting by birds and mammals. Care should also be taken to maintain areas of this habitat along the route. Scrub also protects young trees like Oaks and Ash that may eventually become forest champions. Where possible the track should go around areas of Scrub. If this is not feasible scrub should be cleared under the supervision of an ecologist.

12.4.5 Open grassland areas

Some areas of open grassland including wet grassland offer high potential for biodiversity, particularly pollinating species including moths, butterflies and bees. Impacts to grasslands is considered *minor adverse*.

Pollinators require pollen from a diverse range of plants species including trees, shrubs and flowers. Pollinators such as butterflies require foods to satisfy both their caterpillar and butterfly lifecycle, while all pollinators require foraging and resting habitat. The use of native species meadow seed mixes would be ideal for landscaping where grassland is planned to be maintained.

12.5 Invasive Species

Ireland is a signatory to a number of international treaties and conventions, including the Convention on Biological Diversity. Such treaties and conventions require the Irish Government to address issues of invasive alien species. This has been implemented through national legislation via the Wildlife Acts 1976 and 2000 (as amended) and further regulated through the European Communities (Birds and Natural Habitats) Regulations 2011 (SI 477).

Articles 49 and 50 of these latter regulations sets out the legal implications associated with alien invasive species and Schedule 3 of the regulations lists non-native species subject to the restrictions of Articles 49 and 50.

Under Article 49 and 50 of these Regulations it is an offence to:

- Plant, disperse, allow dispersal or cause the spread of invasive species.
- Keep the plants in possession for the purpose of sale, breeding, reproduction, propagation, distribution, introduction or release.
- Keep anything from which the plant can be reproduced, or propagated from, without a granted licence.
- Keep any vector material - including infested soil, seeds or plant fragments from a contaminated site contaminated site, for the purposes of breeding, distribution, introduction or release.

It is important to note that if an invasive species, listed in Schedule 3 of the 2011 Regulations, has been positively identified on a works site it is not an option to do nothing i.e. action of some form must be taken to address the invasive species in order to comply with environmental legislation (the European Communities (Birds and Natural Habitats) Regulations 2011 (SI 477)).

Only one location was noted where a Schedule 3 species was positivity identified. A single stand of Japanese Knotweed (*Fallopia japonica*) was noted on the side of the road near the Corlea

Visitors centre. This stand is likely outside the study area for this project but should be noted to the council for treatment.

A number of other non- Schedule 3 invasive species were recorded around the site including Cheery Laurel and Snowberry. While it is not required by the legislation to remove these species, they can have detrimental impacts to our native flora and should be removed where possible.

12.5.1 Impacts from Invasive Species

Given the minor extent of invasive species impacts from invasive species within the Greenway corridor are considered *Negligible*.

12.5.2 Mitigation of Invasive Species (where applicable)

Japanese Knotweed: Herbicide treatment of Japanese Knotweed should begin at the start of the growing season where possible. Further treatment in the coming years will still be required to ensure stands are totally eradicated. Stands of JKW should be identified on the ground with bunting and signage.

JKW can be easily spread through the transportation of material containing fragments of stems or the movement of soil containing roots or rhizomes. As such all clearance works undertaken near stands of Knotweed stands must be strictly controlled. All site operatives should be informed of the presences of Knotweed if working within the vicinity of a stand. Stands should be clearly marked with signage and bunting.

Other invasive species: Other invasive species were recorded on site included Cherry Laurel and Snowberry. Neither of these species are listed on Schedule 3 of articles 49 and 50 of the European Communities (Birds and Natural Habitats) Regulations 2011 (SI 477)) but best practise dictates that these should be removed where possible.

Best practice permits that efforts should be made to ensure that the spread of these species is prevented. This is facilitated by ensuring minimal movement of soil containing these plant species or their seeds on site.

12.6 Amphibians and Reptiles

The entire proposed route was surveyed for the presence and breeding habitats of Common Frog (*Rana temporaria*), Smooth Newt (*Lissotriton vulgaris*) and Common (or Viviparous) Lizard

(*Zootoca vivipara*). Suitable feeding and breeding habitats for all three species was abundant throughout the study area. Much suitable feeding habitat for the Common Frog occurs surrounding the survey area, including grassland, woodland and scrub. Breeding habitats for this species included pools, drainage ditches (particularly within areas of recolonising bare peat) and wet grassland and marsh areas. More limited habitat for Smooth Newts was found but there is still significant habitat area for this species surrounding the proposed route corridor. Suitable habitat for the Common Lizard exists in the tussocky fallow grassland, bogs and stony areas.

12.6.1 Potential Impacts on Amphibians and Reptiles

Impacts on these species groups might arise from habitat loss. Specifically, the loss of feeding areas and breeding habitats may be predicted. Habitat suitability for these species was far greater in the areas surrounding the proposed Greenway than within its footprint. *Minor Adverse* impacts are therefore predicted.

12.6.2 Mitigation of Potential Impacts on Amphibians and Reptiles

The primary means of mitigation for these species groups will be by avoidance. Works should avoid all suitable breeding habitats for amphibious species (e.g. pools, wet ditches and wet grasslands). The timing of works will also be important in mitigating potential impacts. No areas of still water – including seasonal pools – shall be entered between December and May, unless inspected by an ecologist and cleared to do so. Clearance of feeding and other refuge areas such as wet grasslands is to be minimised. Over-wintering habitat areas such as log-piles or fallen trees are not to be cleared during winter months unless cleared by the onsite ecologist. Compensatory refugia may readily be created within or on the edge of woodland areas by the piling up of fallen/felled trees or limbs. The construction should aim to minimise disturbance to the surrounding landscape to reduce impacts to these species.

12.7 Otters

Otters, along with their breeding and resting places, are protected under the provisions of the Wildlife Act, 1976, as amended by the Wildlife (Amendment) Act, 2000. Otters have additional protection because of their inclusion in Annex II and Annex IV of the Habitats Directive, which is transposed into Irish law in the European Communities (Natural Habitats) Regulations (S.I. 94 of

1997), as amended.

Otters are also listed as requiring strict protection in Appendix II of the Berne Convention on the Conservation of European Wildlife and Natural Habitats and are included in the Convention on International Trade of Endangered Species (CITES). As such, if any signs of Otters are found during clearing or track construction mitigation measures outlined below should still be applied. No signs of Otters including spraints, feeding remains and potential holt sites were recorded during this survey. It is likely that Otters reside within the Royal Canal which the route crosses and may also be present within a number of rivers and stream which the route passes over.

12.7.1 Impacts to Otters

The clearance of bankside vegetation and habitat can have negative impacts on Otters. In the short-term, this could result in an immediate impact of moderate to high significance on populations in these areas. However, these impacts are extremely unlikely as no major works are likely to take place on the banks of any of the river crossings or on the canal. Potential impacts to Otters as a result of the proposed Greenway construction are considered *negligible*.

No major changes to any water courses or the removal of any drains, culverts or river channels are predicted at this time meaning impacts to Otters are unlikely to be significant overall. Any such works on rivers within the study areas will require consultation with Inland Fisheries Ireland.

12.7.2 Mitigation of Potential Impacts upon Otter populations

Mitigation measures are adapted from the NRA guidelines on Otter protection (2005).

Working hours should avoid dawn and dusk in order to avoid noise disturbance.

The impacts on Otter populations may also be mitigated against by the provision of constructed measures as necessary. These include underpasses and culverts positioned and designed to allow Otter access at different flow conditions. Culverts where required should be installed as box culverts to allow easy passage for Otter and other mammals like Badgers. This access should be above normal flood levels.

12.8 Birds

The Birds Directive (2009/147/EC) and the Habitats Directive (92/43/EEC) provide legal protection for all bird species, selected habitats and the wider environment in the EU. The

Wildlife Act 1976 (Revised, Updated to 20 December 2018) confirms in Section 22, (5), that it is an offence for a person to intentionally kill or to injure a protected wild bird or to intentionally to destroy, injure or mutilate the eggs or nest of a protected wild bird.

A bird survey was undertaken as part of this investigation. Birds associated with scrub, deciduous and coniferous woodland and scrub are noted. Species included, among others, a number of both resident and migratory species. Species among others, included tit, finch, warbler, thrush, corvid, hirundine, and raptor species. Numerous species associated with the water and wetlands were also identified. A number of red listed bird species were recorded including Peregrine Falcon and Golden Plover along with a number of Duck species.

12.8.1 Impacts

It is plausible that works outside of the breeding season, associated with tree clearance, mulching, chainsaw activities, movement of track machines and other vehicles, excavation works, and other human activities will cause a level of noise, vibration and visual disturbance to birds. However no habitats essential for any of these red-listed bird species is likely to be impacted as a result of the proposed works. In addition given the scale of the landscape within which works will take place impacts of the nature described above are likely to be *minor adverse*. A possible impact of a Greenway project may be the opening up of bird nesting, roosting or foraging habitat to predators. However, as the route of the proposed Greenway is almost entirely extant and open along the Bord na Móna railway line, no additional impacts in this regard are predicted.

12.8.2 Mitigation Mitigation of Potential Impacts on Bird Species

Given the dense terrain and difficulty associated with surveying scrub vegetation for nesting birds, it is advised for all clearance works to be conducted outside of the bird breeding season. Minor clearance, though discouraged, could be permitted if small patches due to be cleared, were surveyed by experienced bird surveyors, during the bird nesting season. Local area clearance should be conducted within 24 hours of bird surveys during the breeding season if no active nests were identified. These surveys could be done for essential works, and the surveys would identify whether any nesting is occurring and whether such nesting interferes with planned works.

Disturbance caused to woodland and scrub associated birds will include a loss of available habitat, where the footprint of works takes place. Therefore, best efforts to retain habitat, and trees, where possible, and minimise disturbance, should be made. Installation of nest boxes tailored for different species should be considered as a form of compensatory mitigation for some of these species. Nest box installation and placement should form part of the landscape masterplan plan.

12.9 Red Squirrel

No evidence of Red Squirrels including eaten pine cones, Dreys or caches were recorded within or surrounding the study area. Red Squirrels were, up until very recently rare in Ireland due to the prevalence of the none native Grey Squirrel. It is believed that the resurgence in Pine Marten numbers has led to the return of the Red Squirrel as Pine Martens are known to predate upon the Grey Squirrel. This in turn has reduced the disease pressure of Squirrel Pox that was the actual main driver in the reduction in Red Squirrels numbers.

The red squirrel is protected in the under the Irish Wildlife Act (1976) and Wildlife (Amendment) Act (2000), and the Bern Convention Appendix III.

12.9.1 Impacts on Red Squirrels

Negligible impacts to Red Squirrel feeding and migration opportunities may incur as a result of the proposed clearance works and subsequent Greenway operation.

12.9.2 Mitigation for Red Squirrels

No Red Squirrels were noted within or surrounding the proposed Greenway route. As such, no mitigation is required. Nesting boxes could be installed on tree surrounding the Greenway route to make the area more enticing for Red Squirrels.

12.10 Pine Marten

12.10.1 Impacts on Pine Marten

Overall impacts upon Pine Marten population are considered *Negligible*. As with the Red Squirrel, impacts to Pine Martens are mainly associated with the loss of trees particularly mature deciduous trees and conifers. As no large areas of either type of trees are required to be

removed as part of proposed works No impact as a result of the construction or operation phase of the Greenway are considered likely.

12.10.2 Mitigation for Pine Marten

No mature conifer or broadleaved trees or area of woodland are due to be cleared as part of this project. Mitigation is therefore not required to control any impacts. Site management could consider installing nesting boxes within areas of woodland to improve the habitat suitability for Pine Marten locally.

13 Conclusion

Ecological surveys were carried out within the proposed route of the MSWP Greenway. These were completed outside the optimal time for habitats and botanical assessment of the route and adjacent areas. Surveys included mammal, bird, bat, habitat and invasive species surveys. An extensive desktop survey was carried out which used available data from suitable sources which included online databases (e.g. National Parks and Wildlife Service and National Biodiversity Data Centre) and previous surveys including Bord na Mona Longford Bog Habitat Surveys. Consultation was carried out with statutory bodies such as National Parks and Wildlife Service and County Council Representatives.

A wide range of habitats were recorded during survey. These ranged from woodlands, grasslands and areas of wetland. The most significant area overall was areas of recolonising bare peat. This ranged from bare peat to sparse early colonising grass and herb species to closed canopy mature bog woodland. Another significant habitat types was areas of waterlogged recolonising bare peat: These provided a mosaic habitat of open water and wetland habitats that were noted as important for birds at the site.

Relative to the size of the landscape within which it is to be located, the footprint of the Greenway is small. The route generally follows existing roads and train lines, some of which are still in operation. As such, the route generally occurs on recolonising artificial surfaces or bare peat. Therefore the ecological impact of the route on habitats is extremely low.

A number of areas were described in the habitat survey as Environmentally Sensitive Areas (ESAs), being of greater sensitivity due to the habitats or species occurring here. These included rivers, areas of wet willow woodland but mostly were areas of remnant raised bog. These areas were almost entirely outside the zone of influence of works or could be easily avoided where required.

Two protected mammal species were found to occur within the area. These were Badger and Pine Marten. Habitat areas suitable for these species were noted surrounding the route but not within the zone of influence of the Greenway.

A survey of bat habitat over the route found relatively few potential bat roost habitat areas. This is partly due to the scarcity of buildings within the area under survey but also the species of trees here (mostly conifers, willow and birch) and the scarcity of buildings and mature trees. A

number of measures have been described to mitigate against any impacts on bat populations while any tree-felling or clearance is being carried out.

All birds seen and heard during surveys were recorded. The greater majority of these were species typical of farmland, woodland and hedgerows. Exceptions to this would be the wetland specialists and raptors. Most of the birds recorded are of lower conservation concern but exceptions to this included Peregrine Falcon and Golden Plover (birds of highest conservation concern).

A detailed series of mitigation measures has been drawn up to address the potential impacts. These include the limiting of works areas, protection of mature trees and the timing of works. The drawing up of a Construction Environmental Management Plan (CEMP) is recommended for the construction phase of the project.

In addition to these, a wide range of measures have been described which will enhance existing habitats. For example, the planting of native trees to benefit birds and other species, the planting of food plants for a protected butterfly species and the management of grassland areas for the benefit of pollinators. This range of measures, suitably implemented, should result in an overall increase in the diversity of habitats and species along the Greenway route.

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Appendix A: Maps (provided as a separate document)

Appendix B: Ecological Constraints

Appendix B.1:Mammals

Number	Note	X Coordinate (ITM)	Y Coordinate (ITM)	Route Section	Surveyors	Treatment
1	Badger Scat	606450.2	764862	Derryhaun to Mosstown	Usna K and Chris D	Notes
2	High Bat Potential	602749.4	773244	Boughill to Derryhaun	Billy F and Ian D	To be protected
3	Mammal trails	608603.8	773142	Ballyloughan to Boughill	Billy F and Ian D	Notes
4	Mammal trails	605035.7	773359	Ballyloughan to Boughill	Billy F and Ian D	Notes
5	Mammal trails	608320.7	773081	Ballyloughan to Boughill	Billy F and Ian D	Notes
6	Mammal Trails	605447.6	763293	Derryhaun to Mosstown	Usna K and Chris D	Notes
7	Mammal Trails	609689.6	766506	Derryhaun to Mosstown	Usna K and Chris D	Notes
8	Mammal Trails	609259.7	766951	Derryhaun to Mosstown	Usna K and Chris D	Notes
9	Mammal Trails	609246.3	766959	Derryhaun to Mosstown	Usna K and Chris D	Notes
10	Mammal Trails	608936.2	760210	Mosstown to Gorteencalreen	Usna K and Chris D	Notes
11	Mammal Trails	608889.1	760223	Mosstown to Gorteencalreen	Usna K and Chris D	Notes
12	Pine Marten Scat	609194.3	773003	Ballyloughan to Boughill	Billy F and Ian D	Notes

Appendix B.2: Invasive Species

Number	Note	X Coordinate (ITM)	Y Coordinate (ITM)	Surveyors	Treatment	Number
1	Large Snowberry stand	610596.231	772976	Ballyloughan to Boughill	Billy F and Ian D	To be removed where possible
2	old man's beard	606814.1	773405	Ballyloughan to Boughill	Billy F and Ian D	To be removed where possible
3	Snowberry	610623.47	772941	Ballyloughan to Boughill	Billy F and Ian D	To be removed where possible
4	Snowberry	603676.282	772475	Boughill to Derryhaun	Billy F and Ian D	To be removed where possible
5	Japanese knotweed	610330.153	762879	Mosstown to Gorteencalreen	Usna K and Chris D	Notes



Appendix B.3: Trees



Number	Note	X Coordinate (ITM)	Y Coordinate (ITM)	Surveyors	Treatment	Number	Number
1	Mature Birch treeline	604102.639	773882	Ballyloughan to Boughill	Billy F and Ian D	To be retained where possible	To be retained where possible
2	Mature Oak	608716.111	773072	Ballyloughan to Boughill	Billy F and Ian D	To be retained where possible	To be retained where possible
3	Mature Scots Pine treeline	610560.121	773293	Ballyloughan to Boughill	Billy F and Ian D	To be retained where possible	To be retained where possible
4	Mature Sycamore	610556.616	773237	Ballyloughan to Boughill	Billy F and Ian D	To be retained where possible	To be retained where possible
5	Mature Sycamore	610563.522	773247	Ballyloughan to Boughill	Billy F and Ian D	To be retained where possible	To be retained where possible
6	Mature treeline	610576.35	772996	Ballyloughan to Boughill	Billy F and Ian D	To be retained where possible	To be retained where possible
7	Mature Ash	602627.722	773189	Boughill to Derryhaun	Billy F and Ian D	To be retained where possible	To be retained where possible
8	Mature Ash	603714.846	772448	Boughill to Derryhaun	Billy F and Ian D	To be retained where possible	To be retained where possible
9	Mature Ash	603753.648	772430	Boughill to Derryhaun	Billy F and Ian D	To be retained where possible	To be retained where possible
10	Mature Birch	603580.213	769145	Boughill to Derryhaun	Billy F and Ian D	To be retained where possible	To be retained where possible
11	Mature Hazel	603732.81	772437	Boughill to Derryhaun	Billy F and Ian D	To be retained where possible	To be retained where possible
12	Mature Hollys	600929.881	772477	Boughill to Derryhaun	Billy F and Ian D	To be retained where possible	To be retained where possible
13	Mature Hollys	600929.881	772477	Boughill to	Billy F and Ian	To be retained	To be retained



Number	Note	X Coordinate (ITM)	Y Coordinate (ITM)	Surveyors	Treatment	Number	Number
				Derryhaun	D	where possible	where possible
14	Mature Rowan	603589.964	769141	Boughill to Derryhaun	Billy F and Ian D	To be retained where possible	To be retained where possible
15	Mature Scots Pine	602601.427	773147	Boughill to Derryhaun	Billy F and Ian D	To be retained where possible	To be retained where possible
16	Mature Crab Apple	601405.012	770669	Boughill to Derryhaun	Billy F and Ian D	To be retained where possible	To be retained where possible
17	Mature Crab Apple	601418.296	770712	Boughill to Derryhaun	Billy F and Ian D	To be retained where possible	To be retained where possible
18	Mature Ash	602061.545	769453	Boughill to Derryhaun	Billy F and Ian D	To be retained where possible	To be retained where possible
19	Mature Ash	606761.938	765075	Derryhaun to Mosstown	Usna K and Chris D	To be retained where possible	To be retained where possible
20	Mature Beech	607376.276	765454	Derryhaun to Mosstown	Usna K and Chris D	To be retained where possible	To be retained where possible
21	Mature Beech	607121.841	765286	Derryhaun to Mosstown	Usna K and Chris D	To be retained where possible	To be retained where possible
22	Mature Beech	606732.61	765057	Derryhaun to Mosstown	Usna K and Chris D	To be retained where possible	To be retained where possible
23	Mature Hawthorn	608399.251	766160	Derryhaun to Mosstown	Usna K and Chris D	To be retained where possible	To be retained where possible
24	Mature Hawthorn Treeline	607828.985	765712	Derryhaun to Mosstown	Usna K and Chris D	To be retained where possible	To be retained where possible
25	Mature Sycamore	608713.139	766763	Derryhaun to Mosstown	Usna K and Chris D	To be retained where possible	To be retained where possible
26	Mature Treeline	607660.41	765626	Derryhaun to Mosstown	Usna K and Chris D	To be retained where possible	To be retained where possible
27	Mature Treeline	606704.065	765025	Derryhaun to	Usna K and	To be retained	To be retained



Number	Note	X Coordinate (ITM)	Y Coordinate (ITM)	Surveyors	Treatment	Number	Number
				Mosstown	Chris D	where possible	where possible
28	Mature Scots Pine treeline	608731.018	761656	Mosstown to Gorteencalreen	Usna K and Chris D	To be retained where possible	To be retained where possible



Appendix C: Site Photos



Ballyloughan to Boughill	
Small road at the northern most point of the study area	Large hedge dominated by snowberry
	



Ballyloughan to Boughill	
Area of wet grassland with Devils-bit Scabious	Former roadway turning into wet grassland
	



Ballyloughan to Boughill	
Recently laid crushed rock surface from Chainage 0000a chainage 1065a	Wetland Mosaic habitat with swans west of chainage 200a
	

Ballyloughan to Boughill	
Track on Bare Peat around chainage 200b	Bare Peat and recolonising bare peat near chainage 9200
	



Section: Boughill to Derryhaun	
Route Crosses the Shannon at	Recently laid crushed rock surface from Chainage 2000 to 3600
	



Section: Boughill to Derryhaun	
Recently laid crushed rock surface from Chainage 2000 to 3600	Recolonising peat and emerging Bog woodland
	

Section: Boughill to Derryhaun	
Bridge near Lanesborough. Precast concrete construction. No bat potential	Bridge near Lanesborough. Precast concrete construction. No bat potential
	



Section: Boughill to Derryhaun	
Partial path exists, parallel to wetland area, on section of planned route.	Route to pass through area of dense mature woodland. Care should be taken to retain specimen trees.
	

Section: Boughill to Derryhaun	
Train track outside Laneborough. Showing recolonising built ground	Train track outside Laneborough. Showing recolonising built ground
	

Section: Boughill to Derryhaun	
Large well vegetated drain at chainage 5100	Large well vegetated drain at chainage 5100
	



Derryhaun to Mosstown	
Area of emerging Bog woodland	Recolonisation of the trackway
	

Derryhaun to Mosstown	
Recolonised trackway surrounded by bare peat	A drain along a face of raised peat
	



Mosstown to Gorteencalreen	
Existing track within the Corlea trackway	Existing track within the Corlea trackway
	

Mosstown to Gorteencalreen	
Bare Peat with emerging bod woodland and wetland mosaic behind: Corlea Trackway	Area of remnant raised bog: Corlea trackway
	

Mosstown to Gorteencalreen	
Existing trackway around chainage 3100a	Existing trackway around chainage 3100a
	

Mosstown to Gorteencalreen	
Dying back stand of Japanese Knotweed on the road leading towards the Corlea Trackway visitors centre. It is unclear at this time if this section of roadway is within the study area.	Previously cut area with characterises of raised bog at chainage 0700a
	

Mosstown to Gorteencalreen	
Excellent mature bog woodland at chainage 0700a	Previously cut area with characterises of raised bog at chainage 0700a
	

Mosstown to Gorteencalreen	
Scrub on the edge of an area of remnant raised bog at chainage 1300a	Area of remnant raised bog at chainage 1300a
	

APPENDIX 4 – CULTURAL HERITAGE REPORT

Mid-Shannon Wilderness Park Greenway Project Cultural Heritage Desk Study

Document No: MSWP-RP-EN-0004-P04



DATE: 25/08/2021

Client: Roscommon County Council

Project: Mid-Shannon Wilderness Park Greenway



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ISSUE AND REVISION RECORD

Rev	Date	Originator	Checker	Approver	Description
P00	13/10/20	Kerstin Bartels Shortt	Heather Scully	Seán FitzSimons	
P01	08/02/21	Kerstin Bartels Shortt	Heather Scully	Seán FitzSimons	
P02	15/03/2021	Kerstin Bartels Shortt	Heather Scully	Seán FitzSimons	
P03	25/06/2021	Kerstin Bartels Shortt	Heather Scully	Seán FitzSimons	
P04	25/08/2021	Kerstin Bartels Shortt	Heather Scully	Seán FitzSimons	Amended for RCC submission

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1 INTRODUCTION

A cultural heritage assessment was undertaken by Kerstin Bartels-Shortt MIAI of Clandillon Civil Consulting in October 2020 as part of the Environmental Impact Assessment Screening Report for the Mid-Shannon Wilderness Park Greenway project. This greenway is primarily located on the Bord na Móna bogs of central Longford, crossing the River Shannon north of Lanesborough-Ballyleague into County Roscommon. The Roscommon element of this project, to which this Part VIII process relates, consists of a bridge crossing at Kilnacarrow and a short section of greenway that will facilitate future access on the western bank of the River Shannon.

In the interests of clarity and to ensure that potential cumulative impacts are addressed, the entire cultural assessment report, addressing the Longford Project elements (which are the subject of a separate Part VIII process in County Longford) in addition to the Roscommon proposals, have been included as part of this report.

The report sets out to assess the archaeological potential of the area and forms the basis for the examination of potential impacts of the proposed development on the archaeology, architectural heritage, industrial heritage and other potential cultural heritage elements of the receiving environment.

The aim of the project is to expand greenway provision in Counties Roscommon and Longford, adding to and linking 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 Roscommon and Longford County Development Plans and associated planning documents. The provision of the greenway is part of a national regeneration policy supporting tourism initiatives, sustainable infrastructure projects and greenway construction on a national level. It is also central to the creation of the Mid Shannon Wilderness Park which is linked to the vision of Bord Fáilte's 'Ireland's Hidden Heartland's' initiative, aiming to enhance access to sites of cultural and heritage and generating economic activity, while at the same time protecting environmental integrity.

A central tenet of the proposed Mid-Shannon Wilderness Park Greenway 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 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 applications¹. Existing planning applications account for 3km of the 6km of the greenway crossing 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.

¹ Part 8 Planning References Nos. 49, 57, 62, 64, 67, 76, 79 and 81

2 RECEIVING ENVIRONMENT

In the Early Medieval Period (AD500–1100) the population of Ireland increased and more land was made arable. Habitation sites dating to the early medieval period include crannógs, cashels and ringforts. Given the marginal wetland nature of the landscape, the area of proposed development would not have provided an ideal location for settlement. The Early Medieval Period was also characterised by the foundation of a large number of ecclesiastical sites but none of the known ecclesiastical sites are located within the study area.

3 ASSESSMENT METHODOLOGY

This report represents Phase I of the cultural heritage assessment, which involves a desktop survey of archaeological, historical and cartographic sources. Monuments and sites located within 150m of the proposed development were included in the assessment. The development of a walking or cycling route can generally be classified as low impact and the use of existing railway tracks will significantly reduce the potential impact of the proposed scheme on the archaeology and cultural heritage of the study area. However, sections of the route that will be newly constructed in a bog environment at Clooneeny, Cloontabeg and Derryshannoge have a high potential to encounter archaeological remains.

The desktop survey included the review of cartographic sources, including historic mapping, aerial photography, baseline records and published information. The following archaeological and historical documents were examined to establish the archaeological, architectural and cultural heritage potential of the proposed development:

- Record of Monuments and Places (“RMP”);
- Sites and Monuments Record (“SMR”);
- Roscommon and Longford County Development Plans 2015-2021;
- National Inventory of Architectural Heritage;
- Industrial Heritage Survey included in NIAH
- Cartographic sources;
- Aerial photography;
- Excavation bulletins;

4 ARCHAEOLOGY

4.1 Sites/National Monuments in the ownership of the state

One site within the study area is designated as a National Monument in the ownership of the state, as listed in Co. Longford Development Plan, 2015-2021. This is the Corlea Trackway, which has been incorporated into a visitor centre and museum. The proposed route will run around the perimeter of the visitor centre on existing tracks. Below is a table of the National Monuments in state ownership:

Site	Description	National Monument No.	Status	Distance
Corlea	Bog Trackway SMR LF022-058001 Road Class 1 Togher	677	State Ownership	0-100m

The location of this site is illustrated on the drawings in Annex B of this report.

4.1.1 RMP Sites

The code of practice agreed between the Department of Culture, Heritage and the Gaeltacht, the National Museum of Ireland and Bord na Móna provides a framework within existing legislation, policy and practice that has enabled Bord na Móna to progress with its programme of peat extraction within the framework of Government strategy, whilst carrying out archaeological mitigation. The agreed practices have led to the discovery and recording of a large number of sites within the study area. The table below lists all archaeological sites recorded within 150m of the proposed route. In total 83 RMP sites were recorded within the study area. Some of these represent clusters of individual sites or short stretches of recorded trackway forming part of the same monument.

Ref	RMP No.	Townland	Monument	Location	Distance
A1	LF013-025	Lissanurlan	Ringfort-rath, marked 'fort' on 1 st ed 6" map	610,470.00/ 774,952.00	150m
A2	LF013-159-	Clooneeny	Road – class 3 togher	610,043.00/ 773,422.00	42m
A3	LF013-160-	Clooneeny	Road – class 3 togher (hurdle togher)	610,047.00/ 773,411.00	35m
A4	LF013-067001- 11/ LF013-067014-015	Middleton	Road – class 3 togher, NW-SE aligned on both sides of the existing railway track	605,192.00/ 773,556.00	0-140m
A5	LF013-067013	Middleton	Road – class 2 togher, L 30m, part of a cluster of sites, NW-SE aligned on W side of the existing railway track	605,198.00/ 773,501.00	140m
A6	LF017-001-	Derryaroge/ Mount Davys	Road - gravel/stone trackway - peatland	603,380.00/ 770,649.00	70m
A8	LF018-110-	Cloonfore	Road - class 1 togher, L 173m orientated ENE-WSW, part of a cluster of sites to the E of the route	605,070.00/ 768405	150m
A9	LF018-080-	Annaghmore/ Corralough	Road - class 1 togher, L 500m orientated E-W	605,750.00/ 766,555.00	50m
A10	LF022-002	Derryshannoge	Ringford - Rath – levelled, named 'Fort' on the 1837 ed. of the OS 6" map	605,179.00/ 764,417.00	150
A11	LF022-054001-02	Derryshannoge	Togher of brushwood and hazel	605,130.00/ 764,111.00	60m
A12	LF022-054003	Derryshannoge	Structure - peatland	605,142.00/ 764,140.00	30m
A13	LF022-068	Derryglash	Cist	605,342.00/ 763,366.00	85m
A14	LF022-103	Derraghan More	Post row - peatland	606,606.00/ 763,149.00	140m

Ref	RMP No.	Townland	Monument	Location	Distance
A15	LF022-055001-007	Derraghan More	Togher – class 3 togher, roundwood 2.1m wide, extending E-W, either side of the railway track	606,475.00/ 763,348.00	0-100m
A16	LF022-055008	Derraghan More/ Derrygowna	Togher – class 1 togher, oak planks, extending E-W	606,608.00/ 763,143.00	150m
A17	LF022-062075-	Derrynagran	Platform – peatland, excavated 2002	606,999.00/ 761,521.00	40m
A18	LF022-186	Derrynagran	Platform - peatland	607,064.00/ 761,403.00	10m
A19	LF022-184--	Derrynagran	Platform - peatland	607,125.00/ 761,321.00	30m
A20	LF022-185--	Derrynagran	Platform - peatland	607,124.00/ 761,323.00	60m
A21	LF022-188--	Derrynagran/ Derrymany	Platform – peatland (band of brushwood in drain face)	607,121.00/ 761,332.00	60m
A22	LF022-062056-	Derrynagran/ Derrymany	Road - class 2 togher, 116 m long, ENE-WSW	607,089.00/ 761,293.00	110m
A23	LF022-176001-	Derrynagran	Structure - peatland	607,110.00/ 761,309.00	110m
A24	LF022-150-	Derrynagran	Platform - peatland	607,094.00/ 761,292.00	110m
A25	LF022-062-020-024-/ LF022-062027-/ LF022-062037-	Derrynagran	Road - class 3 togher, E-W aligned	607,114.00/ 761,313.00	110-150m
A26	LF022-062026-	Derrynagran	Road - class 2 togher, ENE-WSW aligned, L 30m,	607,069.00/ 761,296.00	110-140m
A27	LF022-173-	Derrynagran	Road - class 2 togher, L 9m,	607,110.00/ 761,233.00	150m
A28	LF022-174-	Derrynagran	Road - class 3 togher,	607,130.00/ 761,279.00	140m
A29	LF022-148-	Derrynagran	Platform - peatland	607,155.00/ 761,267.00	90m
A30	LF022-157-	Derrynagran	Platform - peatland	607,150.00/ 761,273.00	90m
A31	LF022-177-	Derrynagran	Platform - peatland	607,139.00/ 761,263.00	140m
A32	LF022-141-	Derrymany	Platform - peatland	607,117.00/ 761,368.00	15m
A33	LF022-143-	Derrymany	Platform - peatland	607,108.00/ 761,355.00	25m
A34	LF022-062051-058	Derrymany	Road - class 3 togher	607,080.00/ 761,340.00	100-120m

Ref	RMP No.	Townland	Monument	Location	Distance
A35	LF022-062070-071	Derrymany	Structure - peatland	607,109.00/ 761,289.00	110m
A36	LF022-062061-63-	Derrymany	Road - class 3 togther, aligned NW-SE to the south of the route	608,039.00/ 761,236.00	0m-100m
A37	LF022-160-	Derrynagran	Road - unclassified togther	608,086.00/ 761,274.00	10-15m
A38	LF022-153-	Derrynagran	Road - unclassified togther	608,047.00/ 761,331.00	100m
A39	LF022-146	Derrylough/ Derrymany	Road - gravel/stone trackway – peatland, may be recent	608,221.00/ 761,191.00	100m
A40	LF022-064037-	Derrylough	Road - class 3 togther, E-W	608,244.00/ 761,143.00	140m
A41	LF022-069-	Derrylough	Fulacht Fia	608,686.00/ 760,858.00	100m
A42	LF022-125-	Derryglogher	Post row	607,375.00/ 763,693.00	20m
A43	LF022-056009-015-	Derryglogher	Road – class 3 togther, NE-SW, S of railway line	607,409.00/ 763,680.00	25m
A44	LF018-075-	Rappareehill	Road- Class 3 togther	605,645.00/ 769,092.00	35m
A45	LF018-077011	Cloonfiugh	Road- Class 3 togther, part of large complex to SE of the route	606,355.00/ 768,238.00	150m
A46	LF018-090-	Cloonfiugh	Road- Class 3 togther	606,739.00/ 768,200.00	125m
A47	LF018-091-	Cloonfiugh	Road- Class 3 togther	606,729.00/ 768,220.00	100m
A48	LF018-068-	Derryart	Road - class 3 togther, E-W	608,949.00/ 767,145.00	30m
A49	LF018-069-	Derryoghil	Road - class 3 togther, ENE-WSW	608,879.00/ 767,050.00	125m
A50	LF018-131	Derryoghil	Road – class 2 togther, L 23m, NW-SE; zone of archaeological potential extends S through milled peatland from location of route	609,113.00/ 766,964.00	10-75m
A51	LF018-130	Derryoghil	Platform - peatland	609,157.00/ 766,831.00	120m
A52	LF018-133	Derryoghil	Road – class 2 togther, L 20m, ENE-WSW	609,142.00/ 766,869.00	120m
A53	LF018-134 LF018-136	Derryoghil	Platform - peatland	609,134.00/ 766,958.00	60m
A54	LF018-138/ LF018-139	Derryoghil	Road – togther unclassified and associated platform	609,113.00/ 766,964.00	70-100m

Ref	RMP No.	Townland	Monument	Location	Distance
A55	LF018-080002 to-014	Derryoghil	Road – class 3 togther, E-W aligned	609,330.00/ 766,781.00	100-150m
A56	LF018-125	Derryoghil	Platform - peatland	609,162.00/ 766,857.00	120m
A57	LF018-143	Derryoghil	Platform - peatland	609,137.00/ 766,823.00	80m
A58	LF018-081-001 to -041/	Derryoghil	Road - class 3 togther, E-W, part of a large cluster of sites stretching 500m N-S	609,148.00/ 766,779.00	100-150m
A59	LF022-066002-06	Coolnahinch (Moydough By.)	Road - class 3 togther, E-W aligned	610,064.00/ 764,500.00	30-80m
A60	LF022-057005-006/ LF022-057014-015/ LF022-057023-025/ LF022-057028--035-	Corlea	Road - class 3 togther, NW-SE aligned, extending over an area measuring 600m in length	609,749.00/ 763,775.00 to 609,759.00/ 763,725.00	0-100m
A61	LF022-057001-003	Corlea	Road - class 1 togther, 750m in length, ENE-SWS	609,595.00/ 763,557.00 to 609,744.00/ 763,530.00	0-120m
A62	LF022-085	Corlea	Road - class 3 togther, NE-SW aligned, excavated 2002	609,705.00/ 763,653.00	0-20m
A63	LF022-057041-042	Corlea	Road - class 3 togther (-042 destroyed before recording)	609,774.00/ 763,426.00	0-10
A64	LF022-076--	Corlea	Road - unclassified togther	609,798.00/ 763,370.00	0-10m
A65	LF022-077-	Corlea	Road - class 2 togther, substantial structure, possibly related to LF022-085-(50 m away)	609,664.00/ 763,607.00	50m
A66	LF022-078-	Corlea	Road - unclassified togther, NW-SE aligned	609,677.00/ 763,639.00	30m
A67	LF022-079-	Corlea	Road - class 3 togther	609,797.00/ 763,387.00	0m
A68	LF022-073-	Corlea	Platform - peatland	609,798.00/ 763,385.00	0m
A69	LF022-090-	Corlea	Platform - peatland	609,794.00/ 763,394.00	0m
A70	LF022-095--	Corlea	Platform - peatland	609,661.00/ 763,619.00	40m

Ref	RMP No.	Townland	Monument	Location	Distance
A71	LF022-096-	Corlea	Platform - peatland	609,794.00/ 763,413.00	0m
A72	LF022-083-	Corlea	Platform - peatland	609,796.00/ 763,392.00	0m
A73	LF022-084--	Corlea	Road - unclassified	609,793.00/ 763,419.00	0m
A74	LF022- 057018-021	Corlea	Road - class 3 togther	609,839.00/ 763,411.00	0m
A75	LF022- 057016- LF022- 057022-	Corlea	Road - class 2 togther, NE- SW	609,802.00/ 763,366.00 to 609,797.00/ 763,401.00	0-20m
A76	LF022- 056026-	Corlea	Road - class 3 togther	609,744.00/ 763,366.00	100m
A77	LF022-093-	Corlea	Road - class 3 togther	609,707.00/ 763,356.00	100m
A78	LF022-080--	Corlea	Road - class 2 togther	609,852.00/ 763,331.00	50m
A79	LF022-081--	Corlea	Road - unclassified	609,783.00/ 763,270.00	0-10m
A80	LF022-088--	Corlea!	Road - unclassified	609,851.00/ 763,336.00	50m
A81	LF022-074-	Corlea	Road - class 1 togther, 159 m length, ENE-WSW	609,733.00/ 763,280.00	100- 150m
A82	LF022-094-	Corlea	Platform - peatland	609,720.00/ 763,275.00	125m
A83	LF022-058016 LF022- 058017-	Cloonbreany	Road - class 3 togther, - 017 destroyed; to E of existing Corlea trackway path	609,808.00/ 762,621.00	60-120m
A84	LF022-097-	Cloonbreany	Platform - peatland	609,829.00/ 762,683.00	120m

The locations of these sites are illustrated on the drawings in Annex B of this report.

4.1.2 Excavations Database (excavations.ie)

In addition to the recorded RMP sites listed above, 11 further sites of archaeological significance have been identified from the examination of the Excavations Database. Four of these sites are associated with known archaeological sites located at a distance of more than 150m from the proposed route. The table below details the relevant excavations recorded in the Excavations Database within the study area.

Licence No.	Townland	Monument	Distance
00E0517	Derryad/ Cloonfore	W end of brushwood and twig tougher, extending over 173m, associated with RMP LF018-110—further to the E	60m

00E0516	Derryad/ Cloonfore	Plank togher, extends over 420m in total, associated with RMP LF018-108- further east	60m
13E0222	Cloonfore	Class 3 Togher recorded in 2013 Re-Assessment Survey of Derryadd Bog, immediately south of the BnM Mountdillon workshop and offices	unknown
00E0455	Corlea	Roundwood and brushwood togher, possibly associated with LF022-074- and LF022-094.	100-150m
1987:36	Corlea/ Cloonbreany	Trackway excavated by Barry Raftery in 1987. E 609449m, N 762821m	130m
02E0969	Derrynagran	Roundwood and brushwood platform, excavated in 2002, E 606,999.00, N 761,521.00	40m
02E0971	Derrynagran	Roundwood and brushwood togher	30m
02E0972	Derrynagran	Roundwood site (platform), associated with LF022-186	10m
02E0973	Derrynagran	Hurdle site and possible roundwood and brushwood togher	25m
02E0974	Derrynagran / Derrymany	Roundwood and brushwood togher	35m
01E0591	Derrindiff	Togher at Derrycolumb 5 Bog, E 608599m, N 760331m, 2001	75m

The locations of these sites are illustrated on the drawings in Annex B of this report.

4.1.3 Topographical Files

The topographical files of the National Museum of Ireland provide a record of individual finds, which are recorded per townland. All townlands impacted by the proposed development will be examined in the more detailed stages of the environmental assessment of the proposed development. It is expected that numerous finds have been recovered from the bog during peat extraction over the years.

5 ARCHITECTURAL HERITAGE

In 1990, the National Inventory of Architectural Heritage ("NIAH") was established to fulfil Ireland's obligations under the Granada Convention, through the establishment and maintenance of a central record, documenting and evaluating the architectural heritage of Ireland.

The National Inventory of Architectural Heritage ("NIAH") records all built heritage structures within specific counties in Ireland and the record is used to advise Local Authorities on the updating of the Record of Protected Structures ("RPS") as required by the Planning and Development Act, 2000. The Act of 2000 requires Local Authorities to establish a Record of Protected Structures to be included in the County Development Plan ("CDP"). Structures which have been attributed a rating value of international, national or regional importance in the NIAH inventory are recommended by the Minister of Culture, Heritage and the Gaeltacht (CHG) to the relevant planning authority for inclusion on the RPS. Buildings recorded in the RPS can include Recorded Monuments, structures listed in the NIAH or buildings deemed to be of architectural, archaeological or artistic importance by the Minister.

Once listed in the RPS, the sites/areas receive statutory protection from injury or demolition under the 2000 Act. Damage to or demolition of a site registered in the RPS is an offence.

Records examined for the purpose of this assessment included:

- National Inventory of Architectural Heritage;
- County Development Plans
- Ordnance Survey of Ireland- historical and Ordnance Survey Maps;

5.1 NIAH Sites

There are 3 structures of architectural or industrial heritage significance included in the NIAH located within 150 m of the proposed route. One of these sites is Kilnacarrow Bridge, which will be crossed by the proposed greenway. None of the sites identified from NIAH records are included in the RPS for Co. Longford. There are no impacts on Architectural Conservation Areas. The table below lists structures included in the NIAH, indicating the significance rating of each site, N= National, R = Regional, L= Local.

NIAH No.	Townland	Description	Rating	Date	Distance
13401332	Begnagh	Begnagh (Royal Canal) Bridge	R	c. 1815	70m
13401202	Kilnacarrow	Kilnacarrow Railway Bridge	R	1950-1970	0m
13401701	Cloonbony	Cloonbony House	R	c. 1800	150m

The locations of these sites are illustrated on the drawings in Annex B of this report.

6 CONCLUSION

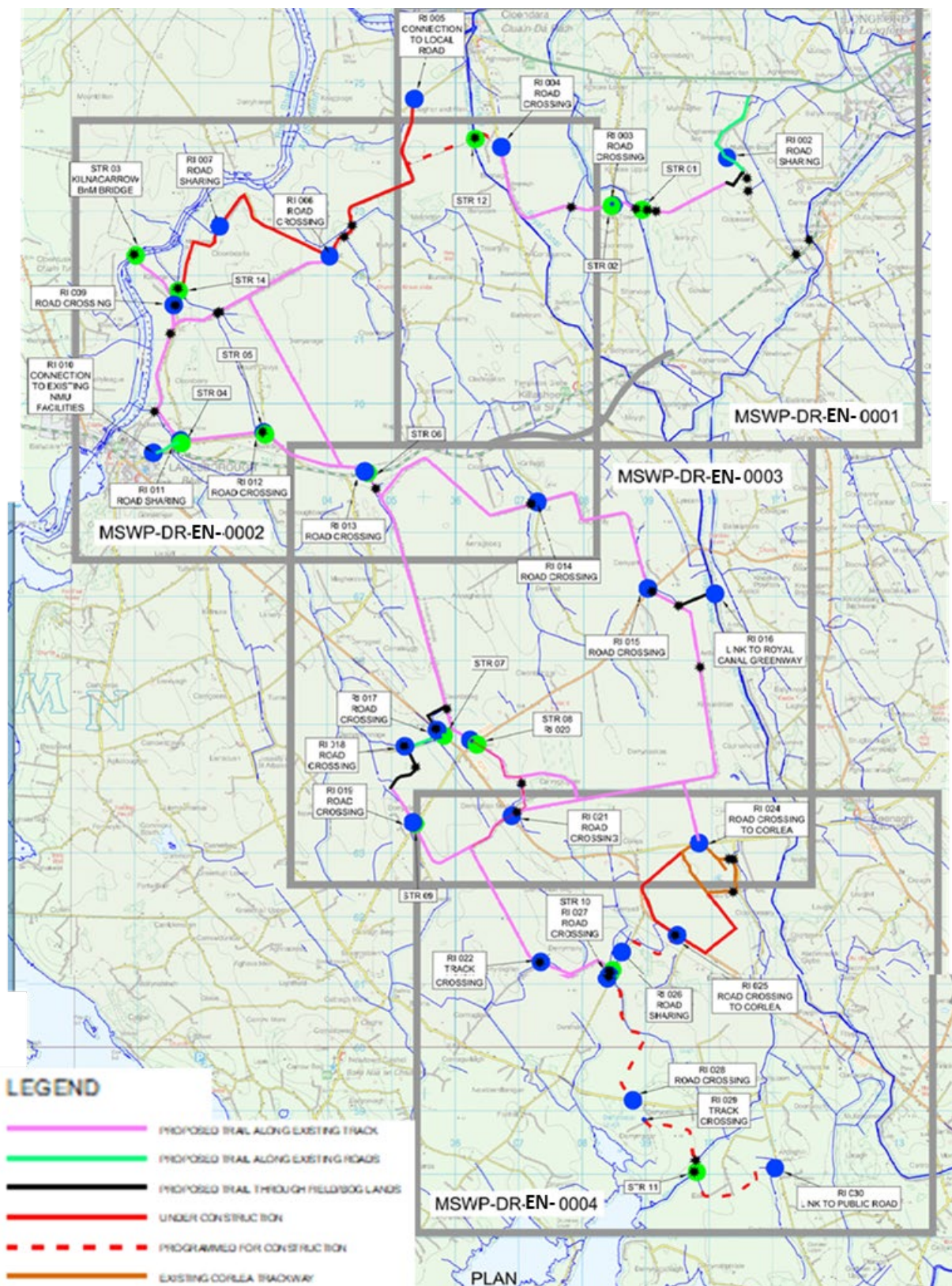
Greenways and walking routes, by their nature, are generally low-impact developments and the potential to adversely affect the cultural heritage landscape is relatively low. Of the 73km overall length of the proposed greenway route, 61 km will be positioned along decommissioned Bord na Móna industrial rail lines and a further 6 km of greenway will run along existing roads. The use of existing railway tracks and roads will further reduce the potential impact of the proposed scheme on the archaeology and cultural heritage of the study area.

It is proposed that 6 km of greenway will be constructed in cutover bog, providing connections between existing industrial railway sections and local roads. There is a high potential to encounter archaeological remains at these locations. The proposed greenway width will typically be 3.0m in accordance with National Trails guidance and TII guidance. In line with National Trails Standard for Class 2 Cycleway and Walkway, trail surfacing for off-road sections of the greenway will typically consist of a 50mm layer of compacted crushed 6mm Limestone or Quarry dust, which has been used on rural greenways in Ireland and on sections of the MSWP greenway constructed thus far. The use of floating roads, which use geogrid to spread the load of construction materials over a large surface area where poor ground conditions prevail, such as peat bogs, will reduce the requirements for mechanical excavation of topsoil and peat layers. Where the route crosses streams, placement of culverts and construction of stream crossings may also require mechanical excavation of topsoil and peat layers.

In order to mitigate impacts on previously unidentified archaeological sites within the study area, it is recommended that any potential groundworks and clearing of vegetation will be monitored by a suitably qualified archaeologist as agreed by with the relevant County Council and Bord na Móna. This

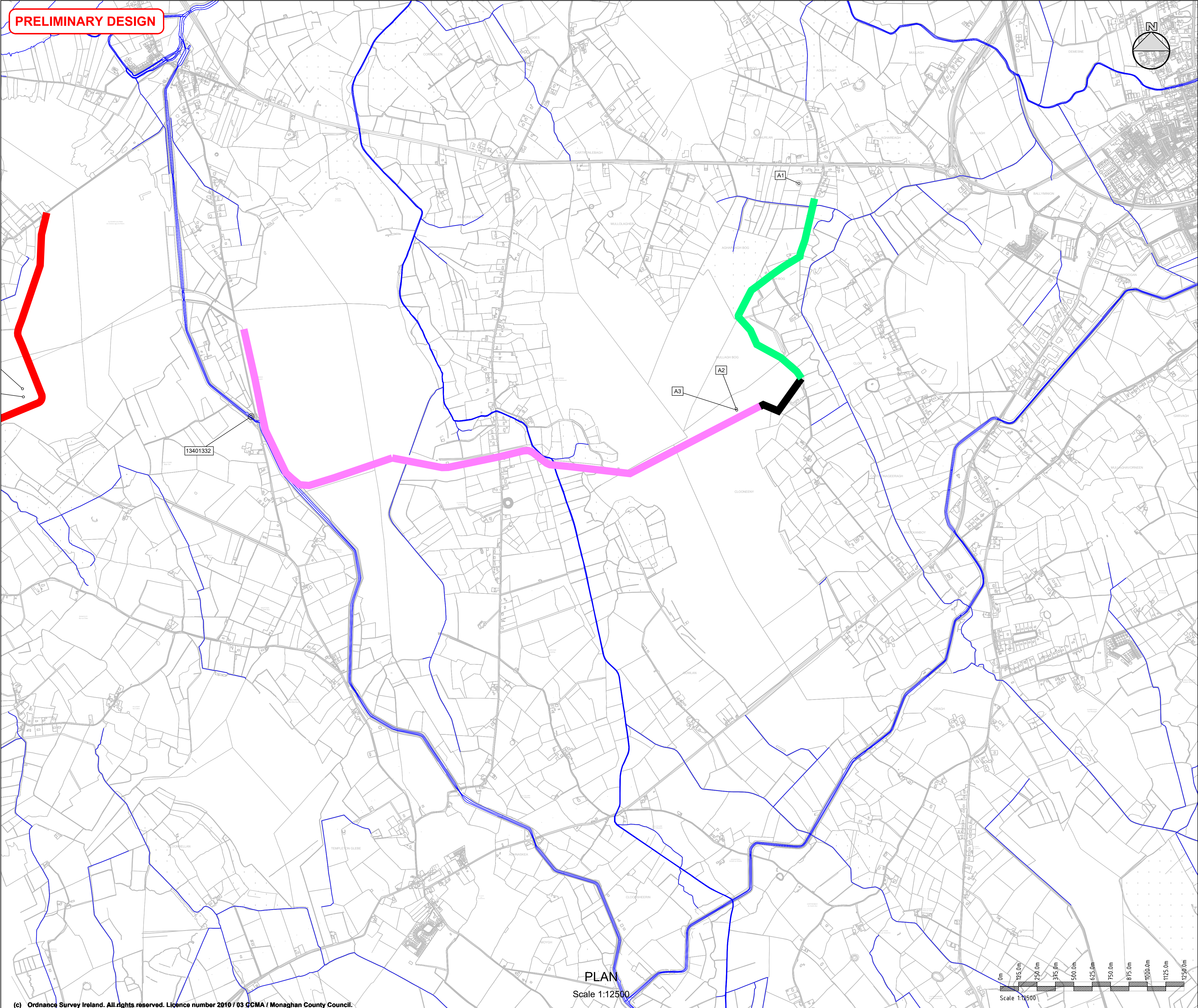
is especially pertinent where large clusters of trackways and platforms have previously been recorded, such as at Corlea, Derraghan More and Derrynagran townlands. The impact on structures of architectural heritage significance by the proposed greenway route is deemed to be low. Detailed site inspection at Kilnacarrow Bridge will facilitate further assessment of potential impacts of the greenway development on this NIAH site. The proposed low impact trail development is unlikely to impact on the setting of other cultural heritage sites. Some cultural heritage sites in close proximity to the proposed greenway route will be more accessible to visitors and residents, in line with objectives to provide enhanced access to sites of cultural and heritage significance. Apart from improved connectivity to the important heritage and tourism site at Corlea Visitor Centre, the proposed development will give access to structures of architectural heritage significance such as Begnagh Royal Canal bridges, Kilnacarrow bridge and pass in the vicinity to sites of industrial heritage significance, such as Lough Ree Power Station

ANNEX A: PROPOSED ROUTE ALIGNMENT



ANNEX B: HERITAGE SITE LOCATIONS

PRELIMINARY DESIGN



NOTES

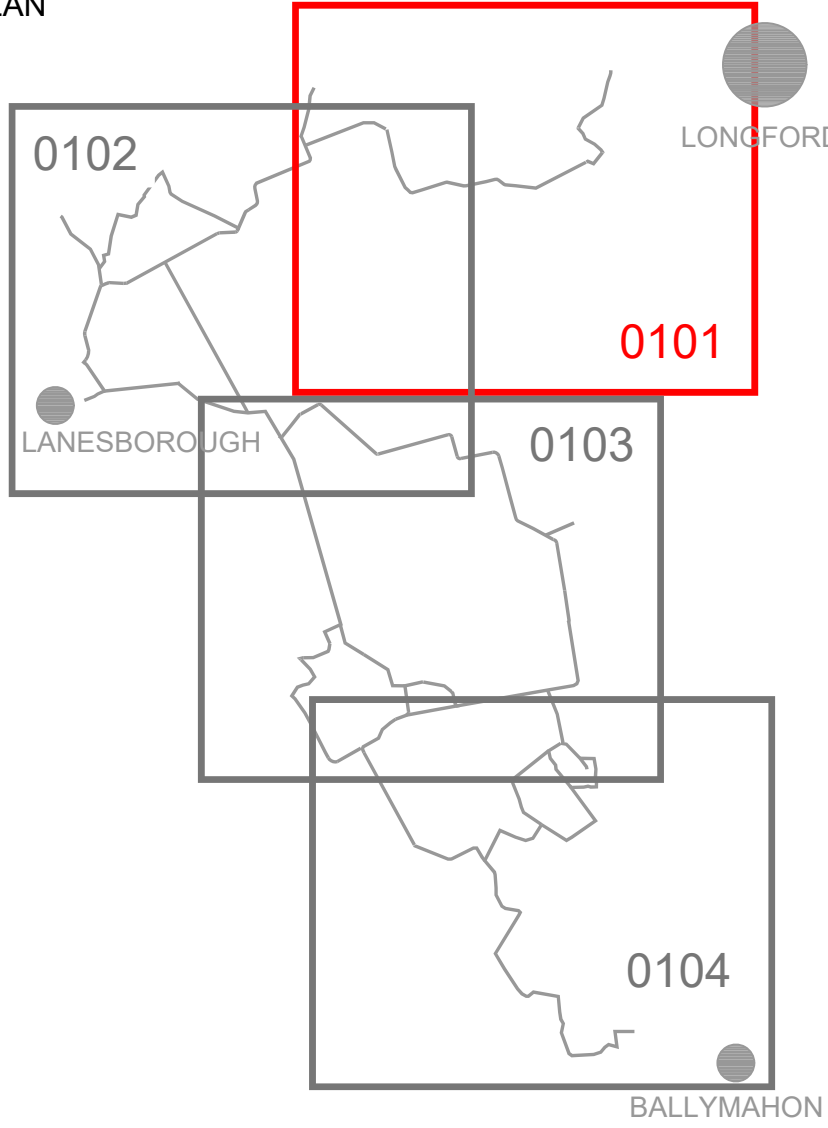
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2. Section of greenway denoted as being under construction or For Construction have been granted planning permission under. Refer to Part VIII for planning applications numbers.

LEGEND

- PROPOSED TRAIL ALONG EXISTING TRACK
- PROPOSED TRAIL ALONG EXISTING ROAD
- PROPOSED TRAIL THROUGH FIELD/BOG LANDS
- UNDER CONSTRUCTION
- PROGRAMMED FOR CONSTRUCTION
- EXISTING CORLEA TRACKWAY
- WATERCOURSE

- ARCHEOLOGY HERITAGE SITES
- EXCAVATIONS DATABASE (EXCAVATION NUMBER AS REFERENCE)
- ARCHITECTURAL HERITAGE (NIAH & NUMBER AS REFERENCE)

KEY PLAN



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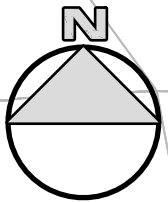
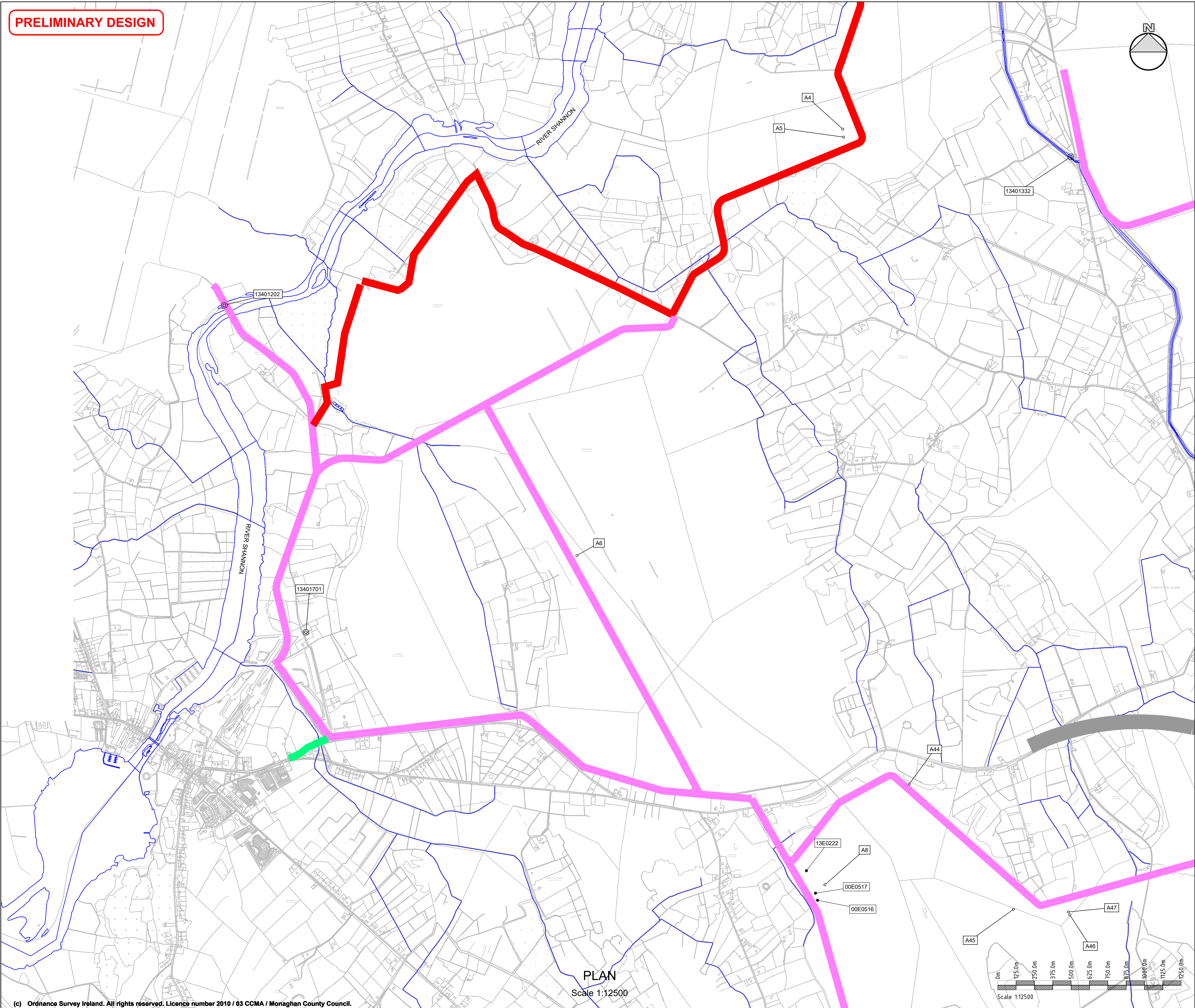
MID SHANNON WILDERNESS PARK GREENWAY PROJECT

CULTURAL HERITAGE SITES
SHEET 1 OF 4

DESIGNED SF	DRAWN ZM	CHECKED/APPROVED SC
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MSWP-DR-EN-0001 P01

PRELIMINARY DESIGN



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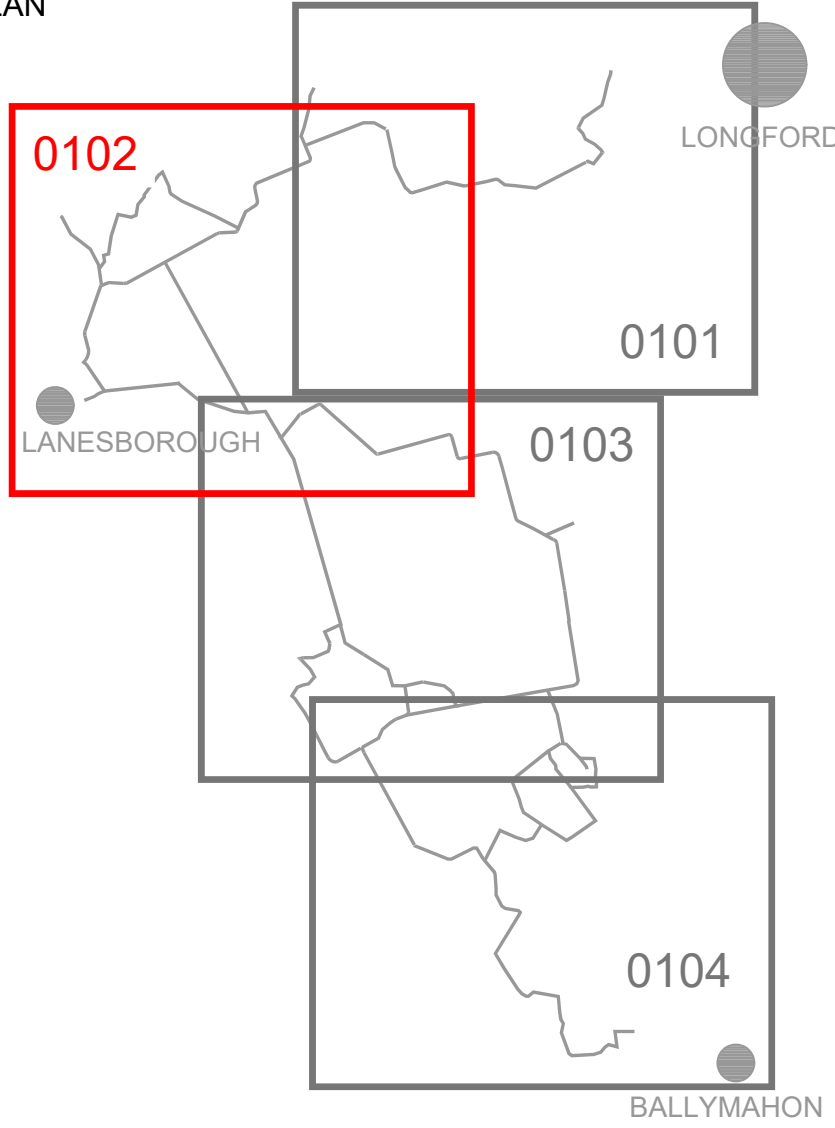
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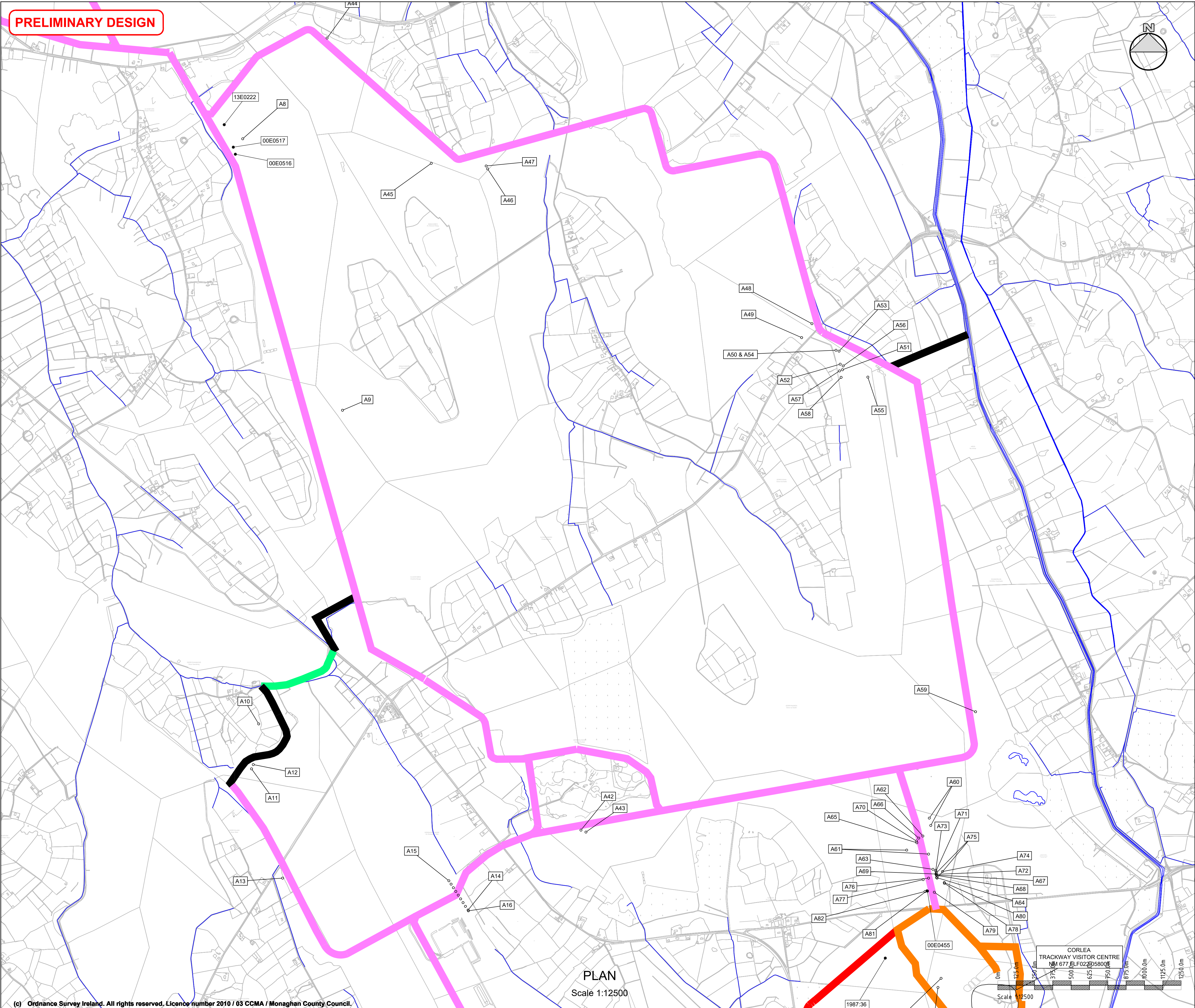
- ARCHEOLOGY HERITAGE SITES
- EXCAVATIONS DATABASE (EXCAVATION NUMBER AS REFERENCE)
- ARCHITECTURAL HERITAGE (NAH & NUMBER AS REFERENCE)

KEY PLAN



P01	24/06/2021	PRELIMINARY DESIGN	ZM	SF	SC
REV	DATE	DESCRIPTION	BY	CHK	APD
CLIENT					
DESIGNER					
PROJECT					
MID SHANNON WILDERNESS PARK GREENWAY PROJECT					
DRAWING TITLE					
CULTURAL HERITAGE SITES SHEET 2 OF 4					
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					P01

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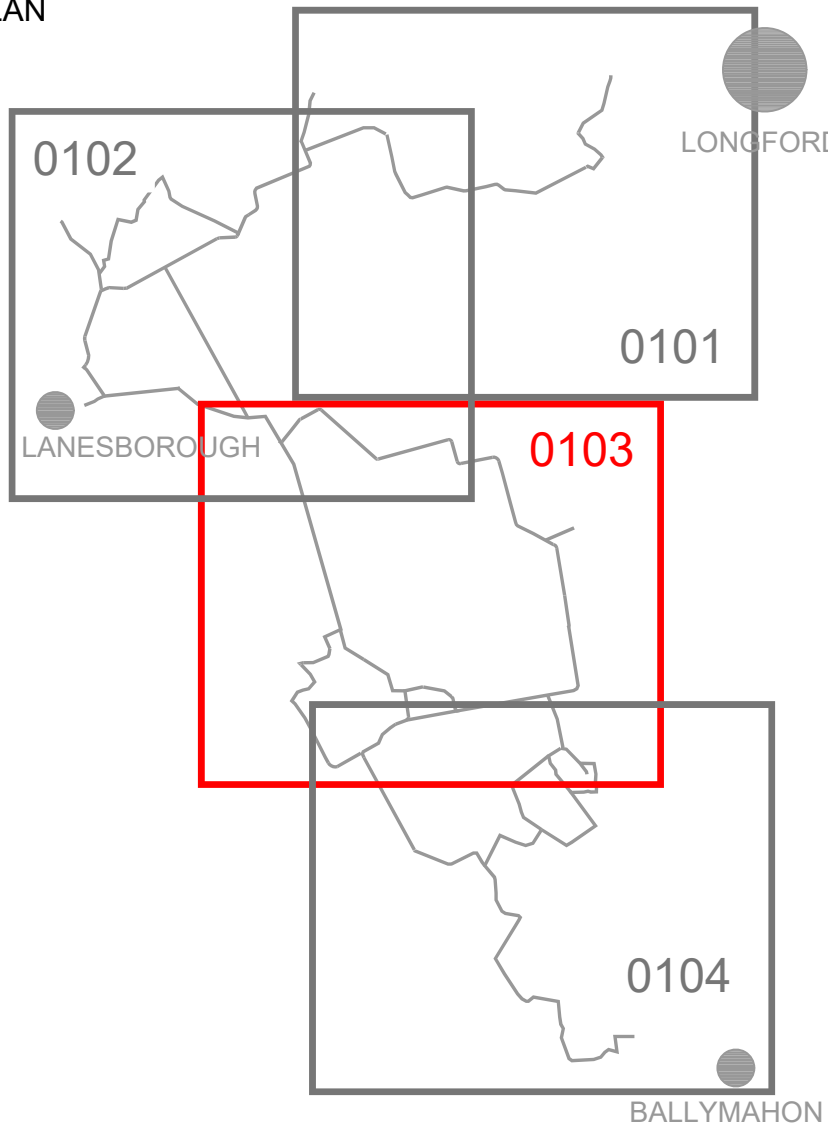
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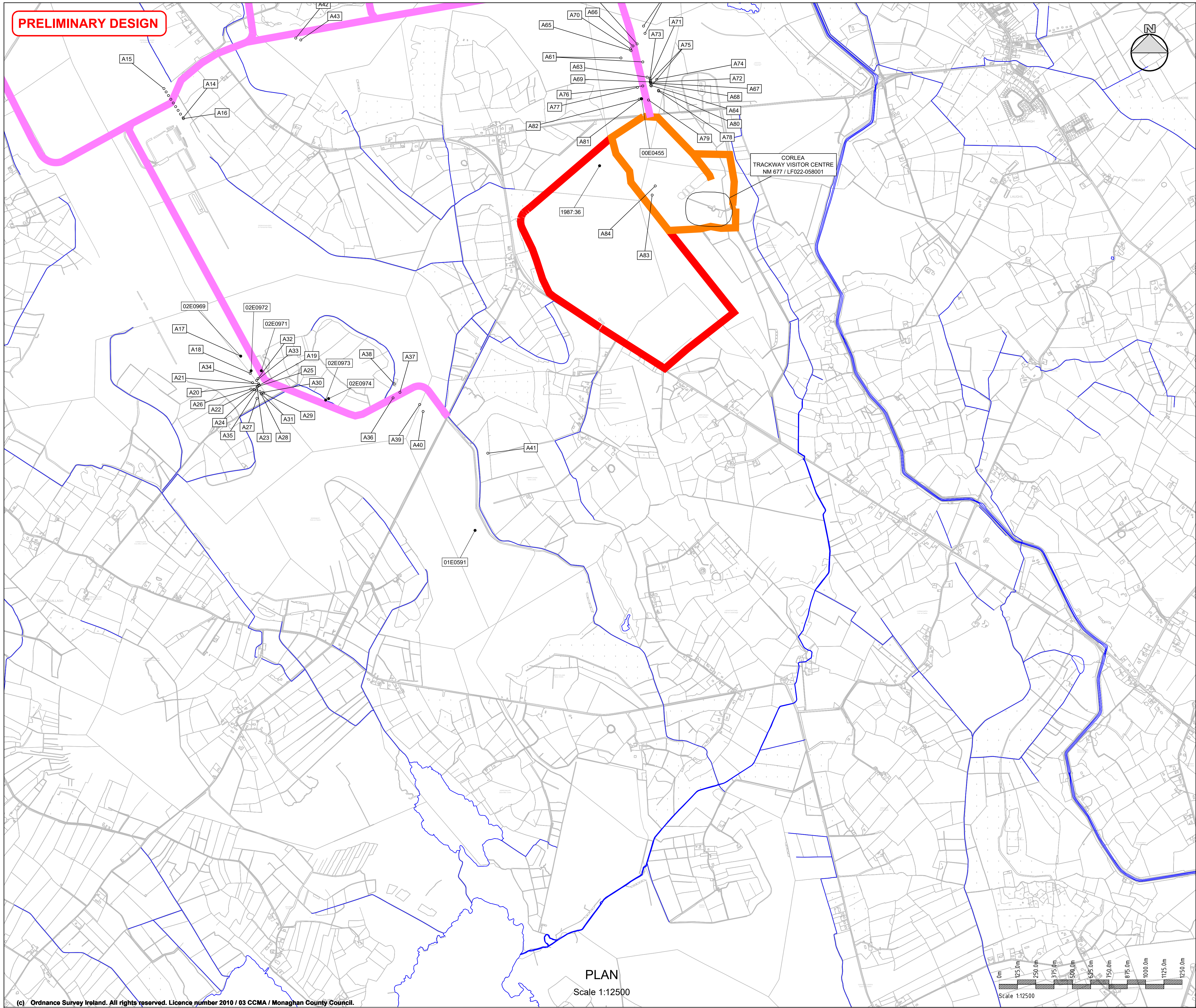
- ARCHEOLOGY HERITAGE SITES
- EXCAVATIONS DATABASE (EXCAVATION NUMBER AS REFERENCE)
- ARCHITECTURAL HERITAGE (NIAH & NUMBER AS REFERENCE)

KEY PLAN



P01	24/06/2021	PRELIMINARY DESIGN	ZM	SF	SC
REV	DATE	DESCRIPTION	BY	CHK	APD
CLIENT					
					
DESIGNER					
					
PROJECT			MID SHANNON WILDERNESS PARK GREENWAY PROJECT		
DRAWING TITLE					
CULTURAL HERITAGE SITES SHEET 3 OF 4					
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	PROPOSED TRAIL ALONG EXISTING ROAD
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	PROGRAMMED FOR CONSTRUCTION
	EXISTING CORLEA TRACKWAY
	WATERCOURSE

	ARCHEOLOGY HERITAGE SITES
	EXCAVATIONS DATABASE (EXCAVATION NUMBER AS REFERENCE)
	ARCHITECTURAL HERITAGE (NAH & NUMBER AS REFERENCE)

KEY PLAN

P01	24/06/2021	PRELIMINARY DESIGN	ZM	SF	SC
REV	DATE	DESCRIPTION	BY	CHK	APD
CLIENT					
 					
DESIGNER					
					
PROJECT					
MID SHANNON WILDERNESS PARK GREENWAY PROJECT					
DRAWING TITLE					
CULTURAL HERITAGE SITES SHEET 4 OF 4					
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APPENDIX 5 – AA SCREENING REPORT



Mid Shannon Wilderness Park Greenway
Appropriate Assessment Screening Report



Date: 25 August 2021

By: Flynn, Furney Environmental Consultants

For: Clandillon Civil Consulting

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1 INTRODUCTION

Flynn Furney have been commissioned by Clandillon Civil Consulting to carry out a Stage 1 Appropriate Assessment (AA) Screening Report for the proposed construction of a Greenway within and around a number cutover bog sites in Counties Roscommon and Longford. This screening exercise aims to determine whether the proposed construction and operation of this route has the potential to have significant or indeterminate impacts on the conservation objectives and overall integrity of any Natura 2000 sites. This assessment is based upon desk study and fieldwork carried out by suitably qualified ecologists.

Designated sites within 15km of the proposed development have been reviewed for potential impacts or pathways for impacts. This is followed by an ecological impact assessment of the project on the ecology of the area surrounding the route, including possible impacts on designated sites.

Section 5 of the report comprises the AA Screening that specifically focuses on the potential for impacts on Natura 2000 sites and their conservation objectives.

This report has been completed to provide information regarding the ecological status of the proposed site of works. This report has been completed to provide the information necessary to allow the competent authority to conduct an Article 6[3] Appropriate Assessment (AA) Screening of the proposed development. The legislation and methodology for which is detailed in the following sections below.

1.1 Proposed Works

This Appropriate Assessment (AA) Screening Report has been prepared to inform a Part VIII statutory consent process for the Mid- Shannon Wilderness Park Greenway, a proposed new greenway crossing the River Shannon north of Lanesborough-Ballyleague at Cloontuskert in County Roscommon. The Roscommon element of this project, to which this Part VIII process relates, consists of the repurposing of an existing disused rail bridge crossing at Cloontuskert in County Roscommon to Kilnacarrow in County Longford (Subject to a separate Part VIII process in Longford County Council). A 89m section of greenway, facilitating pedestrians and

cyclists, will be constructed in Cloontuskert along existing disused Bord na Mona industrial rail lines to facilitate future access on the western bank of the River Shannon.

In the interests of clarity and to ensure that potential cumulative impacts are addressed, the entire screening assessment, addressing the Longford Project elements (which are the subject of a separate Part VIII process in County Longford) in addition to the Roscommon proposals, have been included as part of this report.

The aim of the project is to expand greenway provision in Counties Roscommon and 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 study area consists of a linear path around and through a number of former raised bogs that have been used by Bord na Móna for peat cutting over recent decades. A central tenet of the scheme is to make use of existing industrial rail lines which were previously used by Bord na Móna as part of their peat harvesting operations which ceased in 2020.

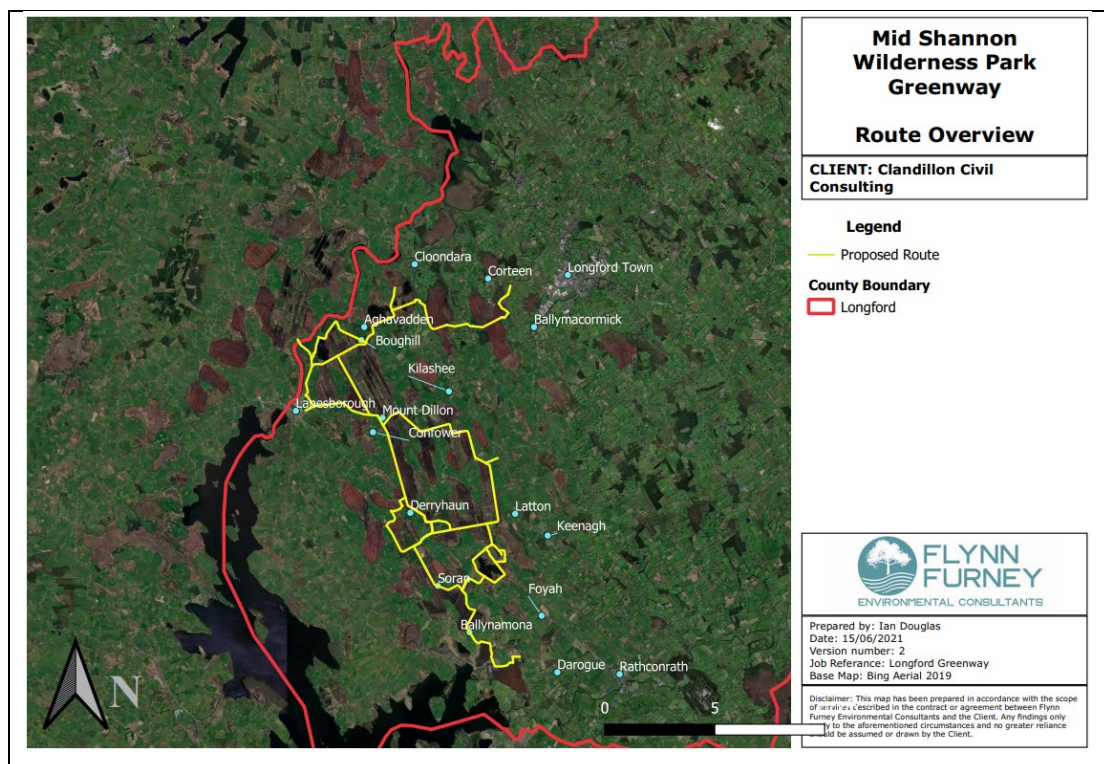
In summary, the scheme is approximately 73 km long and consists of:

- 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.

Including within the 73 km are a number of spurs and side trails linking the main trail to roads, towns and to other trail networks. Works involved with this project includes track clearance, track widening, removal and stock piling of material and the laying of a new track surface, resurfacing of existing roads and the provision of signage and street furniture.

A number of new bridge crossing and bridge improvement works will be required as part of this project. Work may include bank clearance, construction of bridge foundations and the installation of new bridge infrastructure. The design specifications of which have yet to be confirmed.

Figure 1: The proposed route and local towns and villages



1.2 Site Description

The proposed walking route generally follows the old industrial trainline network used to bring cut peat to the Lanesborough power station and to other storage and processing facilities associated with the peat extraction industry. The route also follows a number of small

farm tracks, rural roads and passes through areas of recolonising ground and hard stands around Bord na Móna yards and compounds.

The surrounding landscape is dominated by a mixture of degraded bogs, bog woodland, rivers (including the River Shannon), improved and wet grassland interspersed and conifer plantations.

A number of areas of recolonising previously cutover bog were recorded surrounding the proposed route. Recolonising areas generally consisted of open areas of previously cutover peat that firstly becomes interspersed with heather, grasses, rushes and sedges species. Trees, usually Willow and Birch, were noted in later succession areas of cutover bog. The oldest areas were dominated by bog woodland species which formed dense stands of trees with limited light the understory.

Standing water was a common feature in many of these areas of former raised bog. Permanent or semi-permanent standing water was recorded as complex mosaic habitat of bog and bog fringe species including heather, grasses, rushes and trees was noted interspersed amongst areas of open water and reeds, rushes and wetland tree species. These areas were noted as important for wetland and wading bird species.

2 Legislative context

The methodology for this screening statement is clearly set out in a document prepared for the Environment DG of the European Commission entitled 'Assessment of plans and projects significantly affecting Natura2000 sites: methodological guidance on the provisions of Article 6(3) and 6(4) of the Habitats Directive 92/43/EEC' (Oxford Brooks University, 2001). This report and any contributory fieldwork were carried out in accordance with guidelines given by the Department of Environment, Heritage and Local Government (2009, amended 2010).

The process is given in Articles 6(3) and 6(4) of the Habitats Directive and is commonly referred to as '*Appropriate Assessments*' (which in fact refers to Stage 2 in the sequence under the Habitats Directive Article 6 assessment). Article 6 of the Habitats Directive sets out provisions which govern the conservation and management of Natura 2000 sites. Article 6(3) and 6(4) of the Habitats Directive set out the decision-making tests for plans and projects likely to affect Natura 2000 sites (Annex 1.1). Article 6(3) establishes the requirement for Appropriate Assessment.

"Any plan or project not directly connected with or necessary to the management of the (Natura 2000) site but likely to have a significant effect thereon, either individually or in combination with other plans or projects, shall be subjected to appropriate assessment of its implications for the site in view of the site's conservation objectives. In light of the conclusions of the assessment of the implication for the site and subject to the provisions of paragraph 4, the competent national authorities shall agree to the plan or project only after having ascertained that it will not adversely affect the integrity of the site concerned and, if appropriate, after having obtained the opinion of the general public."

Article 6(4) of the same directive states:

"If, in spite of a negative assessment of the implications for the site and in the absence of alternative solutions, a plan or project must nevertheless be carried out for imperative reasons of overriding public interest, including those of social or economic nature, the Member State shall take all compensatory measures necessary to ensure that the overall coherence of the Natura 2000 is protected. It shall inform the Commission of the

compensatory measures adopted. Where the site concerned hosts a priority natural habitat type and/or a priority species the only considerations which may be raised are those relating to human health or public safety, to beneficial consequences of primary importance for the environment or, further to an opinion from the Commission, to other imperative reasons of overriding public interest.”

It is the responsibility of the proponent of the plan or project to provide the relevant information (ecological surveys, research, analysis etc.) for submission to the ‘competent national authority’. Having satisfied itself that the information is complete and objective, the competent authority will use this information to screen the project, i.e. to determine if an AA is required and to carry out the AA, if one is deemed necessary. The competent authority shall agree to the plan or project only after having ascertained that it will not adversely affect the integrity of the site concerned.

The appropriate assessment process has four stages. Each stage determines whether a further stage in the process is required. If, for example, the conclusions at the end of Stage One are that there will be no significant impacts on the Natura 2000 site, there is no requirement to proceed further. The four stages are:

1. Screening to determine if an appropriate assessment is required
2. Appropriate assessment
3. Consideration of alternative solutions
4. Imperative Reasons of Overriding Public Interest/Derogation

Stage 1. Screening

This is to determine if an appropriate assessment is required. Screening is the technique applied to determine whether a particular plan would be likely to have significant effects on a Natura 2000 site and would thus warrant an Appropriate Assessment. The key indicator that will determine if an Appropriate Assessment is required is the determination of whether the development is likely to have *significant environmental effects* on a Natura 2000 site or not.

Stage 2. Appropriate Assessment

This step is required if the screening report indicates that the development is likely to have a significant impact on a Natura 2000 site. Stage 2 assesses the impact of a plan or project on the integrity of the Natura 2000 site, either alone or in combination with other plans or projects, with respect to the site's structure, function and conservation objectives. Where there are adverse impacts, an assessment of the potential mitigation of these impacts is also required.

Stage 3. Assessment of Alternative Solutions

If it is concluded that, subsequent to the implementation of measures, a plan or project will have an adverse impact on the integrity of a Natura 2000 site, it must be objectively concluded that no alternative solutions exist before the plan or project can proceed.

Stage 4. Imperative Reasons of Overriding Public Interest/Derogation

Where no alternative solutions exist and where adverse impacts remain but imperative reasons of overriding public interest (IROPI) exist for the implementation of a plan or project, an assessment of compensatory measures that will effectively offset the damage to the Natura 2000 site will be necessary.

Flynn, Furney Environmental Consultants Ltd has been appointed by Clandillon Civil Consulting (who have been appointed by Longford County Council) to undertake the first stage of the above process: a screening exercise to determine whether the proposed development has the potential to have any significant or indeterminate impacts on the conservation objectives and overall integrity of any Natura 2000 sites. This assessment is based upon desk study and fieldwork carried out by suitably qualified ecologists. This document includes a detailed description of the development. The sites within 15km of the proposed development are then reviewed for potential impacts or pathways for impacts. Sections 4 and 5 of the report comprise the AA Screening that specifically focus on the potential for impacts on Natura 2000 sites and their conservation objectives.

3 Description of the project and local site characteristics

3.1 Site location

The proposed walking route network generally following the disused Bord na Móna industrial railway route through a number of former raised bogs south and west of Longford town. The trail also includes a number of roadways, farm lanes and areas of recolonising bare ground.

The trail passes through what is generally a rural landscape with other bogs, woodlands and pasture based agriculture the main land uses surrounding the site. The majority of the route is found within lands owned by Bord na Móna.

The ground conditions do not vary significantly within the area under survey. Surfaces along the old train line is generally described as large aggregate crushed rock that has become recolonised by grasses and herb species associated with bogs and recolonising bare ground.

The route starts from Ballyloughan on the N63 approximately 4km southwest of Longford town centre. The route then proceeds west towards Lanesborough and County Roscommon over the Bord na Móna rail bridge at Kilnacarrow. The route then moves south towards the Mount Dillion Bord na Móna Yard and continues south to Derryhaun. The route will also extend east and connect with the Corlea Trackway Visitors Centre and the walkways that surround it. From Derryhaun the route generally continues in a southern direction through BallynaMóna and east towards Ballymahon, where a connection with the Royal Canal trackway will be established.

Works involved with this project include clearance, track widening, removal of old trainlines, removal and stock piling of material and the laying of a new track surface, resurfacing of existing roads which interface with the greenway and the provision of signage and street furniture. A number of new bridges and culverts are also likely to be required as part of this project. Work may include site clearance, tree-felling and the installation of new bridge or culvert infrastructure. The detailed design specifications of this project have yet to be confirmed.

3.2 Description of the proposed development

Table 1: Development description

Development Detail	Description
Size, scale, area, land take	<p>The total length of the route is approximately 73km.</p> <p>The proposed works will generally consist of the construction of a greenway along the existing industrial rail line corridor. The construction of a number of or restoration of a number of bridges and culverts is also anticipated as well as the installation of fencing where required.</p> <p>Rail Decommissioning Works will be carried out by Bord na Móna's in accordance with their Rehabilitation and Decommissioning Plan. The proposed greenway seeks to reuse the former peatland industrial rail network.</p> <p>Land take is unlikely to exceed 3 metres either side of the centre of the track. The project will also include the installation of signage, distance markers and benches (see below).</p>
Details of physical changes that will take place during the various stages of implementing the proposal*	<ul style="list-style-type: none"> • Removal of rail line as per the Bord Na Móna Rehabilitation/Decommissioning Plan (by Bord na Móna) • Removal of organic material and soil • Surface improvement – Sealed and unsealed surfaces. • Bridge / culvert installation and drainage works • Signage • Boundary fencing / gates / crossing point works • picnic sets and benches • bicycle racks • footfall counters
Description of resource requirements for the construction/operation of the proposal (construction material,	<p>Construction stage resource requirements will likely include crushed rock (Clause 804) and potentially Bitumen depending on the specifications (particularly for locations at risk of flooding).</p>

human presence and wastes produced.	Overburden material may have to be stock piled and removed if suitable onsite reuse like landscaping cannot be found. At an operational stage the Greenway is likely to be busier during daylight hours but is not intended for night-time use.
Other	This proposal will result in increased noise and human presence during the construction phase but this is not greater than the levels of disturbance and noise associated with previous industrial site uses.

3.3 Works and site characteristics and risks to the environment

The principle risks posed from the proposed project relate to the potential temporary disturbance to protected species of birds.

4 Ecological Assessment

4.1 Desk Study

A desktop study was carried out as part of this screening process. This included a review of available literature on the site and its immediate environs. Sources of information included the National Parks and Wildlife Service databases on protected sites and species.

4.2 Designated Sites

Sites designated for the conservation of nature in Ireland include:

- Special Areas of Conservation (SACs)
- Special Protection Areas (SPAs)
- Natural Heritage Areas (NHAs) and;
- proposed Natural Heritage Areas (pNHAs)

SPAs and SACs form the *Natura 2000* network of sites. It is these sites that are of relevance to the screening process for this Appropriate Assessment Screening.

SPAs and SACs are prime wildlife conservation areas in the country, considered to be important on a European as well as Irish level. SPAs and SACs are designated under EU Habitats Directive, transposed into Irish law by the European Communities (Birds and Natural Habitats) Regulations 2011 (S.I. No. 477 of 2011), as amended.

Natural Heritage Area (NHAs) is the basic designation for wildlife in Ireland. These are areas considered important for their habitats or species of plants and animals whose habitat needs protection. They first entered into European Law under the 1976 Wildlife Act, then were transposed into Irish law with the 1997 Natural Habitats Regulations (S.I. No. 94 of 1997), finally gaining full statutory backing in Ireland with the passing of the Wildlife (Amendment) Act 2000.

pNHA sites were published on a non-statutory basis in 1995, but have not since been statutorily proposed or designated. These sites are designated as being of significance for

species and habitats. While not afforded the same protection as sites protected under the Habitats Directive, they are subject to protection through the following mechanisms:

- Agri-environmental farm planning schemes such as GLAS (Formally the Rural Environment Protection Scheme)
- Forest Service requirement for NPWS approval before they will pay afforestation grants on pNHA lands
- Recognition of the ecological value of pNHAs by Planning and Licencing Authorities.

All Natura designated sites within 15km of the proposed works were considered during the desktop study stage of this screening assessment in order to assess the potential for significant effects upon their Qualifying Interests / Special Conservation Interests and Conservation Objectives. This stage of the process is used to determine whether any of the designated sites may be 'screened out'. That is, that they can be regarded as not being relevant to the process, having no potential to be significantly affected or impacted upon.

4.3 Stakeholder Consultation

To date consultations with the following Stakeholders has taken place. These are summarised in table 2 below.

Table 2: Summary of Consultations

Stakeholder	Nature of Consultation	Outcome
Clandillon Civil Consulting	Meetings and phone calls	Need for this Screening Assessment communicated
Roscommon County Council	Via Clandillon Civil Consulting	The need for this Screening Assessment indicated
Longford County Council	Via Clandillon Civil Consulting	The need for this Screening Assessment indicated
National Parks and Wildlife Service	Consultation with Local NPWS Ranger	Report to be issued to Ranger for review as required.

All sites designated for the conservation of nature within 15km of the proposed works are detailed in Table 3 – Table 4 below.

Table 3: Designated sites with 15km of the proposed project area

Site Code	Site Name	Designation	Distance from the site
1626	Annaghmore Lough (Roscommon)	SAC	13.4km
2313	Ballymore Fen	SAC	13.4km
2346	Brown Bog	SAC	1.8km
2336	Carn Park Bog	SAC	14.9km
2348	Clooneen Bog	SAC	7.6km
2349	Corbo Bog	SAC	5.4km
448	Fortwilliam Turlough	SAC	3.4km
1818	Lough Forbes Complex	SAC	1.7km
440	Lough Ree	SAC	0.57km
2202	Mount Jessop Bog	SAC	1.6km
4101	Ballykenny-Fisherstown Bog	SPA	1.63km
4064	Lough Ree	SPA	0.57km
422	AghnaMóna Bog	NHA	11.3km
1423	Cloonageeher Bog	NHA	11.6km
1420	Corracramph Bog	NHA	14.1km
605	Derrycanan Bog	NHA	9.3km
1448	Forthill Bog	NHA	2.18km
2072	Lisnarrigh Bog	NHA	9.3km
1450	Mount Jessop Bog	NHA	1.6km
691	Rinn River	NHA	12.5km
1617	Ardakillin Lough	pNHA	13.6km
442	Brown Bog	pNHA	1.8km
676	Carn Park Bog	pNHA	14.9km
1822	Carrickglass Demesne	pNHA	6.5km
445	Clooneen Bog	pNHA	7.6km
602	Corbo Bog	pNHA	5.4km

1821	Cordara Turlough	pNHA	2.0km
1444	Derry Lough	pNHA	0.01km
447	Derrymore Bog	pNHA	2.1km
448	Fortwilliam Turlough	pNHA	3.4km
608	Kilglass And Grange Loughs	pNHA	11.2km
449	Lough Bannow	pNHA	0.14km
1819	Lough Bawn	pNHA	0.16km
1642	Lough Bodergh And Lough Bofin	pNHA	12.3km
1818	Lough Forbes Complex	pNHA	1.7km
440	Lough Ree	pNHA	0.57km
689	Lough Sewdy	pNHA	11.1km
1443	Lough Slawn	pNHA	5.0km
2103	Royal Canal	pNHA	0.01km
1732	Waterstown Lake	pNHA	11.5km

A total of 10 sites designated as SAC's and 2 sites designated as SPA's were recorded with 15km of the proposed development. The closest being Lough Ree SPA and SAC 0.5km away.

A total of 8 proposed National Heritage Areas (NHAs) were also recorded with 15km of the proposed development. The closest being Mount Jessop Bog 1.6km away.

A total of 20 pNHAs were found within 15km of the route. The closest of these was Derry Lough which the route runs along the boundary at some points.

No direct risks to the conservation objectives of any sites listed in table 1 are considered likely due one or more of the following:

- Lack of connectivity between the proposed development and the designated area.
- Significant buffer between the proposed works area and the designated area
- No impact or change to the management of the designated area or;
- No change to chemical or physiological condition of the designated site as a result of the proposed development.

Table 4: Lough Ree SPA and SAC Conservation Objectives

SITE	CODE	DISTANCE TO DESIGNATED SITE	SCREENING CRITERIA
Lough Ree SPA & SAC	004064	Approximately 0.5km	No physical pathways identified
HABITAT TYPES (*DENOTES A PRIORITY HABITAT)			Habitat (Natura)
Natural eutrophic lakes with Magnopotamion or Hydrocharition - type vegetation			3150
Semi-natural dry grasslands and scrubland facies on calcareous substrates (Festuco-Brometalia) (* important orchid sites)			6210
Active raised bogs			7110
Degraded raised bogs still capable of natural regeneration			7120
Alkaline fens			7230
Limestone pavements			8240
Bog woodland			91D0
Alluvial forests with <i>Alnus glutinosa</i> and <i>Fraxinus excelsior</i> (Alno-Padion, <i>Alnion incanae</i> , <i>Salicion albae</i>)			91E0
Annex II Species: Common name (<i>Latin Name</i>)			Species (Natura) Code No.
Little Grebe (<i>Tachybaptus ruficollis</i>)			A004
Whooper Swan (<i>Cygnus cygnus</i>)			A038
Wigeon (<i>Anas penelope</i>)			A050
Teal (<i>Anas crecca</i>)			A025
Mallard (<i>Anas platyrhynchos</i>)			A053
Shoveler (<i>Anas clypeata</i>)			A056
Tufted Duck (<i>Aythya fuligula</i>)			A061
Common Scoter (<i>Melanitta nigra</i>)			A065
Goldeneye (<i>Bucephala clangula</i>)			A067
Coot (<i>Fulica atra</i>)			A125

Golden Plover (<i>Pluvialis apricaria</i>)	A140
Lapwing (<i>Vanellus vanellus</i>)	A142
Common Tern (<i>Sterna hirundo</i>)	A193
Wetland and Waterbirds	A999
Otter (<i>Lutra Lutra</i>)	1355

A map showing all designated sites with 15km of the proposed development can be seen in Appendix A.

The possibly of risk to the Lough Ree SPA and SAC are discussed in more detail below. Risks to the conservation objectives of all other sites listed in table 3 is considered likely due one or more of the following:

- Lack of connectivity between the proposed development and the designated area.
- Significant buffer between the proposed works area and the designated area
- No impact or change to the management of the designated area or;
- No change to chemical or physiological condition of the designated site as a result of the proposed development.

4.4 Field Surveys

Field work for this survey was carried out between the 1st and 9th October 2020. Additional surveys were completed in January 2021. Habitats were classified and dominant plant species noted according to the guidelines given by the JNCC (2010). Habitats were classified according to Fossitt (2000). The field survey was also used to identify potential sources and pathways for impacts to designated sites. The survey also aimed to assess whether any species for which any designated site may have received its designation occur within this study area.

4.5 Habitats Description

No rare, threatened or protected species of plants as per the Red Data Book (Curtis and McGough, 1988) or Red List (Wyse Jackson et al., 2016) were found. No species listed in the Flora Protection Order (2015) were found to occur within the study area.

4.6 Overview of habitats and classification

An overview of the main habitats recorded within and surrounding the Longford Greenway study area are provided here.

Most habitat types noted here are found outside the zone of influence of the works. Works for this Greenway development will primarily be taken place on the following habitats:

- Recolonising Bare Ground ED3
- Buildings and Other Artificial Surfaces BL3
- Cutover Bog PB4
- Scrub WS1

4.6.1 Recolonising Bare Ground ED3

Fossit describes Recolonising bare ground as areas where bare or disturbed ground, derelict sites or artificial surfaces of tarmac, concrete or hard core have been invaded by herbaceous plants. Vegetation cover should be greater than 50% for inclusion in this category.

Recolonising bare ground was recorded throughout the study area along the industrial trainline, at junctions on the edges of the bogs and around yards. Many of the plant species found within this habitat types were typical ruderals, or weed plants including Colt's Foot (*Tussilago farfara*), Nettle (*Urtica dioica*), Dandelion (*Taraxacum spp.*), Willow-herb (*Epilobium spp.*) and Ragwort (*Senecio spp.*). As some bare areas contained a lot of peat bog species including Heath Milkwort (*Polygala serpyllifolia*), Purple Moor-grass (*Molinia caerulea*), Cotton grasses (*Eriophorum spp.*) and Heathers (*Calluna vulgaris*) were noted in a number of areas. Species diversity in some areas of recolonising bare ground was quite high with Tormential (*Potentilla erecta*), Silverweed (*Potentilla anserina*), Perforated St John's Wort (*Hypericum perforatum*), Yarrow (*Achillea millefolium*), Self-heal (*Prunella vulgaris*), Common Bird's-foot Trefoil (*Lotus corniculatus*) and Common Centaury (*Centaureum erythraea*). The remains of a number of Orchids were also noted these were likely Common Spotted Orchid (*Dactylorhiza fuchsii*).

4.6.2 Buildings and Other Artificial Surfaces BL3

This habitat type includes all buildings (domestic, agricultural, industrial and community) along with roads, and other sealed surfaces. With this study, this habitat type was mostly associated with roads, Bord na Móna yards, houses and domestic yards. No significant floral species were recorded within this habitat type.

4.6.3 Cutover Bog (PB4)

The dominant habitat type surrounding much of the site. Cutover bogs are areas of bog where part of or most of the original mass of peat has been removed through turf cutting or other forms of peat extraction. Areas of cutover recorded were generally abandoned or exhausted cutover as little or no peat (relative to its original mass) remained. In many instances the bedrock under the original peat mass was visible. In other areas peat was seen at depths of over 2meters. Cutover bog was generally recorded as a transitional habitat, or complex of habitats, that can include mosaics of bare peat and revegetating areas with woodland, scrub, heath, fen and or grassland communities. The nature of the recolonising vegetation was dependent on numerous factors including the frequency and extent of disturbance, hydrology, the depth of peat remaining, and the nature of the peat and the underlying substratum.

Standing water was present in drains, pools or excavated hollows. Some large areas of flooded cutover bog were recorded around the site and have begun to form complex wetland and wetland fringe habitat similar to fens, flushes and reed fringes.

To allow for a more accurate representation of this habitat type within the report Cutover Bog has been further separated into 4 categories. These categories generally follow the descriptions used in previous ecological studies carried out by Bord na Móna Ecologist. Habitats as described here have been adapted from the Bord na Móna future habitat mapping database. These have been slightly modified to better suit this report. The level of detail provided within these data bases was beyond that required for this report given that this project is not likely to significantly impact areas of recolonising cutover peat.

See foot notes for corresponding habitat classifications.

Bare Cutover Bog (Bare PB4)¹

Areas of recent disturbance where recolonisation has just become or has not yet taken place. Bare peat accounts for over 80% of the area.



Emerging grassland and heath on Cutover peat (PB4 (GS4, HH1)²

A mosaic of areas of grassland usually composed of Purple Moor-grass (*Molinia caerulea*), Rushes (*Juncus effusus*, *J. acutiflorus*, *J. articulatus*, *J. inflexus*), Sedges (*Carex Spp*) and Heathers (*Calluna vulgaris*, *Erica spp*). Tree including Willows (*Salix sp.*) and Birch Downy Birch (*Betula pubescens*) are present but only as seedlings or juvenile trees.

¹ Classified as bare peat on the Bord na Móna future habitat mapping database

² Classified as Bog woodland, heathland, and/or degraded raised bog communities (WN7/WS1/PB1/HH1/HH3/PF2/GS3) on the Bord na Móna future habitat mapping database

Emerging Woodland Cutover Bog (WN7, GS4, HH1)³

These are areas of previously open grassland, heathland type cut over bog as described above. Bog woodland species are beginning to become dominant. Trees including Willows (*Salix sp.*) and Birch Downy Birch (*Betula pubescens*) abundant but not yet dominant.

Bog woodland & wetland mosaic (WN7, FL, FS1, PF2, WN6)⁴

This habitat type was commonly found within depressions over large areas of expansive cut over raised bog. These areas where complex mosaics of submerged or semi-submerged plants interspersed within open deeper water. Waters levels are likely to fluctuate greatly during the year. Willow (*Salix Spp*) commonly formed dense stands within this mix along with reed fringe species including Common Reed (*Phragmites australis*), Bulrush (*Typha latifolia*) and Reed Canary-grass (*Phalaris arundinacea*). These habitats were noted as important feeding and resting grounds for a wide range of wetland bird species.

4.6.4 Scrub (WS1)

This broad category includes areas that are dominated by at least 50% cover of shrubs, stunted trees or brambles. The canopy height is generally less than 5 metres. Scrub develops as a precursor to woodland or as a result of recent disturbance and was often found in inaccessible locations, or on abandoned or marginal land. Scrub was common throughout the study area and has developed in a number of different circumstances. Scrub dominated by Bramble (*Rubus fruticosus agg.*), Gorse (*Ulex europaeus*). and Willow (*Salix spp*) was most common. Scrub was commonly found along the sides of the tracks between the track and areas of cutover bog. In many instances scrub was found to transition into bog woodland. Scrub often formed an impenetrable thicket and often could not be surveyed in detail. Trees in the scrub usually consisted of Willows (*Salix Spp.*), Downy Birch (*Betula pubescens*), Hawthorn (*Crataegus monogyna*), Blackthorn (*Prunus spinosa*) and Gorse (*Ulex europaeus*). Climbers included Dog-rose (*Rosa canina*), Bramble (*Rubus fruticosus agg.*), Ivy (*Hedera helix*), Honeysuckle (*Lonicera periclymenum*), Hedge Bindweed (*Calystegia sepium*), Cleavers

³ Broadly corresponds to Bog woodland (WN7) dominated - with pockets of open habitats (PF2, GS, HH1) on the Bord na Mona future habitat mapping database

⁴ Bord na Mona future habitat mapping database

(*Galium aparine*) and Bush Vetch (*Vicia sepium*). A herb layer and grasses were generally absent or minimal.

4.6.5 Raised bog (PB1)

Raised bogs are accumulations of deep acid peat (3-12 m) that originated in shallow lake basins or topographic depressions. A number of possible raised bogs still capable of regeneration were noted surrounding the track. These were noted as peat masses that were higher than the surrounding landscape and were usually found at the corners of areas of extensive cutover peat.

Raised bogs have links to a number of annex 1 habitat types mentioned below. As possible areas of raised bog noted during this survey were outside the zone of influence of works, no significant risks to any areas of raised bog were considered likely.

Links with Annex I: Raised bogs correspond to the priority habitat, ‘*active raised bogs (7110)’ if they are still capable of peat formation, or if peat formation has temporarily ceased. ‘Degraded raised bogs still capable of natural regeneration (7120)’ are also listed as an annexed habitat. These are damaged bogs where it is judged that the peat forming capability can be restored within 30 years. The annexed habitat, ‘depressions on peat substrates of the Rhynchosporion (7150)’ occurs in pockets as a sub-habitat of raised bog.

4.6.6 Conifer Plantation (WD4) and Mixed Conifer Woodland (WD3)

Fossitt (2000) describes this category as areas that support dense stands of planted conifers where the broadleaved component is less than 25% and the overriding interest is commercial timber production. The conifer plantations encountered were characterised by even-aged stands of trees that are usually planted in regular rows running adjacent to the proposed route and in the surrounds. Plantations consisted mainly of Sitka Spruce (*Picea sitchensis*), Scots Pine (*Pinus sylvestris*), Lodgepole Pine (*Pinus contorta*), Norway Spruce (*Picea abies*) and Larches (*Larix spp.*). Species diversity was generally low and single species stands are common.

Mixed Conifer Woodland as they appeared surrounding the study area was composed of mixed stands of the above species. Depending upon the density of planting and species composition these stands contained varying levels of shrub and understory plants.

The proportion of ground flora species was dependent upon the degree of light penetration and Bramble growth. In many instances Bramble (*Rubus fruticosus agg.*) dominated the understorey and smothered all other plants with the exception of those who could climb above the thicket like Ivy (*Hedera helix*), Honeysuckle (*Lonicera periclymenum*), Hedge Bindweed (*Calystegia sepium*), Cleavers (*Galium aparine*) and Bush Vetch (*Vicia sepium*). Bent grasses (*Agostis spp.*) were noted here.

4.6.7 Mixed broadleaved/conifer woodland (WD2)

This general category includes woodland areas with mixed stands of broadleaved trees and conifers, where both types have a minimum cover of 25%, and a maximum of 75%. Trees contained a mixture of both native or non-native species. In general non-natives were usually conifers including Sitka Spruce (*Picea sitchensis*), Lodgepole Pine (*Pinus contorta*), Norway Spruce (*Picea abies*) and Larches (*Larix spp.*) with the exception of the broadleaved species Beech (*Fagus sylvatica*) and Sycamore (*Acer pseudoplatanus*). The native broadleaved component usually contained Willows (*Salix Spp.*), Alder (*Alnus glutinosa*), Sessile Oak (*Quercus petraea*), Downy Birch (*Betula pubescens*), Holly (*Ilex aquifolium*), Rowan (*Sorbus aucuparia*), Elder (*Sambucus nigra*), Ash (*Fraxinus excelsior*) and Hazel (*Corylus avellana*). The mixture of these species was usually determined by seed sources, light exposure and degree of wetness. Small and immature broadleaved trees and shrubs were common in these habitat types. Understory plants varied greatly across the site depending on topography and acidity of the soil. Under conifers and where conifers had recently stood the following herb species were common; Rosebay Willowherb (*Epilobium angustifolium*), Foxgloves (*Digitalis purpurea*) and ferns including Bracken (*Pteridium aquilinum*) and Hard Fern (*Blechnum spicant*). Climbers; Honeysuckle (*Lonicera periclymenum*) and Ivy (*Hedera helix*) were also common. In areas where broadleaved trees dominated the ground flora layer Cleavers (*Galium aparine*), Bush Vetch (*Vicia sepium*), Meadow Vetchling (*Lathyrus pratensis*), Nettle (*Urtica dioica*) and Wood Sorrel (*Oxalis acetosella*) were noted. Species diversity was likely greater than that described here but could not be fully assessed given the time of the year.

4.6.8 Hedgerows (WL1) and Treelines (WL2)

Hedgerows are linear strips of shrubs, often with occasional trees. Some hedgerows may be overgrown or fragmented if management has been neglected, but where still considered in this category unless they have changed beyond recognition. Most hedgerows recorded during this survey were outside the study area or forming the boundary of the study areas e.g. along roadways or along the track side. Species composition varies with factors such as age, management, soils and exposure. Hedgerows usually contained plants such as Hawthorn (*Crataegus monogyna*), Blackthorn (*Prunus spinosa*), Gorse (*Ulex europaeus*), Holly (*Ilex aquifolium*), Dog-rose (*Rosa canina*), Bramble (*Rubus fruticosus agg*), Ash (*Fraxinus excelsior*), Hazel (*Corylus avellana*), Beech (*Fagus sylvatica*), Elder (*Sambucus nigra*), Elms (*Ulmus spp.*) and Willows (*Salix spp.*). In many instances mature trees over 10 meters tall were found within hedgerows. Climbing plants such as Ivy (*Hedera helix*), Honeysuckle (*Lonicera periclymenum*), Hedge Bindweed (*Calystegia sepium*), Cleavers (*Galium aparine*) and Bush Vetch (*Vicia sepium*) were common. Many hedgerows particularly those in front of houses or that ran along roads contained non-native shrub species including Fuchsia (*Fuchsia magellanica*), Box (*Buxus sempervirens*), Snowberry (*Symphoricarpos albus*), Cotoneaster (*Cotoneaster spp.*), Leyland cypress (*Cupressus x leylandii*) and Cherry Laurel (*Prunus laurocerasus*).

Treelines were also common features in the same context as hedgerows discussed above. Treelines usually had the same characteristics as hedgerows but contained more mature trees. Treelines species included: Beech (*Fagus sylvatica*), Downy Birch (*Betula pubescens*), Horse Chestnut (*Aesculus hippocastanum*), Sycamore (*Acer pseudoplatanus*), Ash (*Fraxinus excelsior*) and Alder (*Alnus glutinosa*).

4.6.9 Mixed Broadleaved woodland (WD1)

Fossit describes this general category of woodlands as areas with 75-100% cover of broadleaved trees, and 0-25% cover of conifers. Mixed broadleaved woodland is used in situations where woodland stands cannot be classified as semi-natural or are clearly planted this may include woodlands planted hundreds of years before as is often the case in and around old estates. Beech (*Fagus sylvatica*) was a common inclusion in this habitat type along with Willows (*Salix Spp.*), Alder (*Alnus glutinosa*), Sessile Oak (*Quercus petraea*), Downy Birch (*Betula pubescens*), Holly (*Ilex aquifolium*), Rowan (*Sorbus aucuparia*), Sycamore (*Acer*

pseudoplatanus), Elder (*Sambucus nigra*), Ash (*Fraxinus excelsior*) and Hazel (*Corylus avellana*) in varying quantities. The ground layer within this habitat type was variable and often contained large numbers of sapling Ash (*Fraxinus excelsior*), Elder (*Sambucus nigra*) and Sycamore (*Acer pseudoplatanus*).

Bramble (*Rubus fruticosus agg.*) was dominant or abundant in most areas of Mixed Broadleaved woodland along Wood Speedwell (*Veronica montana*), Ivy (*Hedera helix*), Herb-Robert (*Geranium robertianum*), Bush Vetch (*Vicia sepium*), Enchanter's-nightshade (*Circaea lutetiana*), Wood Sorrel (*Oxalis acetosella*) and Bracken (*Pteridium aquilinum*).

In wet areas where streams and ditches were found or where the ground level was closer to the water level wet woodland areas occurred. Many of these areas have been classified as Wet Willow Woodland (WN6) and these are discussed in detail below. Areas of broadleaved woodland that were wet but did not fit into that category as they were not permanently waterlogged are described here:

Woodlands dominated by Willows (*Salix Spp.*), Alder (*Alnus glutinosa*) and Downy Birch (*Betula pubescens*) was commonly found in depressions bordering the site and along the edge of areas of cutover bog.. Alder (*Alnus glutinosa*) and Willow usually dominated the canopy with grasses including creeping bent (*Agrostis stolonifera*) often forming a uniform mat in the understory. Herbs included Water Mint (*Mentha aquatica*), Water forget-menots (*Myosotis spp.*), Meadowsweet (*Filipendula ulmaria*) and Rushes (*Juncus Spp*). Many of these areas graded into true Wet willow woodland or areas of wet grassland.

4.6.10 Wet willow-Alder-ash woodland (WN6)

According to Fossitt (2000) this broad category includes woodlands of permanently waterlogged sites that are dominated by Willows (*Salix sp.*), Alder (*Alnus glutinosa*) or Ash (*Fraxinus excelsior*), or by various combinations of some or all of these trees. It includes woodlands of lakeshores, stagnant waters and fens. Woodlands of this habitat types have a ground flora that is often 'grassy' in appearance with abundant remote Sedge (*Carex remota*) and Creeping bents (*Agrostis stolonifera*). Other common components of the field layer include Bramble (*Rubus fruticosus agg.*), Creeping Buttercup (*Ranunculus repens*),

Meadowsweet (*Filipendula ulmaria*), Marsh-bedstraw (*Galium palustre*), Yellow pimpernel (*Lysimachia nemorum*) and Lady-fern (*Athyrium filix-femina*).

Surrounding the study area these woodlands were typically found around where rivers and drainage ditches were close to ground level creating permanent or near permanent flooded conditions for most of the year. Ground flora was quite typical of WN6 woodlands in places with common components including Reed Canary-grass (*Phalaris arundinacea*), Remote Sedge (*Carex remota*), Creeping Buttercup (*Ranunculus repens*), Marsh-bedstraw (*Galium palustre*). Other species commonly occurring in this habitat included Water Mint (*Mentha aquatica*), Marsh Thistle (*Cirsium palustre*), Purple loosestrife (*Lythrum salicaria*), Wild Angelica (*Angelica sylvestris*) and Lady-fern (*Athyrium filix-femina*).

Fossitt notes that “wet willow-Alder-ash woodland (WN6) may contain links with the priority Annex I habitat Alluvial forests with *Alnus glutinosa* and *Fraxinus excelsior* (*Alno-padion*, *Alnion incanae*, *Salicion albae*) (91E0)”.

4.6.11 Depositing lowland rivers (FW1) and Eroding upland Rivers (FW1)

Rivers within the study area were found crossing the route at a number of occasions. In most instances, aquatic vegetation was only occasional and typically species here included Fool’s Water Parsley (*Apium nodiflorum*), Reed Canary Grass (*Phalaris arundinacea*) and unbranched Bur-reed (*Sparganium emersum*) with water starwort (*Callitriche sp.*) and Duckweed (*Lemna sp.*) occurring where the flow was particularly slow.

4.6.12 Drainage ditches (FW4)

This category includes linear water bodies or wet channels that are entirely artificial in origin, and some sections of natural watercourses that have been excavated or modified to enhance drainage and control the flow of water. Drainage ditches either contained water (flowing or stagnant) or were wet enough to support wetland vegetation. Drainage ditches were common throughout the site and were usually associated with drainage of peat formations. These varied in sizes and significance. Smaller ditches contend little Fool’s Water-cress (*Apium nodiflorum*), Bramble (*Rubus fruticosus agg.*), Creeping Buttercup (*Ranunculus repens*) and

Lady-fern (*Athyrium filix-femina*). Other large drainage ditches were dominated by Duckweed (*Lemna* sp.) and also contained Giant Hogweed (*Heracleum mantegazzianum*).

4.6.13 Dry meadow and grassy verges (GS2)

Dry meadow and grassy verges (GS2) primarily occurred on unmanaged land associated with roadside verges, paths and lands unmanaged for recreation or agriculture. This habitat type often merged between areas of recolonising bare ground, hedgerows, scrub and treelines.

These grasslands were typically overgrown, contained a high proportion of coarse grasses such as Cock's-foot (*Dactylis glomerata*), Bents (*Agrostis* spp.), False Oat-grass (*Arrhenatherum elatius*) and Purple Moor-grass (*Molinia caerulea*). The herb layer contained mainly tall growing or climbing herbs including common Hogweed (*Heracleum sphondylium*), Hedge Bindweed (*Calystegia sepium*), Bush Vetch (*Vicia sepium*) and Common Knapweed (*Centaurea nigra*). In wetter areas Bog Asphodel (*Narthecium ossifragum*) and Devil's-bit Scabious (*Succisa pratensis*) were commonly recorded.

Where disturbance was minimal or along the unkept banks of the trainlines species diversity was high in places including Silverweed (*Potentilla anserina*), St John's Wort (*Hypericum perforatum*), Selfheal (*Prunella vulgaris*), Common Bird's-foot Trefoil (*Lotus corniculatus*), Cat's-ear (*Hypochoeris radicata*). was often abundant. In wetter areas Bog Asphodel (*Narthecium ossifragum*) and Devil's-bit Scabious (*Succisa pratensis*) were commonly recorded. The dead stalks of Orchids were found in and along a number of verges. These could not be indemnified given the time of year but were likely common spotted orchids.

4.6.14 Bog Woodland (WN7)

This category can include woodlands of intact ombrotrophic bogs, bog margins and former cutover bog. Bog woodland typically occurs on deep acid peat that is relatively well drained in the upper layers and is commonly associated with former turf cutting activity or drainage. It may also occur in areas of cutover bog where most of the peat has been removed. Bog woodland was common surrounding the study area. Downy Birch (*Betula pubescens*) and Willows (*Salix* spp.) usually dominated and often formed pure stands. In particularly well developed areas of bog woodland other trees and shrubs can including Holly (*Ilex aquifolium*),

Rowan (*Sorbus aucuparia*), Scots Pine (*Pinus sylvestris*) and Oaks (*Quercus spp.*) were noted. Dwarf shrubs such as Ling (*Calluna vulgaris*) or Bilberry (*Vaccinium myrtillus*) were commonly found in the field layer of this habitat usually in association with Bracken (*Pteridium aquilinum*), Bramble (*Rubus fruticosus agg.*), Ivy (*Hedera helix*), Purple Moor-grass (*Molinia caerulea*) and Honeysuckle (*Lonicera periclymenum*).

4.6.15 Wet grassland (GS4)

Areas of wet grassland varied across the site. Significantly large areas of this habitat type were recorded surrounding the site and were associated with low intensity agriculture. These were generally dominated by Rushes (*Juncus effusus*, *J. acutiflorus*, *J. articulatus*, *J. inflexus*) and Sedges (*Carex Spp*). Grasses included Yorkshire-fog (*Holcus lanatus*) and Creeping Bent (*Agrostis stolonifera*) were noted. The herb component usually contained Creeping Buttercup (*Ranunculus repens*), Marsh Thistle (*Cirsium palustre*), Silverweed (*Potentilla anserina*), Meadowsweet (*Filipendula ulmaria*), Water Mint (*Mentha aquatica*) and Horsetails (*Equisetum spp.*). Yellow Iris (*Iris pseudacorus*) dominated wet grassland was also recorded in a number of locations.

Table 5: Other Habitats noted around the site

Habitat Types	Fossit Code
Stone walls and other stonework	BL1
Improved Grassland	GA1
Amenity Grassland	GA2
Dense bracken	HD1
Ornamental/non-native shrub	WS3
Immature woodland	WS2

4.7 Mammal Activity

Populations of Badgers likely hold territories that include some portions of the Longford Greenway route. No setts were recorded during the fieldwork portion of this study. No evidence of Otter activity was also recorded. Otter are likely to be present within the Royal Canal that the Greenway crosses and possibly some of the rivers it also crosses. Pine Marten is a protected species that has extended its range in Ireland in recent years. Signs including scat marking were recorded in a number of locations along the fringes of woodlands and bogs. Red Squirrel has similarly expanded its range in recent times and however no signs of recent Red Squirrel activity were recorded.

4.8 Breeding Birds

All bird species seen and heard during surveys were recorded. The greater majority of the birds recorded were of least conservation concern (Birdwatch Ireland) but 2 no. species were 'red list' species (Golden Plover and Meadow Pipit), being of highest conservation concern. The vast wetland areas that are developing around the site are likely to become important breeding and nesting areas for a number of wetland and wading bird species.

4.9 Bats

Surveys for sites suitable for bat roosts (e.g. buildings or large mature trees) were also carried out. No likely roost sites were recorded within the footprint of the Greenway route. Some suitable trees were noted surrounding the route in neighbouring farms. Much suitable foraging area for several bat species occurs over the area surveyed.

5 ARTICLE 6(3) SCREENING ASSESSMENT

This Screening assessment questionnaire (EC, 2001) is used to assess whether this project has the potential to impact upon Natura 2000 sites. The consideration criteria of potential for impacts on Natura 2000 sites is detailed below.

5.1 Article 6(3) Assessment Criteria

5.1.1 Description of the individual elements of the project likely to give rise to impacts on the Natura 2000 site.

It is not considered likely that the proposed development is likely to give rise to impacts to and Natura designated sites.

Minor risk of disturbance to designated species using the sites may exist during the construction operations for the Greenway through noise and light pollution but these would likely be less significant than same during peat cutting activities.

5.1.2 Description of any Likely Direct, Indirect or Secondary Impacts of the Project on the Natura 2000 Site.

Any likely direct, indirect or secondary impacts of the proposed development, both alone and in-combination with other plans or projects, on the SAC by virtue of the following criteria: size and scale, land take, distance from the Natura 2000 site or key feature thereof, resource requirements, emissions, excavation requirements, transportation requirements and duration of construction, operational and decommissioning phases of the works are detailed in the Table 5 below.

Table 6: Assessment of Likely Impacts

ASSESSMENT OF LIKELY IMPACTS	
Size and scale	The MSWP Greenway covers a very large area at 74 linear km but is proposed to be less than 5 meters wide (3m on average). This includes bogs, roads, tracks and train lines. No Natura 2000 sites occur within the proposed route area. Therefore no significant impacts to any Natura designated sites owing to size or scale of the proposed works exist.
Land-take	None of the proposed route is planned to take place within the boundary of any Natura 2000 sites therefore land-take is nil.
Distance from the Natura 2000 site or key features of the site;	None of the proposed route is planned to take place within the boundary of any Natura 2000 sites. The nearest designated site is Lough Ree 0.5km from the proposed route.
Resource requirements (water abstraction etc.);	No materials for construction will be sourced from within any Natura 2000 sites. No water will be abstracted from the site during the construction or operation of the development. Therefore, there will be no impact on any Natura 2000 sites as a result of resource requirements.
Emissions (disposal to land, water or air);	No emissions are predicted as likely that will impact upon any Natura 2000 sites beyond those normally associated with any trail development projects.
Excavation requirements;	As none of the proposed track construction will take place inside any Natura 2000 sites, excavation requirements are nil.
Transportation requirements;	Access to much of the sites can take place using pre-existing roads, industrial rail line routes and laneways and will not impact any Natura 2000 sites.
Duration of construction, operation, decommissioning, etc.;	Duration of operations not known at time of writing. It is likely that the construction period would be over 12 months. The operational phase of the Greenway would be indefinite.

Timing of works	Works shall be timed to minimise disturbance to native species. Track clearance in woodland or scrub areas should take place outside of the breeding season for birds. Works shall be carried out in dry conditions and not during/immediately after flooding incidents. Works shall not be permitted after dusk or before dawn to avoid impact upon crepuscular species.
Cumulative or In-combination Impacts with other Projects and Plans	There are no other projects or plans known to the author that would, in-combination with the proposed works have significant impacts on any Natura 2000 site.

5.2 Description of any Likely Changes to the Natura 2000 Sites

Any likely changes to the Natura 2000 site are described in the table below with reference to the following criteria: reduction of habitat area, disturbance to key species, habitat or species fragmentation, reduction in species density, changes in key indicators of conservation value and climate change.

Table 7: Likely changes to the Nature 2000 site

Likely Changes to the Natura 2000 Site	
Reduction of habitat area	<p>No work will take place within the boundary of any Natura 2000 sites. Works will take place in a number of different habitat types including cutover bog, scrub, recolonising bare ground, improved grassland and mixed woodland. No habitats identified within the works area are those of significance for the two qualifying interest species of any Natura 2000 sites nearby.</p> <p>Some areas of what appeared to be intact raised bog were noted surrounding the proposed route in a number of locations. Raised bogs is one of the qualifying interests of a number of local Natura 2000 sites. However these areas are</p>

	outside the works area for this project. Therefore risks are considered negligible.
Disturbance to key species	One of the qualifying interests of the nearest Natura 2000 site; Lough Ree was recorded during survey: Golden Plover (<i>Pluvialis apricaria</i>). This was noted flying over the route and within areas of open bogland surrounding the route in a number of locations. This species was recorded at a significant distance from the proposed works area and looked to only be using the site for temporary feeding. Risk of disturbance to this species is considered low.
Habitat or species fragmentation	There will be no works within any SAC or SPA. No impacts on any qualifying species are predicted. Therefore there will be no impacts within any Natura 2000 sites with regard to habitat or species fragmentation.
Reduction in species density	No reduction in species density is considered likely within any SAC or SPA as a result of the proposed works.
Changes in key indicators of conservation value (water quality etc.);	Habitat integrity is the most relevant of the key indicators of conservation value with regard to the nearest Natura 2000 site. However, the risk of any significant impacts on water quality within this site during the construction phase can be excluded due to nature of the works and absence of any hydrological connectivity.
Climate change	No effects to the site as a result of or in combination with enhanced climate change are predicted as a result of the proposed development.

5.2.1 Likelihood of Interference with the key relationships that define the structure and function of the Natura 2000 Site as a whole:

It is considered that there will be no long-term residual impacts from the proposed works upon the key relationships that define any local Natural 2000 sites. Appropriate measures will be put in place during the works phase to prevent any possible impacts during construction. A Construction Environmental Management Plan will be implemented in order to adhere to best

practice construction methods and prevent any impacts on water quality or to designated species.

5.2.2 Indicators of Significance as a Result of the Identification of Effects

Indicators of significance as a result of the identification of effects as set out below in terms of loss, fragmentation, disruption, disturbance and changes to the key elements of site.

Table 8: Indicators of significance

Indicators of Significance	
Loss	There will be no loss of habitat within any Natura 2000 site as a result of the proposed works. It is not anticipated that the loss of any species of conservation interest will occur as a result of the proposed works due to injury or mortality.
Fragmentation	No habitat fragmentation to any Natura 2000 site is predicted.
Disruption	No significant risk of disruption to any Natura 2000 sites are likely during this project.
Disturbance	As above
Change to key elements of the site (e.g. water quality etc.)	No long term changes to any key elements of any Natura 2000 site are predicted as a result of the proposed development.

5.2.3 Description of any Likely Significant Impacts or Indeterminate Impacts of the Project on the Natura 2000 Site

Based on a consideration of the likely impacts arising from the proposed works and a review of their significance in terms of the conservation interests on Lough Ree SPA and SAC, no significant impacts have been identified as *likely* on the Natura 2000 site as a result of the proposed development.

5.3 FINDINGS OF ARTICLE 6(3) SCREENING ASSESSMENT

Name of project or plan: Mid Shannon Wilderness Park Greenway

Name and location of Natura 2000 Site: *Proposed works are to take place on the existing industrial rail bridge crossing of The River Shannon at Cloontuskert in County Roscommon to Kilnacarrow in County Longford. The Longford section of the Greenway will continue across a 73km extent of existing industrial train lines, roads, tracks south of Longford town and North of Ballymahon. The nearest Natura 2000 sites are Lough Ree SPA and Lough Ree SAC*

Description of project or plan: A 89m section of Greenway (a cycleway that caters for both pedestrians and cyclists in a recreational environment) is proposed in Cloontuskert, County Roscommon, including a crossing using the existing disused industrial Rail bridge into Co. Longford at Kilnacarrow. The Longford section of the Greenway will continue across a 73km extent of existing industrial train lines, roads, tracks south of Longford town and North of Ballymahon.

This proposed Greenway will likely comprise a 3m wide track, with 1m buffer strips on either side. The greenway will be constructed almost entirely within lands belonging to Bord na Móna.

The project will involve the clearance of vegetation in some areas but will generally consist of clearance and improvement works to the existing Bord na Móna industrial trainline. Also involved will be the installation of signage, seating areas and associated works.

Is the project or plan directly connected with or necessary to the management of the site?:

The project is not directly connected with or necessary to the management of any Natura 2000 sites.

Are there no other projects or plans that together with the project or plan being assessed could affect any Natura designated sites?

There are not any current projects or plans in County Roscommon that could result in cumulative impacts with the development proposed. A number of other projects were reviewed via the Longford and Roscommon County Council Planning application finders. The

Bord na Móna Biodiversity Action Plan (2016-2021) was also reviewed. It is considered that the proposed Greenway is in line with long-term environmental policies drawn up to avoid or negate environmental impacts. Therefore, no cumulative or in combination impacts arising from these plans is predicted. No other plans or projects were noted that in combination with this proposed project are likely to lead to impacts to any designated sites.

5.3.1 Assessment of Significance of Effects

Describe how the project or plan (alone or in combination) is likely to affect the Natura 2000 site:

The proposed project will not significantly affect any Natura 2000 sites.

Explain why these effects are not considered significant:

- Scale and duration of works are limited.
- No physical connectivity to any Natura 2000 sites
- Nature of the proposed development.

Direct impacts upon the Natura 2000 Site:

- None Predicted

Indirect impacts upon the Natura 2000 Site:

- Potential for temporary disturbance to bird species that may use areas of cutover bog as a result of the construction works.

5.4 Data collected to carry out the assessment

The following sources of data were employed:

- Environmental Protection Agency Database
- NBDC database (www.biodiversity.ie)
- NPWS protected species database and online mapping
- Historical OSI Maps
- NPWS protected species database and online mapping.
- NPWS Site Synopsis and Conservation Objectives Lough Ree SPA and SAC.
- Roscommon and Longford County Council Planning Database

Level of assessment completed

- Desk Study
- Site visits and surveys in October 2020
- JNCC Phase 1 Habitat Assessment
- Fossitt Level III Habitat Recording

5.5 Overall Conclusions

Impacts to the Lough Ree SPA and SAC and or any other Natura 2000 designated sites as a result of the proposed Greenway construction are extremely unlikely. A possible minor risk of temporary disruption during construction to a number of designated bird species for which Lough Ree has received its designation may exist. Again, this is extremely unlikely. It is concluded that a full Appropriate Assessment is not required.

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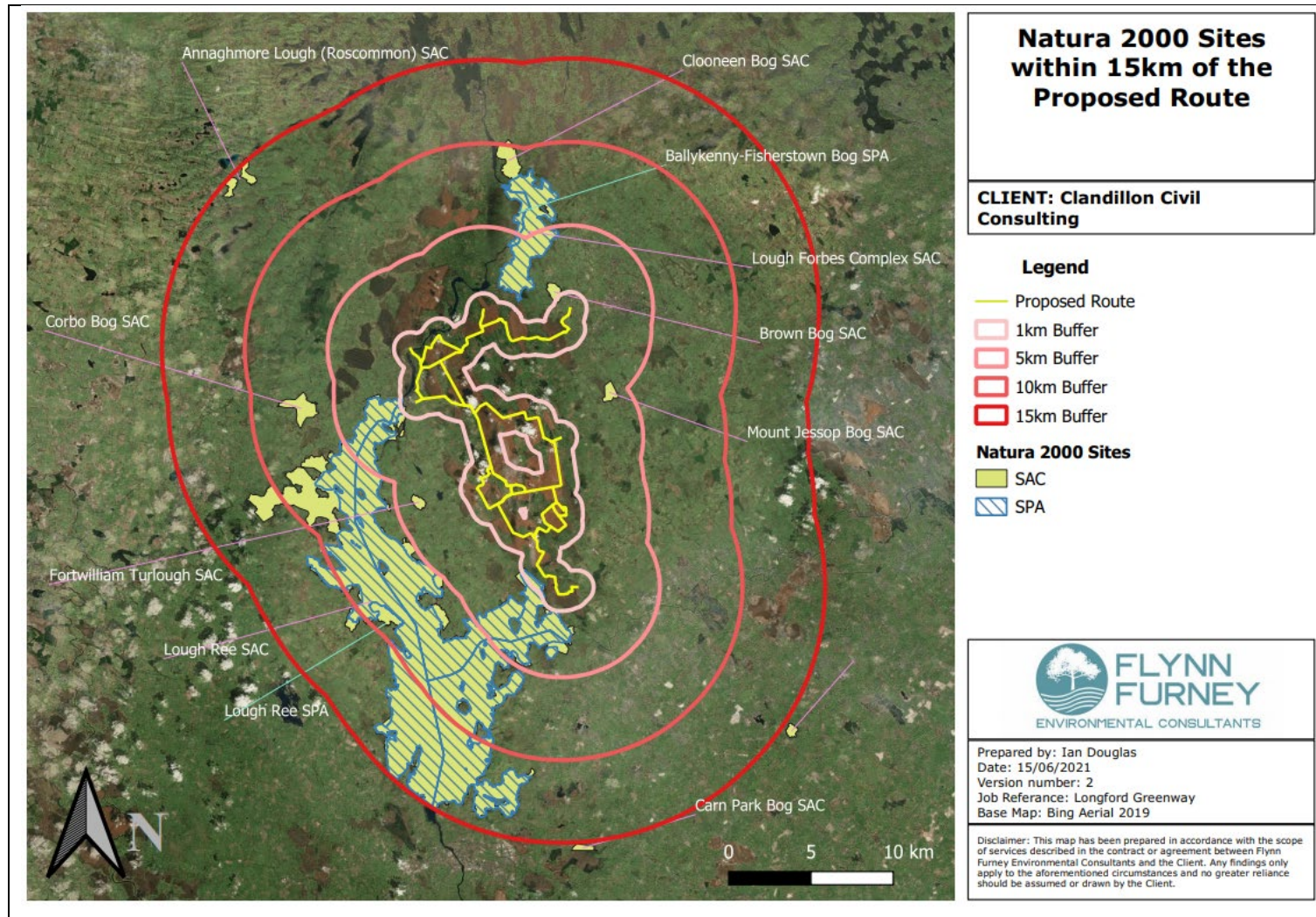
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Appendix A: Designated sites with 15km of the proposed greenway route



APPENDIX 6 – PLANNING REPORT

Mid-Shannon Wilderness Park Greenway Planning Statement

Document No: MSWP-RP-PS-0001-P06



DATE: 23/08/2021

Client: Roscommon County Council

Project: Mid-Shannon Wilderness Park Greenway



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ISSUE AND REVISION RECORD

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DATE: 23/08/2021

Client: Roscommon County Council

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1 INTRODUCTION

1.1 Purpose of this Document

The Planning Partnership has been retained by Clandillon Civil Consulting (CCC), as part of a commissioned consultancy team to prepare this Planning Statement in support of Part VIII application for submission to Roscommon County Council for the development of a proposed new greenway at Cloontuskert. These works will consist of the construction of approximately 89m of pedestrian/cyclist greenway from the existing bridge crossing from Kilnacarrow in County Longford, facilitating potential connections onto the public road into the future and described in detail in the respective statutory notices and supporting drawings and assessments that accompany this statement. The existing bridge at Kilnacarrow will be repurposed as part of the development.

The Longford section of the greenway continues through the Bord na Móna bogs of south Longford (the Mid Shannon Wilderness Park) and is further detailed in a dedicated Part VIII process that will run in tandem in Longford County Council.

The application by way of a Local Authority Own Development is presented in association with Clandillon Civil Consulting (CCC), who have undertaken a preliminary design and environmental evaluation. The supporting general layout drawings and the accompanying suite of documents which includes; an Environmental Impact Assessment Screening Report, a Flood Risk Assessment Report, an Ecological Impact Assessment Report and a Cultural Heritage Assessment further consider the proposals. Additionally, Flynn Furney, Environmental Consultants, have carried out a Stage 1 Appropriate Assessment (AA) Screening Report. This Planning Statement presents the planning rationale and statutory context for the proposed greenway works within the identified Mid Shannon Wilderness Park.

The proposed greenway works are presented as 'plan-led' in terms of available spatial planning policy on a national, regional and local scale. The proposals represent the sensitive, holistic and expansive re-use of Bord na Móna boglands with the aim of expanding the greenway provision in County Roscommon and enhancing its position within Ireland's Hidden Heartlands as a significant tourism destination, whilst extending and linking the broader National Cycle Network. The relevant assessments have been presented on a joint basis for each county to ensure that cumulative impacts have been comprehensively considered in each respective Part VIII for Roscommon and Longford.

2 DEVELOPMENT SPECIFICS

2.1 Proposals, Location and Context

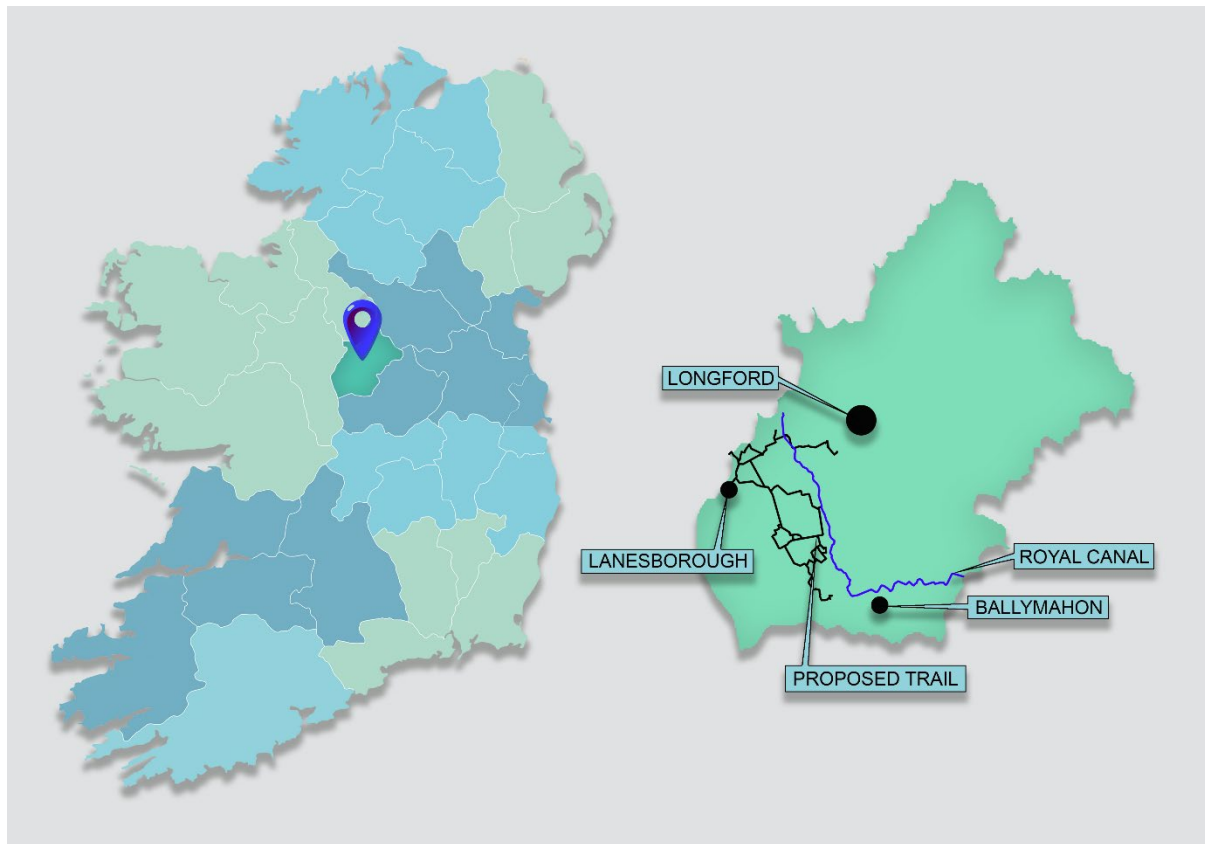


Figure 1: MSWP Greenway – Scheme Location

This Planning Statement has been prepared to inform a Part VIII statutory consent process for the Mid-Shannon Wilderness Park Greenway, a proposed new greenway crossing the River Shannon north of Lanesborough-Ballyleague at Cloontuskert in County Roscommon. The Roscommon element of this project, to which this Part VIII process relates, consists of the repurposing of an existing disused rail bridge crossing at Cloontuskert in County Roscommon to Kilnacarrow in County Longford (Subject to a separate Part VIII process in Longford County Council). A 89m section of greenway, facilitating pedestrians and cyclists, will be constructed in Cloontuskert along existing disused Bord na Mona industrial rail lines to facilitate future access on the western bank of the River Shannon.

In the interests of clarity and to ensure that potential cumulative impacts are addressed, the entire planning statement, addressing the Longford Project elements (which are the subject of a separate Part VIII process in County Longford) in addition to the Roscommon proposals, have been included as part of this report.

The aim of the project is to expand greenway provision in Counties Roscommon and 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 above.

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:

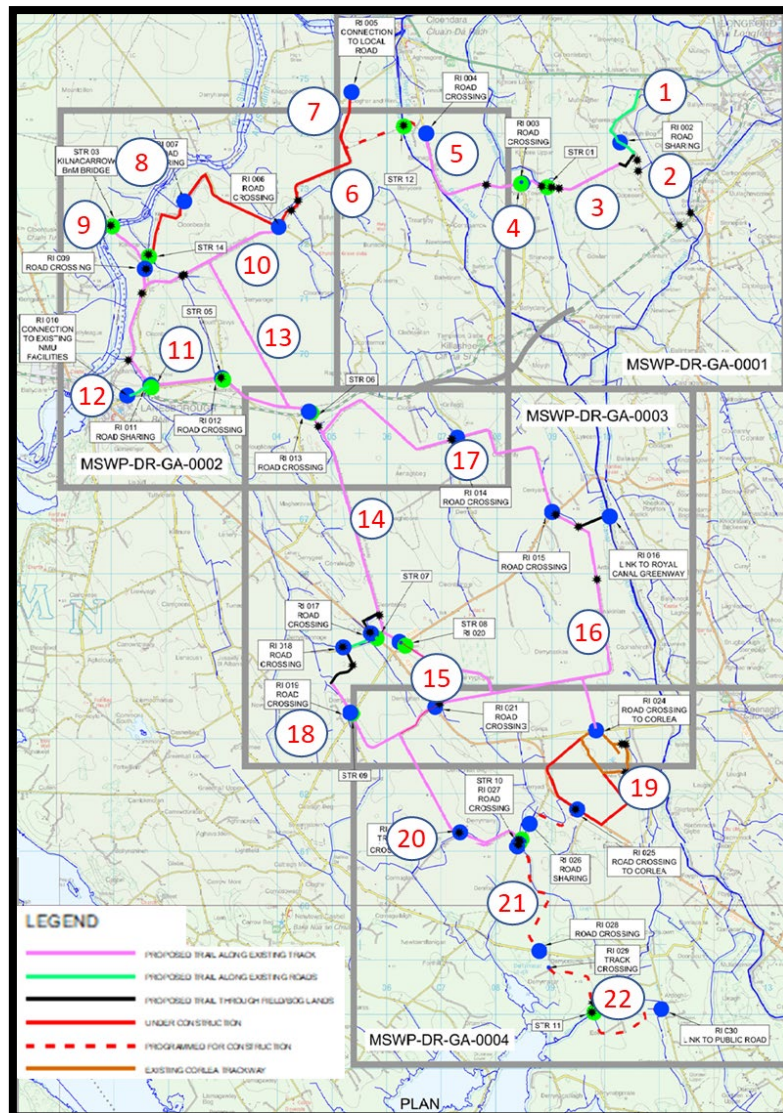
- 61 km of greenway along decommissioned Bord na Móna rail lines;
- 6 km of greenway along existing roads;
- 6 km of greenway through existing cutaway bog.

Of the 73 km, 23.4 km of the proposed greenway, located in Co. Longford have been subject to successful Part 8 planning applications. Existing planning applications account for 3km of the 6km of the greenway which cross cutaway bog.

General Arrangement drawings which illustrate the route and distinguish between the lengths which follow existing rails, those that follow existing roads, those that cross land and those that were subject to granted Part 8 planning applications are provided as part of this application.

The delivery of the Mid Shannon Wilderness Park greenway will be dependent on the availability of funding from a number of different sources, including the Department of Transport, the Department of Tourism, Culture, Arts, Gaeltacht and Sport and the Department of Rural and Community Development, under the Outdoor Recreation Infrastructure Scheme, Just Transition as well as own resources from Longford County Council and other funding which may become available during implementation of the project.

Figure 1.1: Proposed Trail Route with a Total distance of 74 Kilometres



The trail passes through what is an almost entirely rural landscape with other bogs, woodlands and pasture-based agriculture being the main land uses surrounding the site. The greater majority of the route is located within lands owned by Bord na Móna.

Works involved with this project include clearance, track widening, removal of old trainlines, removal and stock piling of material and the laying of a new track surface, resurfacing of existing roads and the provision of signage and street furniture.

3 PLANNING POLICY CONTEXT

The following presents a brief synopsis of the relevant land-use planning policy background and objectives applicable to the proposals and referred at national, regional and local policy levels.

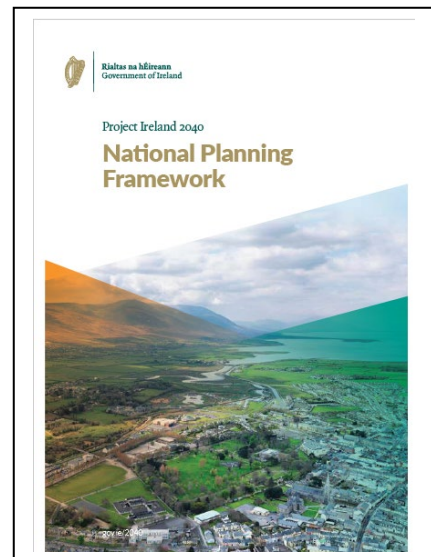
3.1 National Planning Framework – Project Ireland 2040

National Policy Objective 21: *Facilitate tourism development and in particular a National Greenways, Blueways and Peatways Strategy, which prioritises projects on the basis of achieving maximum impact and connectivity at national and regional level.*

National Policy Objective 27: *Ensure the integration of safe and convenient alternatives to the car into the design of our communities, by prioritising walking and cycling accessibility to both existing and proposed developments and integrating physical activity facilities for all ages.*

National Policy Objective 58: *Integrate planning for Green Infrastructure and ecosystem services will be incorporated into the preparation of statutory land use plans.*

National Policy Objective 64: *Improve air quality and help prevent people being exposed to unacceptable levels of pollution in our urban and rural areas through integrated land use and spatial planning that supports public transport, walking and cycling as more favourable modes of transport to the private car, the promotion of energy efficient buildings and homes, heating systems with zero local emissions, green infrastructure planning and innovative design solutions.*

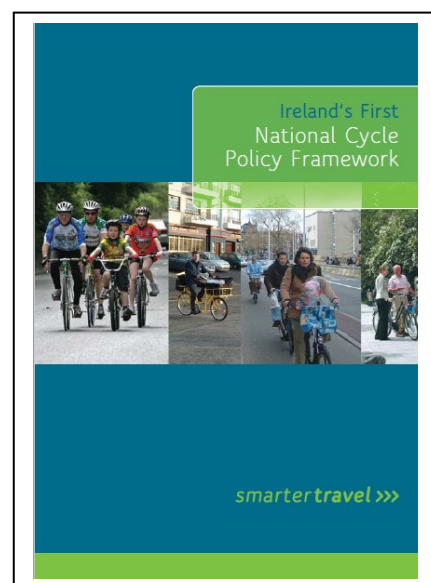


3.2 National Cycle Policy Framework (2009)

The Government is committed to developing cycling as one of the most desirable modes of travel, it being good for your health, the economy and the environment. This National Cycle Policy Framework (NCPF) sets out objectives to the year 2020 to achieve its vision.

Ireland currently does not have a National Cycle Network on the ground. However, Fáilte Ireland has produced its Strategy for the Development of Irish Cycle Tourism (Fáilte Ireland, 2007). While the main target market of the cycle tourism strategy is visitors – both overseas and domestic – the secondary target market is recreational cyclists.

While the overall framework of the tourism network has been identified, there is more work to be carried out to identify further routes, particularly in the Midlands and particularly to use existing traffic free routes such as the canal and river tow paths. There is also further work to be carried out in identifying which sections of the extensive network



of disused rail-lines would be most suitable to be converted to high quality, traffic-free routes suitable for cyclists of all ages and abilities.

Objective 3: Provide designated rural cycle networks especially for visitors and recreational cycling.

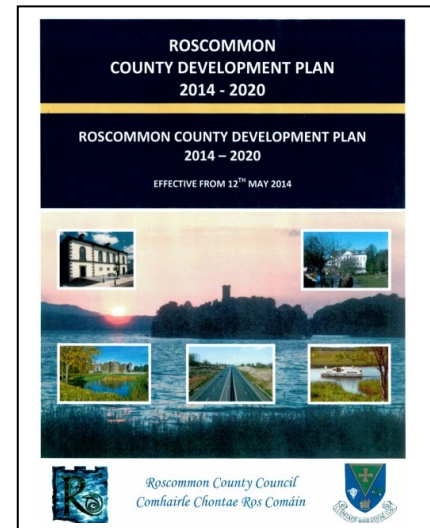
3.3 Roscommon County Development Plan 2014-2020

Section 4.1.2 – Cycling and Walking

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 stringer 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.

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.

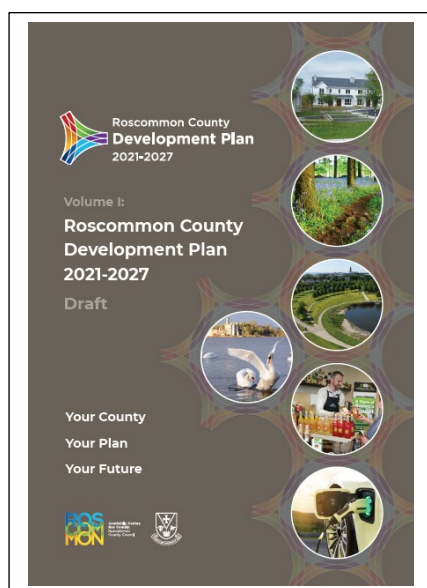
Objective 4.21: Provide a cycleway and walkway crossing through South Roscommon as part of the proposed Dublin to Galway Cycleway Network including all related signage, way marking and associated works and connections.



3.4 Draft Roscommon County Development Plan 2021-2027

Chapter 6: Economic Development - Section 6.7 Tourism

The increased demand for activity lead tourism over the past decade has resulted in walking and cycling becoming increasingly popular activities.



The Council recognises the numerous benefits arising from the further development of walking and cycling routes, in particular as a tourism product with significant potential to attract overseas visitors, for local communities in terms of economic benefits, and for all users as an amenity for physical activity and a contributor to health and wellbeing. Accordingly, it is Council policy to continue to expand and create an integrated network of greenways across the County and maximise pedestrian and cycle access to same.

ED 6.24: Collaborate with relevant state bodies, neighbouring Local Authorities and local communities in delivering a UNESCO accredited, Biosphere for Lough Ree and the Mid- Shannon Wilderness Park.

ED 6.26: Facilitate the creation of a network of cycling/walking routes (including existing footpaths and walking routes, off road routes, local walks, tourist walks, medium and long distance

walking routes) within the county.

ED 6.27: Develop linkages between existing and new trails, particularly those with a historic association in adjoining counties, in cooperation with Inland Waterways, Fáilte Ireland and with other relevant stakeholders to provide linkages with trails in adjoining counties in partnership with their Councils.

Section 10.15 Green Infrastructure Strategy

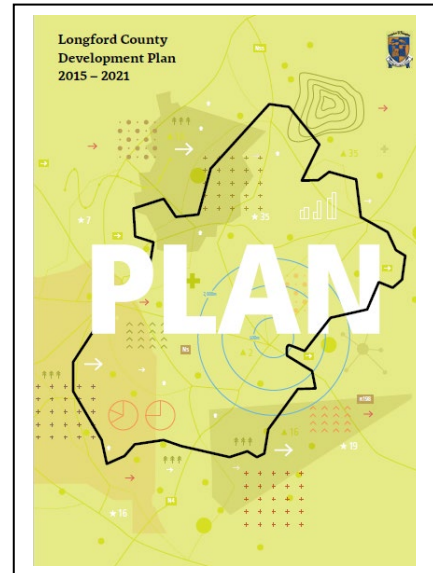
NH 10.25: Support the development of strategic greenways, blueways and peatways in the county in accordance with the Strategy for the Future Development of National and Regional Greenways (2018).

3.5 Longford County Development Plan 2015-2021

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' '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.



TOU 2: The Council recognises the potential of all peatland bogs in the County, including industrial peatlands, in terms of providing opportunities for recreation and tourism thus creating new features of local distinction. Where appropriate the Council will cooperate with adjoining local authorities including Roscommon and Westmeath County Council to facilitate, subject to the requirements of the Habitats Directive, this potential in areas where bogs straddle the County boundary.

The development of the bogs for amenity purposes will not exclude them for other purposes such as the generation of renewable energy including wind generation. It is envisaged that these types of activities can be mutually inclusive and developed in an integrated way.

TOU 3: The Council will seek to facilitate and promote, where appropriate the development of the Mid Shannon Wilderness Park and Corlea Archaeological and Biodiversity Project.

TOU 4: The Council will promote the growth of the County's indoor and outdoor tourism sector and the necessary supportive facilities, providing an array of activities in order to diversify the range of tourist experiences available in Longford and extend the tourist season.

TOU 20: a) The Council shall promote and encourage the development of "Honeypot" tourism developments at the locations indicated below.

Mid Shannon Wilderness Park Villages

Lanesboro – River Shannon, Lough Ree, Commons North. In particular with a view to developing the amenity area to the south of the town adjoining Lough Ree for visitor and tourism development and a lake side walking/cycling route to Newtowncashel and Ballymahon. Also the possible bridging point for a walking cycling route to Roscommon and the west.

TOU 23: *The Council shall continue to engage with the following agencies:*

– *National Parks and Wildlife Service, Coillte, ESB/Bord Na Mona with regard to the potential for tourism related uses of cutaway bogland.*

Section 5.1.3 – Pedestrian and Cyclists

PED 5: *The Council shall investigate the provision of dedicated cycle and pedestrian routes along routes of high amenity.*

PED 6: *The Council shall support the appropriate provision of cycle strategies for settlements throughout the County and where necessary and appropriate, reserve lands for the provision of off-road cycling tracks and cycling/pedestrian infrastructure as identified as part of any such cycling strategy prepared.*

PED 7: *The Council shall support the appropriate provision of cycle strategies for settlements throughout the County and where necessary and appropriate, reserve lands for the provision of off road cycling tracks and cycling/pedestrian infrastructure as identified as part of any such cycling strategy prepared.'*

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.'*

6.2.2.7 Inland Lakes and Waterways

ILW 10: *The Council shall encourage and promote the investigation and use of the potential of the Canal towpaths for the provision of designated walking and cycle routes and wildlife corridors for recreational, amenity and educational purposes and the promotion of links with any further designated walking, cycling and wildlife routes existing or proposed throughout the County. This should be carried out in the context of an important resource for the population of the County and with a view towards the promotion of sustainable tourism projects in County Longford.*

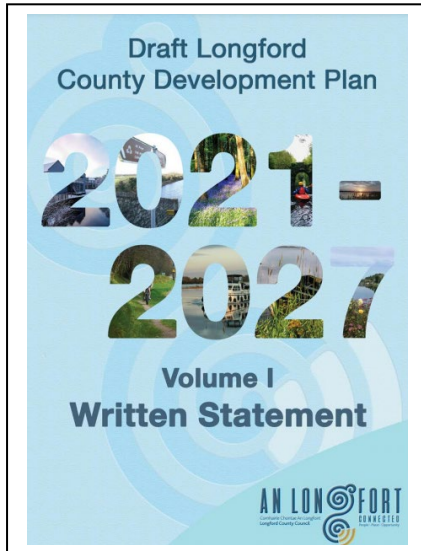
Annex 6 Mid -Shannon Wilderness Park Plan – Section 2.3

'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, 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 rewatered and colonised 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.

3.6 Draft Longford County Development Plan 2021-2027

CPO 5.51: Support and promote the heritage value of the rail network and the retention and enhancement of disused rail lines with the uses to provide for tourism, amenity and sustainable transports uses such as cycleways and walkways.

CPO 5.55: Work with the relevant statutory bodies and other relevant stakeholders, to improve on the existing level of infrastructure and facilities for walking and cycling.



CPO 5.56: Identify and implement a strategic, coherent and high-quality cycling and walking network across the County that is integrated with public transport and interconnected with cultural, recreational, retail, educational and employment destinations and attractions.

CPO 5.61: Ensure that all new roads and cycle routes implement the **National Cycle Manual** or any replacement document, with a focus on a high-level service for cyclists and encourage a modal shift from the private car to cycling.

CPO 6.43: Support the designation of the Mid-Shannon Wilderness Park as UNESCO Biosphere candidate site in the County.

CPO 6.84: Build on tourism investment in Centre 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.

CPO 10.20: 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 and Rebel Trail Map)

10.35: Continue to develop and promote the Rebel Trail, Literary Trail, Tain Trail and the Mid Shannon Wilderness Park as part of Longford's primary tourism offer and experience (see Appendix 5: Tourism – Literary and Rebel Trail Map and Mid – Shannon Wilderness Park Map)

CPO 10.51: 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

CPO 12.46: Work with partners and stakeholders to progress the development of the Mid- Shannon Wilderness Park and Biosphere.

CPO 13.4: Ensure green infrastructure protection and provision promotes pedestrian access, cycling and public transport in preference to the car, as appropriate while protecting biodiversity and other landscape resources.

Transport: Support construction of green routes/cycleways/pedestrian routes, subject to normal environmental considerations.

3.7 Other Relevant Policy Documents

3.7.1 Wet Wild Lands A Shared Ambition (Mid Shannon Spirit Level)

An off-road walking, cycling and water – based network of significance is emerging in the Midlands, making the most of flat topography, state lands and inland waterway systems. This chimes with the large domestic and international market for easy off-road travel in ecologically and heritage rich natural settings.

The Lough Ree and Mid-Shannon region is well placed for early engagement and alignment with the work underway by Fáilte Ireland in developing the new Midlands experience brand. The investment in integrated off-road networks has many other proven benefits for community physical and mental health, active travel, environmental awareness raising, and local businesses. (Page 5)

Connectivity of wild places is very important and therefore there is an opportunity now to reframe the ambition to one of strategic ‘re-wilding’. Everywhere can be a bit wilder – not just cutaway bog, but also rivers and streams, lake edges, amenity areas, road verges, public spaces and streets. A network of wild places can form part of the tapestry of landscape in the Midlands. (Page 8)

This approach aligns with Bord na Móna’s ‘Strategic Framework for the Future Use of Peatlands’ which seeks to maximise the commercial, environmental and social value of its peatlands in the area, including the rehabilitation of sites required by IPC licensing and the work on predictive habitat mapping for individual bogs, it also aligns with current and emerging agricultural policies at national and European levels. (Page 9)

Cycle and walking routes allow visitors to absorb the unique atmosphere of this special landscape (Lough Boora Discovery Park) and now form a key part of an emerging Midlands Cycle Destination by linking with the Grand Canal Blueway and other off-road trails. Lough Boora Discovery Park is the prime example of a cutaway area that has been developed as a fine amenity with high biodiversity value, a range of events and activities all through the year and good partnerships with local communities and clubs. (Page 10)

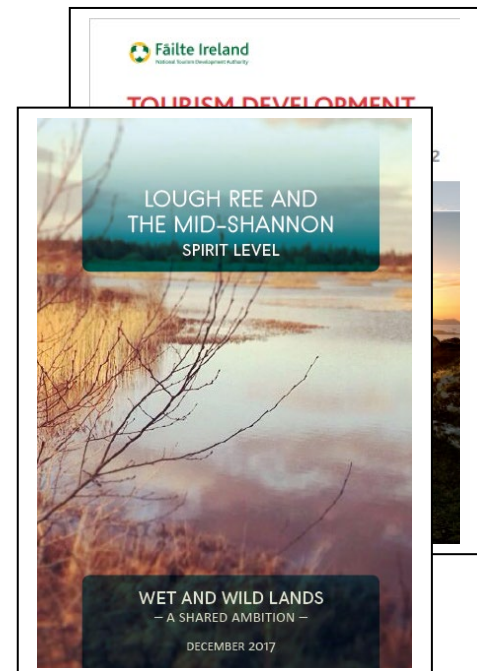
Corlea Amenity Walk project is a collaboration between state organisations and the local community. Wetlands Heritage Ireland and Keenagh Co-Op have been instrumental in planning and delivering the project, Bord na Móna provided the land, expertise, and equipment and Longford County Council are managing the funding and delivery of the project. The project builds on the success of the Corle Bog and Trackway centre and opens up access to the surrounding re-wilding peatlands. (Page 11)

The ambition for a fine-grained network of blue and green infrastructure and off-road networks also provides many benefits for local people in terms of recreation, active travel, health, business opportunities and getting up close to nature. (Page 16)

3.7.2 Fáilte Ireland – Tourism Development and Innovation

Strategic Objectives:

- *To successfully and consistently deliver a world class visitor experience,*



- To support a tourism sector that is profitable and achieves sustainable levels of growth and delivers jobs,
- To facilitate communities to play an enhanced role in developing tourism in their locality, thereby strengthening and enhancing local communities, and
- To recognise, value and enhance Ireland's natural environment as the cornerstone of Irish Tourism.

Stimulating Innovation

One of the main findings of the consultation with key stakeholders on the development of this strategy is the need for Fáilte Ireland to support partners and applicants throughout the application process to stimulate innovative and creative projects for funding. This will be done by:



- Providing information and technical advice and supports on business models, case studies and organising benchmarking trips etc. when required or appropriate.
- Providing funding for technical assistance required to bring them through the design and development stages of the project.
- Hosting innovative workshops and webinars for partners and applicants to stimulate ideas and discussions.
- Providing market and consumer insights and trends to ensure to applicants have up to date information required to ensure projects are evidence based and market driven.

Engaging with the Outdoors

3.2 Improving the visitor experience of State Lands: Where appropriate, and only ever in partnership with the state body concerned. Fáilte Ireland will support projects which seek to optimise the visitor experience of state owned lands such as national parks, nature reserves and forest parks, through delivery of quality outdoor activity infrastructure and essential ancillary facilities.

4 PLANNING ASSESSMENT – STATEMENT OF CONSISTENCY

In principal terms, the proposed development is welcomed to deliver a segregated trail across the River Shannon from Leinster into Connaught to the north of Lough Ree. Kilnacarrow Bridge is currently used as a rail bridge, facilitating Bord na Móna to transport fuel peat from nine bogs located west of River Shannon in mid County Roscommon to the Lough Ree Power Station in Lanesborough. Bord na Móna have, since 18th January 2021, ceased their peat related operations nationwide and have consequentially closed their operations in Longford at the end of 2020 and therefore the rail lines in the area, including those across the bridge will no longer be in use. This provides a unique opportunity for Longford County Council and the local communities to develop the former rail lines as walking/cycling trails. The current project, if delivered would enable the practical implementation of this objective. As such, the proposal fully accords with the aims/objectives of the following documents:

1. National Planning Framework – Project Ireland 2040,
2. National Cycle Policy Framework,
3. Regional Spatial and Economic Strategy (Eastern and Midland Regional Assembly,
4. Longford County Development Plan 2015-2021, and

5. Roscommon County Development Plan 2014-2020

The following tabular presentation identifies key spatial planning policies and confirms the consistency of the project with the referred policy objectives and as such provides a *Statement of Consistency*.

Document	Policy / Policy Objectives	Project Response
National Planning Framework (NPF)	<p>NPO21: <i>Facilitate tourism development and in particular a National Greenways, Blueways and Peatways Strategy, which prioritises projects on the basis of achieving maximum impact and connectivity at national and regional level.</i></p> <p>NPO27: <i>Ensure the integration of safe and convenient alternatives to the car into the design of our communities, by prioritising walking and cycling accessibility to both existing and proposed developments, and integrating physical activity facilities for all ages.</i></p> <p>NPO58: <i>Integrate planning for Green Infrastructure and ecosystem services will be incorporated into the preparation of statutory land use plans.</i></p> <p>NPO64: <i>Improve air quality and help prevent people being exposed to unacceptable levels of pollution in our urban and rural areas through integrated land use and spatial planning that supports public transport, walking and cycling as more favourable modes of transport to the private car, the promotion of energy efficient buildings and homes, heating systems with zero local emissions, green infrastructure planning and innovative design solutions.</i></p>	<p>This project facilitates the provision of an interconnected National and Regional network of Greenways. The project progresses the establishment of the Mid-Shannon Wilderness Park, a joint venture between Longford, Westmeath and Roscommon County Councils in conjunction with Fáilte Ireland, Bord na Móna, National Parks and Wildlife Services and Waterways Ireland.</p> <p>This project is based on developing a Greenway route for pedestrians and cyclists to use with enough space for these users to share the route.</p> <p>The tourism development opportunities of the route combined with the appreciation of the restoration of the worked and unworked bogs will also provide valuable 'carbon sinks' associated with the Climate Change Agenda.</p> <p>The combined benefits of the proposed greenway in keeping with NPF Objectives presents a spatial planning opportunity to encourage tourism, recreational opportunities, the associated health benefits and ecosystem appreciation.</p> <p>The project can be positively considered consistent with the National Planning Framework.</p>
National Cycle Policy Framework – Smarter Travel	<p>Objective 3: <i>Provide designated rural cycle networks especially for visitors and recreational cycling.</i></p> <p><i>Should any cycle network be developed they must adhere to the five main requirements for cycling: safety; coherence; directiveness; comfort; attractiveness</i></p>	<p>The project is in accordance with the <i>Smarter Travel</i> policy document to promote tourism, leisure and recreational activities via the delivery of an integrated greenway network while ensuring that the surrounding bogland amenity is protected and enhanced.</p>

Document	Policy / Policy Objectives	Project Response
		<p><i>Smarter Travel</i> encourages and supports the provision of dedicated signed rural cycling networks building on Fáilte Ireland's Strategy to Develop Irish Cycling Tourism. This will cater for recreational cyclists as well as visitors.</p> <p>The Greenway is to be routed through degraded bogland. The route will predominantly follow an existing BnM railway route.</p> <p>The proposed Greenway has been assessed and is presented as following the five main requirements for cyclists:</p> <ol style="list-style-type: none"> 1. Safety, 2. Coherence, 3. Directiveness, 4. Comfort, and 5. Attractiveness <p>The project can be positively considered as consistent with the <i>National Cycle Policy Framework</i>.</p>
Regional Spatial and Economic Strategy (RSES) for EMRA	<p>RPO 6.19: Support the local strategies that are already in place to link the River Shannon Blueway, The Royal and Grand Canal Greenways and the proposed Barrow Blueway right across the Midlands, incorporating the towns of Longford, Athlone, Mullingar, Tullamore and Portarlinton.</p> <p>RPO 7.23: Support the further development of Green Infrastructure policies and coordinate the mapping of strategic Green Infrastructure in the Region.</p> <p>RPO 7.24: Promote the development of a sustainable Strategic Greenway Network of national and regional routes, with a number of high capacity flagship routes that can be extended and/ or linked with local greenways and other cycling and walking infrastructure, notwithstanding that capacity of a greenway is limited to what is ecologically sustainable.</p> <p>RPO 7.25: Support local authorities and state agencies in the delivery of sustainable strategic greenways, blueways, and peatways projects in the Region under the</p>	<p>The proposed Mid-Shannon Wilderness Park Greenway is in accordance with the overarching <i>Regional Policy Objectives</i> as contained within the <i>EMRA RSES</i>.</p> <p>The project can be assessed favourably set against the broad objectives of the promotion of greenway and blueway routes, their integration and linkage to existing, established and future designated routes.</p> <p>Importantly and significantly the RSES document promotes the significant resource the peatlands provide within the Midland Region. It (RSES) also highlights the partnership approach and cross-cutting themes that schemes such as the subject proposal can deliver in the context with the main partners in establishing the Wilderness Park and the integrated Greenway.</p>

Document	Policy / Policy Objectives	Project Response
	<p><i>Strategy for the Future Development of National and Regional Greenways</i></p> <p>RPO 7.29: <i>Support collaboration between local authorities, the Bord na Móna Transition Team and relevant stakeholders and the development of partnership approaches to integrated peatland management that incorporate any relevant policies and strategies such as the Bord na Móna Biodiversity Plan 2016-2021 and the national Climate Mitigation and Adaptation Plans. This shall include support for the rehabilitation and/or re-wetting of suitable peatland habitats</i></p>	<p>The project can be positively considered consistent with the Regional Spatial and Economic Strategy for the EMRA Region.</p>
<p>Longford County Development Plan 2015-2021</p>	<p>TOU 2: <i>The Council recognises the potential of all peatland bogs in the County, including industrial peatlands, in terms of providing opportunities for recreation and tourism thus creating new features of local distinction. Where appropriate the Council will cooperate with adjoining local authorities including Roscommon and Westmeath County Council to facilitate, subject to the requirements of the Habitats Directive, this potential in areas where bogs straddle the County boundary.</i></p> <p><i>The development of the bogs for amenity purposes will not exclude them for other purposes such as the generation of renewable energy including wind generation. It is envisaged that these types of activities can be mutually inclusive and developed in an integrated way.</i></p> <p>TOU 3: <i>The Council will seek to facilitate and promote, where appropriate the development of the Mid Shannon Wilderness Park and Corlea Archaeological and Biodiversity Project.</i></p> <p>TOU 4: <i>The Council will promote the growth of the County's indoor and outdoor tourism sector and the necessary supportive facilities, providing an array of activities in order to diversify the range of tourist experiences available in Longford and extend the tourist season.</i></p> <p>TOU 20: <i>a) The Council shall promote and encourage the development of "Honeypot" tourism developments at the locations indicated below.</i></p>	<p>The principal material planning considerations associated with any plan or project within the County should be assessed primarily against the <i>County Development Plan 2015-2021</i>.</p> <p>In effect, local authority own development is not enabled if it contravenes local planning policy or objectives.</p> <p>The use of peatland bogs for recreational opportunities is promoted within the LCDP and can and should be integrated within any other relevant future uses.</p> <p>The proposed use of the former industrial peat infrastructure will promote outdoor recreational use of re-watered boglands to enhance recreational experience and promote extended cycle and footpath links. The proposals extend the growing network of off-road cycling routes, providing links to existing blue and greenway routes within the County and extending inter-county routes.</p> <p>The project can be positively considered consistent with the adopted Longford County Development Plan 2015-2021 and objectives contained therein.</p>

Document	Policy / Policy Objectives	Project Response
	<p>Mid Shannon Wilderness Park Villages</p> <p>Lanesboro – River Shannon, Lough Ree, Commons North. In particular with a view to developing the amenity area to the south of the town adjoining Lough Ree for visitor and tourism development and a lake side walking/cycling route to Newtowncashel and Ballymahon. Also the possible bridging point for a walking cycling route to Roscommon and the west.</p> <p>TOU 23: The Council shall continue to engage with the following agencies:</p> <p>– National Parks and Wildlife Service, Coillte, ESB/Bord Na Mona with regard to the potential for tourism related uses of cutaway bogland.</p> <p>PED 5: The Council shall investigate the provision of dedicated cycle and pedestrian routes along routes of high amenity.</p> <p>PED 6: The Council shall support the appropriate provision of cycle strategies for settlements throughout the County and where necessary and appropriate, reserve lands for the provision of off-road cycling tracks and cycling/pedestrian infrastructure as identified as part of any such cycling strategy prepared.</p> <p>PED 7: The Council shall support the appropriate provision of cycle strategies for settlements throughout the County and where necessary and appropriate, reserve lands for the provision of off road cycling tracks and cycling/pedestrian infrastructure as identified as part of any such cycling strategy prepared.</p> <p>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.</p>	
Roscommon County Development Plan 2014-2020	<p>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</p>	<p>The proposed development will enhance the national cycle network and promote connections to green routes within the county and inter-county.</p>

Document	Policy / Policy Objectives	Project Response
	<p>recreational cycling and green routes as the opportunity arises and where relevant supported by environmental assessment.</p> <p>Objective 4.21: Provide a cycleway and walkway crossing through South Roscommon as part of the proposed Dublin to Galway Cycleway Network including all related signage, way marking and associated works and connections.</p>	<p>The project can be positively considered consistent with the adopted Roscommon County Development Plan 2014-2020 and objectives contained therein.</p>
Lough Ree Mid-Shannon Spirit Level Wet and Wild Lands a Shared Ambition 2017	<p>As a public document this is also intended as a resource for all with a stake in the Midlands; for people who live here, who work here and for those tasked with management and funding decisions.</p> <p>This statement of shared ambition will be useful for those concerned with the links between community, environmental and economic resilience in and around Lough Ree and the Mid-Shannon and it provides a robust foundation for the articulation of a tourism proposition of scale for the wider Midlands area.</p>	<p>Whilst not strictly a spatial land-use planning document, the 'Shared Ambition' provides and allows for the presented initiative of the subject Greenway proposals to enable a recreational tourism product whilst experiencing and appreciating the environmental significance of the landholding and the particular environs.</p> <p>The project can be positively considered consistent with the adopted Shared Ambition document and objectives contained therein.</p>
Fáilte Ireland – Tourism Development and Innovation - Hidden Heartlands	<p>Strategic Objectives:</p> <ul style="list-style-type: none"> ➤ To successfully and consistently deliver a world class visitor experience, ➤ To support a tourism sector that is profitable and achieves sustainable levels of growth and delivers jobs, ➤ To facilitate communities to play an enhanced role in developing tourism in their locality, thereby strengthening and enhancing local communities, and ➤ To recognise, value and enhance Ireland's natural environment as the cornerstone of Irish Tourism. 	<p>The proposed project intends to increase tourism by allowing the public to enjoy a wide range of scenic areas within the Country it is intended that the tourists can travel from one place to another via safe and secure travel modes such as cycling and/or walking while enjoying the natural habitat. The project and the proposals best fit the Fáilte Ireland <i>Hidden Heartlands</i> model. This may provide smaller towns and villages an opportunity to provide services to cater for tourism communities visiting these areas which may have been overlooked due to the national road and particularly the motorway system that does not cater for these places of interest and their supporting towns and villages.</p>

Document	Policy / Policy Objectives	Project Response
		The project can be positively considered consistent with the adopted objectives of Fáilte Ireland within their <i>Hidden Heartlands</i> tourism offer.
Co. Longford Local Economic and Community Plan 2016-2022	<p>E4.1.9: Identify sustainable transport provision (to include cycling and the provision of cycle networks) which facilitates unemployed people to access training and employment.</p> <p>E6.4.8 Explore the potential to utilise worked-out bog lands to develop a National Wetlands Park. A significant natural attraction developed from exhausted bog land.</p> <p>E6.4.12: Complete the development of a network of integrated themed trails e.g. Rebel, Literary, Edgeworth, South Longford and Food trails</p> <p>C6.2.8: Continue to develop a network of additional walking and cycle routes. Enhancement of walking and cycling routes available and length if additional routes provided.</p>	<p>The LECP objectives related to both community and economic development of the County see the promotion of cycling and the development of the Mid Shannon Wilderness Park as integral to plan objectives.</p> <p>The project can be positively considered consistent with the adopted objectives of the <i>Longford LECP</i>.</p>
Longford Tourism Strategy 2017-2022	<p>4.1 The Lough Ree and Mid-Shannon Wilderness Park Is a relatively undiscovered area of rich history, heritage and nature. It is an absolute treasure trove of beautiful rivers, lakes, Islands, bogs and rich pasture land. The four local authorities of Offaly, Westmeath, Roscommon, Longford and Waterways Ireland, Bord na Mona, National Parks and Wildlife Services and Coillte have now come together in a Intra Regional Project to open up this long forgotten piece of hidden Ireland for the enjoyment and delight of locals, visitors and tourists.</p> <p>Despite its location and its tourism assets, the Mid Shannon Waterway has yet to exploit its position in terms of tourism potential and it is underdeveloped relative to other visitor destinations in Ireland. This strategy now proposes to promote and develop Lough Ree and the Mid Shannon Area as a tourist destination of international attraction and repute. The</p>	<p>This project will facilitate the development of a new and important piece of tourism infrastructure to promote and develop the Mid-Shannon area for recreational and tourist cycle and walking routes in the existing natural amenities of the River Shannon, Lough Ree and the Royal Canal, with the future rehabilitation of bogs as national biodiversity locations.</p> <p>The subject proposal will promote and extend the walking and cycling route for the Mid Shannon Wilderness Park objective and provide improved access to the referred Corlea Trackway.</p> <p>The project can be positively considered consistent with the adopted objectives of the <i>Longford Tourism Strategy 2017-2022</i></p>

Document	Policy / Policy Objectives	Project Response
	<p><i>various visitor and tourism assets will be developed and presented to make them more easily accessible and a more exciting and memorable experience for the visitor.</i></p> <p><i>As a first step Longford County Council proposes to work with Bord na Mona and Keenagh Co-operative Association to develop a Bog Land Park with amenity walks around the Corlea Trackway Centre to enhance the tourism offer at this important location. This Corlea Project represents a first step in the development of a potential Mid Shannon Wilderness Park.</i></p>	

4.1 EIA Screening Report

Environmental Impact Assessment (EIA) Screening Report has been carried out by *Clandillon Civil Consulting Ltd.* supported by Flynn Furney Environmental Consultants, to inform a planning application for the proposed route of the proposed Mid-Shannon Wilderness Park Greenway. The purpose of the Screening for EIA is to determine whether an EIA Report is required as part of the EIA Directive (2013/52/EU) for the proposed development. The screening process comprises two phases. The first phase looks at the requirement for a mandatory EIA with regard to Annex I and Annex II of the EIA Directive (as amended). The proposed development is not of a type listed in either Annex I or Annex II and therefore does not require mandatory EIA.

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. The type and characteristics of potential impacts were considered within the sub-threshold screening assessment. A cultural and archaeological heritage assessment, flood risk assessment, ecological assessment, also prepared for the project, have been considered within the EIA Screening Report. The EIA Screening Report has also considered other issues such as population and human health, land and soils, material assets, biodiversity, air and climate, and water. An Appropriate Assessment Screening Report was also completed which necessarily informed the EIA screening assessment.

It is concluded that the proposed greenway does not fall into a category or exceed threshold under the Planning Acts that trigger the mandatory requirement of an EIA, and therefore a statutory EIA is not required. Having carried out an 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, lands and soils, water, and heritage are not expected and can be ruled out.

In relation to the construction stage, the EIA Screening Report indicates that 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 sites, a positive environmental benefit.

The EIA Screening Report concludes that there is no real likelihood of significant effects on the environment arising from the proposed development and is concluded that the proposed development of the Mid-Shannon Wilderness Park Greenway Project would not be likely to have such

effects and accordingly the preparation of an **Environmental Impact Assessment Report is not required.**

4.2 Appropriate Assessment Screening Report

An Appropriate Assessment Screening Report has been carried out by Flynn Furney Environmental Consultants for the proposed construction of the Mid Shannon Wilderness park Greenway. The report has been completed to provide information regarding the ecological status of the proposed site of works and to provide this information necessary to allow the competent authority to conduct an Article 6[3] Appropriate Assessment (AA) Screening of the proposed development.

The report concludes that impacts on the Lough Ree SPA and Lough Ree SAC and or any other Natura 2000 designated sites of the proposed Greenway construction are not predicted. The possibility of temporary disturbance during construction phase to a bird species that is a qualifying interest of Lough Ree SPA was identified. However, if best practice is applied to works this is considered unlikely and significant of impact likely to be negligible. It is therefore concluded that a full Appropriate Assessment (or Stage 2 Natura Impact Statement) is not required.

4.3 Flood Risk Assessment Report

Clandillon Civil Consulting (CCC) Ltd has carried out a Flood Risk Assessment (FRA) to inform an Environmental Impact Assessment 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.

The results of the FRA indicated that parts of the proposed Greenway route are subject to Fluvial Flood risk. CCC 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. In particular, the Greenway section within Lanesborough-Ballyleague and the Kilnacarrow BnM Bridge encroaches Flood Zone A, B and C as well as the track section near the Ledwithstown River. Flooding occurs 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 Zones classes A, B and C. However, as Greenway sections within Flood Zone A have a 10% chance that a Flood event will occur or be exceeded in any given year, bound pavement sections are proposed that will minimise maintenance.

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 Roscommon and Longford County Council. The Contractor is to ensure measures are in place to reduce any potential inundation due to flooding during the works.

4.4 Cultural Heritage Desk Study

The route of the proposed greenway development follows existing railway tracks for 61km out of 73 kms and there will be limited groundworks in areas where existing tracks are being used. There will also be 6 kms 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 brash/vegetation in areas of new construction. Construction may involve shallow excavation of up to 0.9 m, placement of culverts and construction of bridges over streams. In order to mitigate impacts on previously unidentified archaeological sites in these areas, it is recommended that groundworks and clearing of vegetation will be monitored by a suitably qualified archaeologist as

agreed by Roscommon County Council, Longford County Council and Bord na Mona. This is especially pertinent where large clusters of trackways and platforms have previously recorded.

5 PART 8 – SUB-THRESHOLD LOCAL AUTHORITY OWN DEVELOPMENT

5.1 Part 8 Local Authority Own Development

The Planning Statement herein confirms the ability of the proposals to be undertaken via Local Authority Own Development, **Part XI, Section 179 of the Planning and Development Act 2000-2020** (as amended) in effect a Sub-threshold Development **under Article 120 of the Planning and Development Regulations 2001** and where an Environmental Impact Assessment Report is not required under **Section 175** nor a Stage 2 Appropriate Assessment (Natura Impact Statement) under **Section 177AE** of the PandD Act.

5.2 Determination of Local Authority Own Development

Local authority own development Section 179 Planning and Development Act.

179.— (1) (a) The Minister may prescribe a development or a class of development for the purposes of this section where he or she is of the opinion that by reason of the likely size, nature or effect on the surroundings of such development or class of development there should, in relation to any such development or development belonging to such class of development, be compliance with the provisions of this section and regulations under this section.

(b) Where a local authority that is a planning authority proposes to carry out development, or development belonging to a class of development prescribed under *paragraph (a)* (hereafter in this section referred to as “proposed development”) it shall in relation to the proposed development comply with this section and any regulations under this section.

(d) This section shall also apply to proposed development which is carried out within the functional area of a local authority which is a planning authority, on behalf of, or in partnership with the local authority, pursuant to a contract with the local authority.

Sub-threshold EIAR – Article 120 Planning and Development Regulations

120. (1) (a) 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.

- (b) Where the local authority concludes, based on such preliminary examination, that—
- (i) there is no real likelihood of significant effects on the environment arising from the proposed development, it shall conclude that an EIA is not required,
 - (ii) there is significant and realistic doubt in regard to the likelihood of significant effects on the environment arising from the proposed development, it shall prepare, or cause to be prepared, the information specified in Schedule 7A for the purposes of a screening determination, or
 - (iii) there is a real likelihood of significant effects on the environment arising from the proposed development, it shall—
 - (I) conclude that the development would be likely to have such effects, and
 - (II) prepare, or cause to be prepared, an EIAR in respect of the development.

(1A) (a) Where the local authority prepares, or causes to be prepared, the information specified in Schedule 7A, the information shall be accompanied by any further relevant information on **the characteristics of the proposed development and its likely significant effects on the environment**, including, where relevant, information on how the available

results of other relevant assessments of the effects on the environment carried out pursuant to European Union legislation other than the Environmental Impact Assessment Directive have been taken into account.

5.3 Public Notices

Local authority own development Section 179 Planning and Development Act.

179.—(2) The Minister shall make regulations providing for any or all of the following matters:

- (a) the publication by a local authority of any specified notice with respect to proposed development;
- (b) requiring local authorities to—
 - (i) (I) notify prescribed authorities of such proposed development or classes of proposed development as may be prescribed, or
 - (II) consult with them in respect thereof, and
 - (ii) give to them such documents, particulars plans or other information in respect thereof as may be prescribed;
- (c) the making available for inspection, by members of the public, of any specified documents, particulars, plans or other information with respect to proposed development;
- (d) the making of submissions or observations to a local authority with respect to proposed development.

Notice of proposed development Article 81 Planning and Development Regulations

- 81.** (1) A local authority shall, in accordance with this article,—
- (a) give notice of proposed development in an approved newspaper, and
 - (b) erect or fix a site notice or site notices on the land on which the proposed development would be situated.
- (2) A notice referred to in sub-article (1) shall state that the local authority proposes to carry out development and—
- (a) indicate the location, townland or postal address of the proposed development (as may be appropriate),
 - (b) indicate the nature and extent of the proposed development,
 - (c) where the proposed development consists of or comprises the carrying out of works —
 - (i) which would materially affect the character of a protected structure or a proposed protected structure,
 - (ii) to the exterior of a structure which is located within an architectural conservation area, and the development would materially affect the character of the area concerned,
- indicate this fact,
- (ca) indicate its conclusion under article 120(1)(b)(i) or screening determination under article 120(1B)(b)(i), as the case may be (and, in the latter case, including, or referring to, the description, if any, provided under article 120(1A)(b) or 120(3)(cb)(ii), as the case may be), and
 - (d) state that—
 - (i) plans and particulars of the proposed development will be available for inspection or purchase at a fee not exceeding the reasonable cost of making a copy during office hours at the offices of the local authority for a specified

6 CONCLUDING COMMENTS

We submit that the proposed development consisting of the conversion of the existing Bord na Móna bridge at Kilnacarrow to a walkway/cycleway to provide off road access along 89m of disused rail line at Cloontuskert, County Roscommon is in accordance with national regional and local spatial planning policy objectives.

The proposed development represents the suitable use of the existing railway lines which Bord na Móna ceased operating as part of their peat harvesting operations. As these railway lines will no longer be in use, prevailing policy is in line with the development of a flagship tourism product to allow tourism attractions to be promoted and expanded and to convert these railway lines into a walkway/cycleway. The proposal will offer extensions and links to existing and proposed greenway network and will enable the area's promotion under the Fáilte Ireland, Hidden Heartlands banner, tourism product

The design and approach in developing this project is presented as fully accordance with the National Planning Framework 2040, The National Cycle Policy Framework, and the Regional Spatial and Economic Strategy to increase active travel, make alternative travel to other modes of transport and to allow the users to enjoy the scenic parts of the country in a safe and user-friendly environment.

The proposed development and associated submitted documentation in respect of:

1. Environmental Impact Assessment Screening Report,
2. Appropriate Assessment Screening Report
3. Flood Risk Assessment,
4. Ecological Impact Assessment Report and
5. Cultural Heritage Study Report

are presented on a holistic basis, assessing potential impacts across proposed linked development in Counties Roscommon and Longford (that are the subject of separate Part VIII processes) to ensure that cumulative impacts can be comprehensively considered and to promote the understanding of the proposal. This is also to enable the full consideration of the scheme in accordance with the logical, orderly and sustainable development of the subject lands in accordance with the principal material planning considerations contained within the Roscommon County Development Plan and Longford County Development Plan, where the route provides a logical link over the River Shannon. We look forward to your full consideration of the scheme to promote further development of Greenways in Ireland, making alternative modes of transportation systems and increase active transportation in both urban and rural areas allowing the public to enjoy the scenic areas in the State and the community benefits that the development will bring to the local community.

Overview of Chainage Sections

Ballyloughan to Boughill

CLIENT: Clandillon Civil Consulting

Legend

— Proposed Route

▭ Ballyloughan to Boughill Sections



Prepared by: Ian Douglas

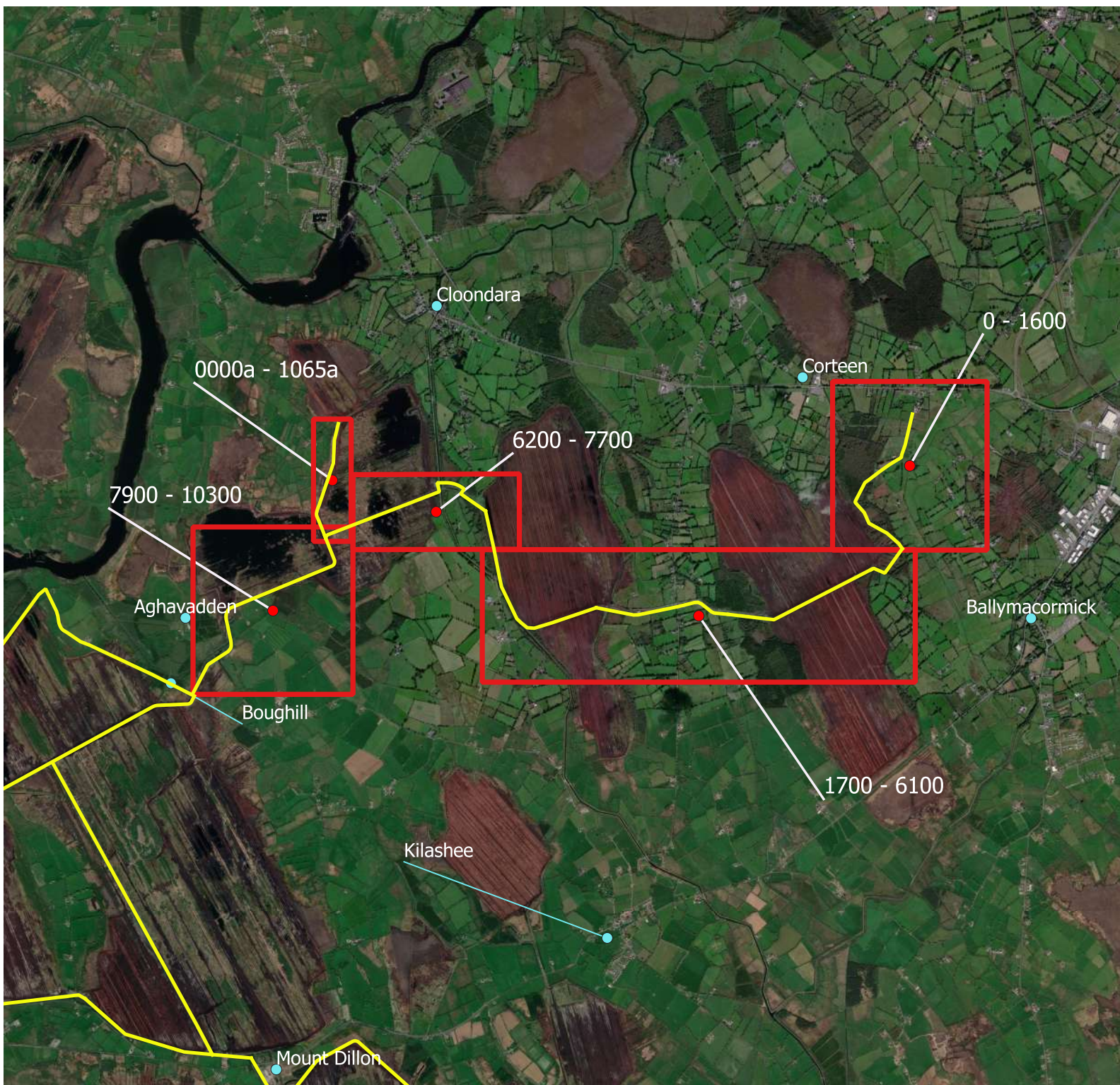
Date: 24/06/2021

Version number: 2

Job Reference: Longford Greenway

Base Map: Bing Aerial 2019

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Ian Douglas

Date:
21/06/21

Job:
MSWP Greenway

Base Map:
Bing Maps Aerial 2019

Client: **Clandillon Civil Consulting**

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- Boughill to Derryhaun**

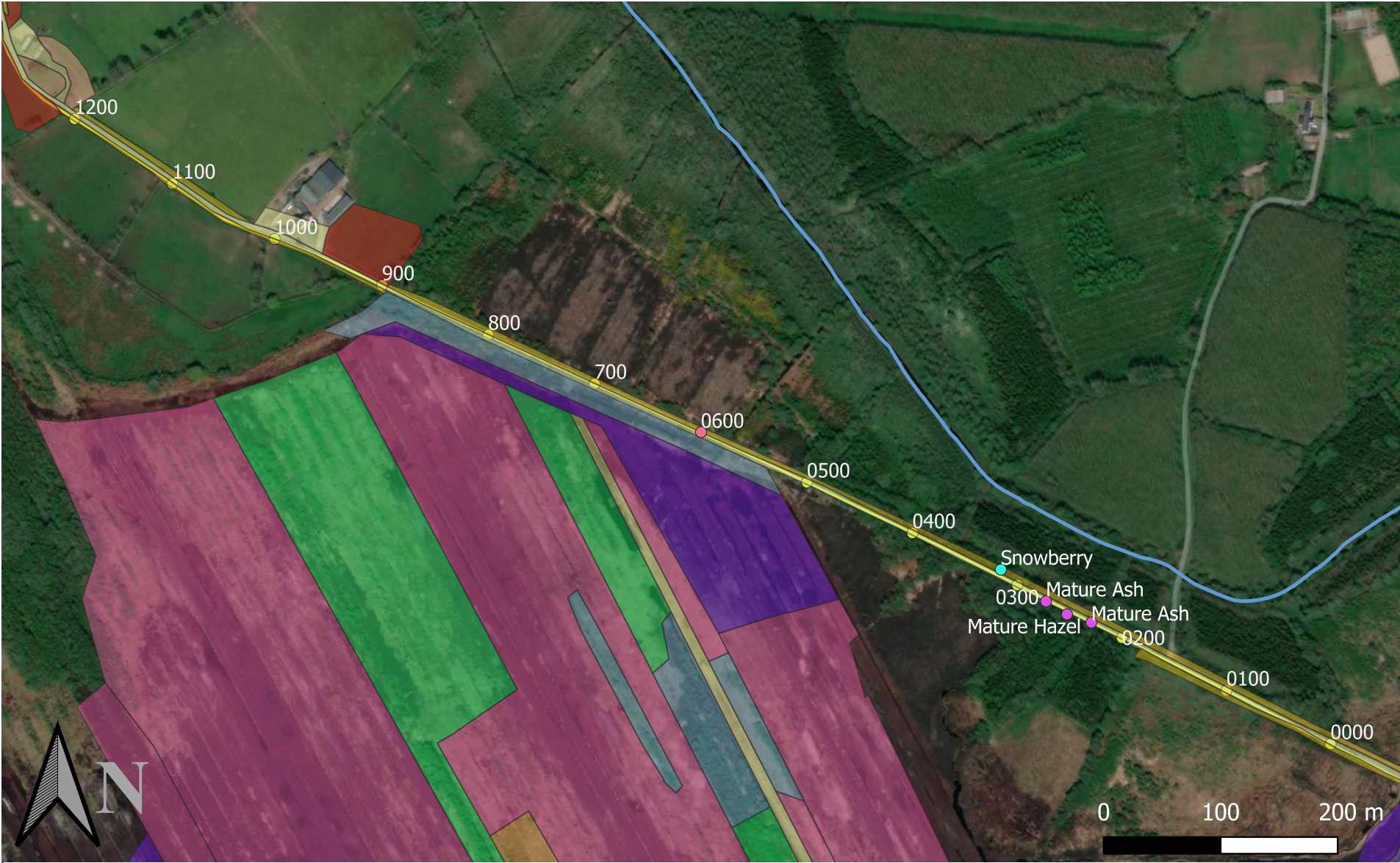
 - Boughill to Derryhaun Chainage
 - Ecologically Sensitive Areas
 - Water Courses

Ecological Constraints

 - To be removed where possible
- To be retained where possible

Boughill to Derryhaun habitats

 - Buildings and artificial surfaces
 - Cutover bog/Bare peat
 - Emerging grassland and heath on cutover peat
 - Emerging woodland on cutover bog
- Emerging woodland on cutover bog/Scrub
 - Hedgerows
 - Recolonising bare ground/Buildings and artificial surfaces
 - Scrub



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Boughill to Derryhaun

- Boughill to Derryhaun Chainage
- Water Courses

Ecological Constraints

- To be removed where possible
- To be retained where possible

Boughill to Derryhaun habitats

- Amenity grassland
- Bog woodland & wetland mosaic
- Buildings and artificial surfaces
- Cutover bog/Bare peat
- Emerging grassland and heath on cutover peat

- Emerging woodland on cutover bog
- Hedgerows
- Improved agricultural grassland
- Recolonising bare ground/Buildings and artificial surfaces
- Scrub

Boughill to Derryhaun: Ecological Constraints & Habitats



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Boughill to Derryhaun

- Boughill to Derryhaun Chainage
- Water Courses

Ecological Constraints

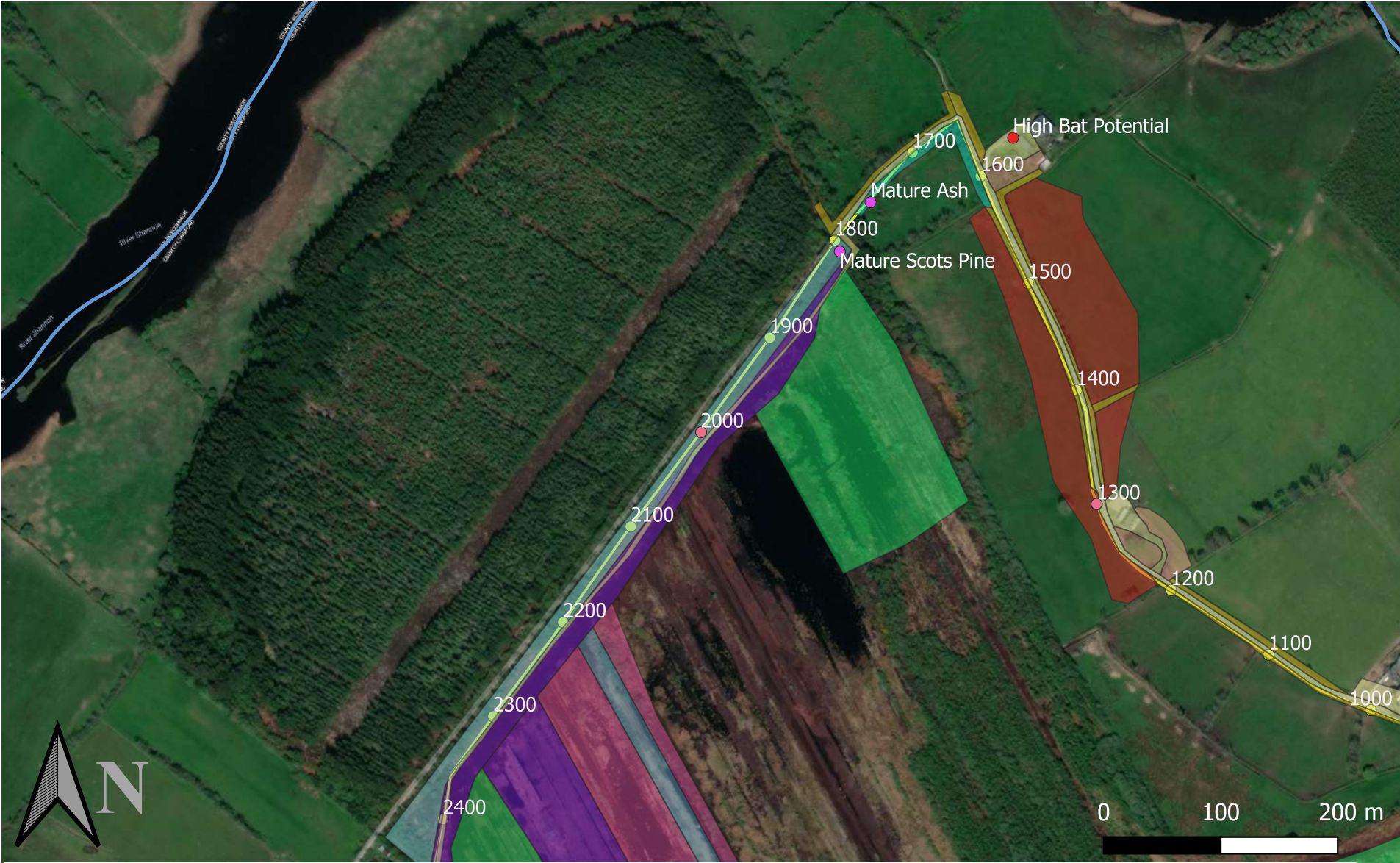
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Boughill to Derryhaun habitats

- Amenity grassland
- Bog woodland
- Buildings and artificial surfaces
- Cutover bog/Bare peat
- Emerging grassland and heath on cutover peat

- Emerging woodland on cutover bog
- Hedgerows
- Improved agricultural grassland
- Scrub
- Treelines

Boughill to Derryhaun: Ecological Constraints & Habitats



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- Water Courses

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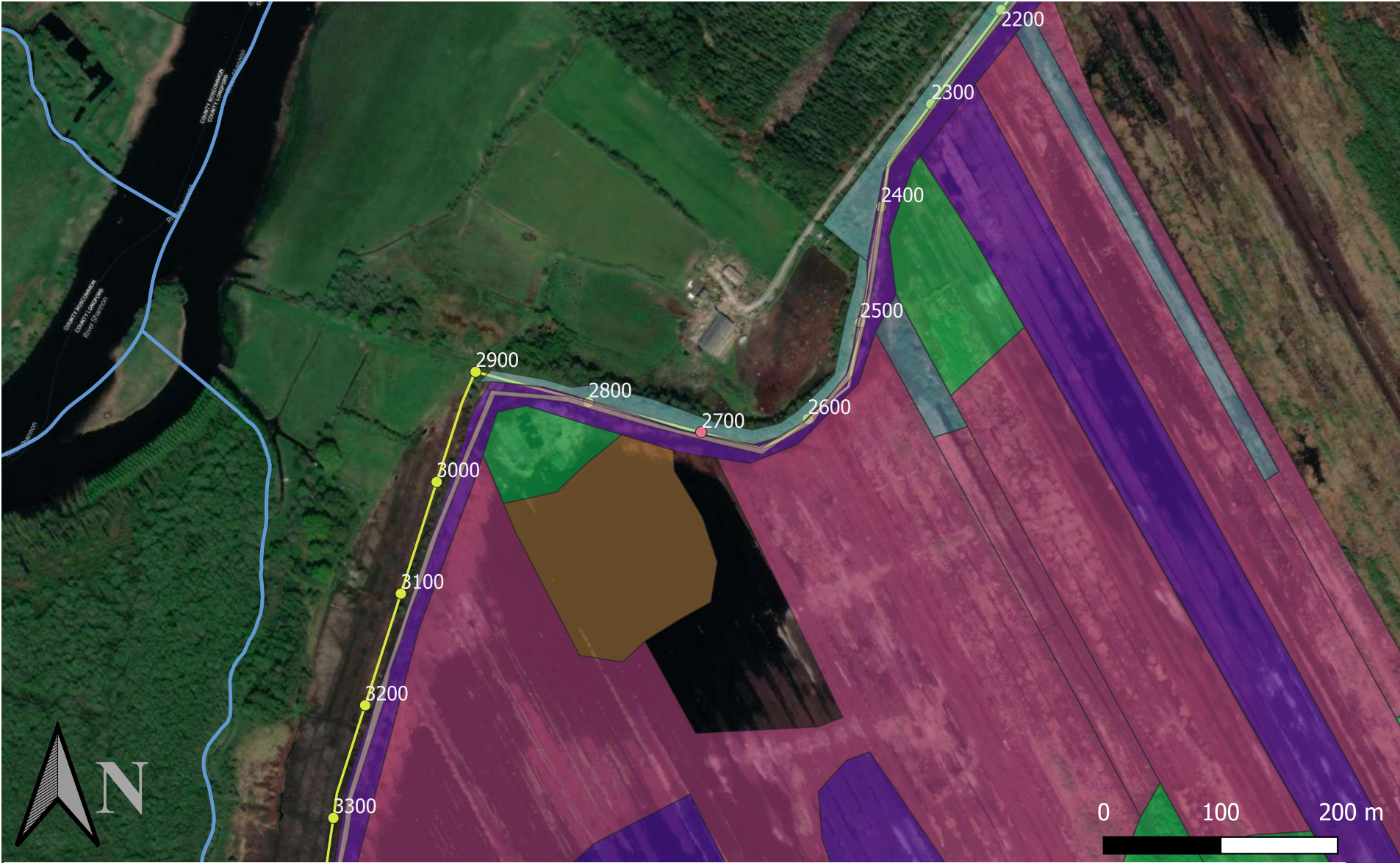
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Boughill to Derryhaun habitats

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Boughill to Derryhaun: Ecological Constraints & Habitats



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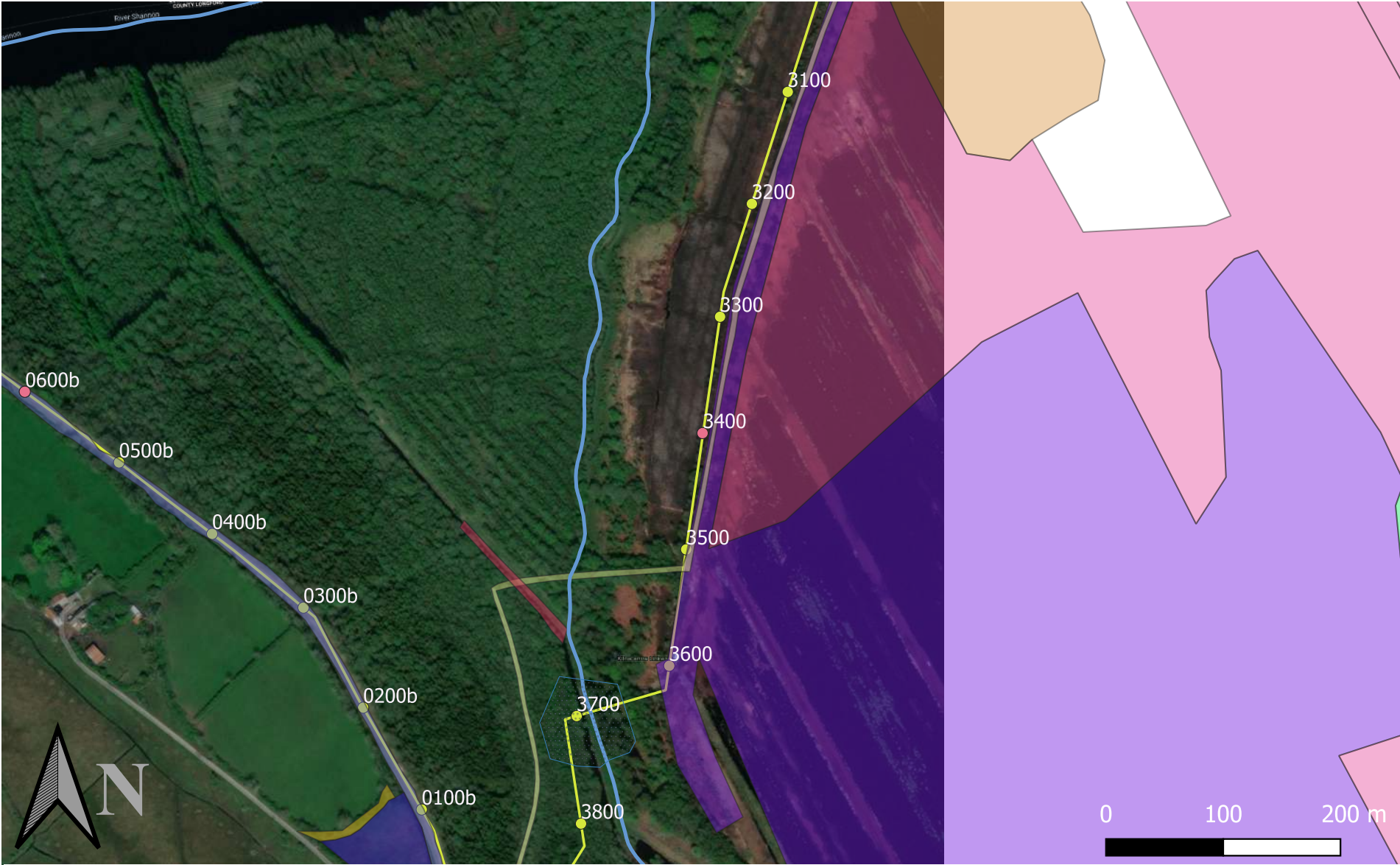
- Boughill to Derryhaun Chainage
- Water Courses

Boughill to Derryhaun habitats

- Bog woodland
- Bog woodland & wetland mosaic
- Buildings and artificial surfaces

- Cutover bog/Bare peat
- Emerging grassland and heath on cutover peat
- Emerging woodland on cutover bog
- Scrub

Boughill to Derryhaun: Ecological Constraints & Habitats



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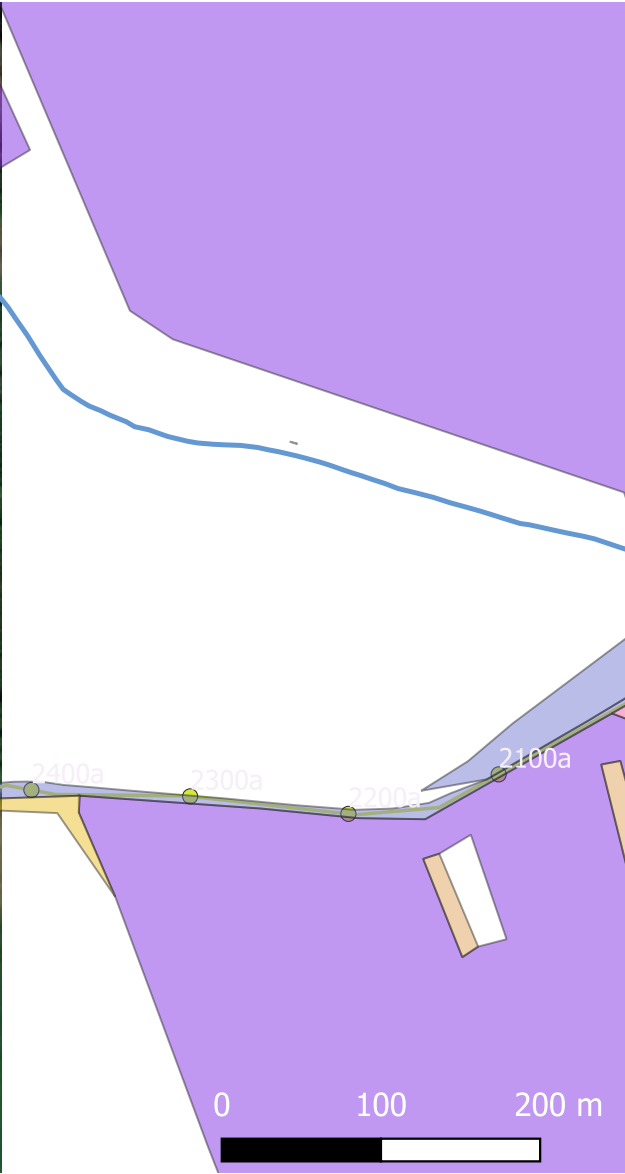
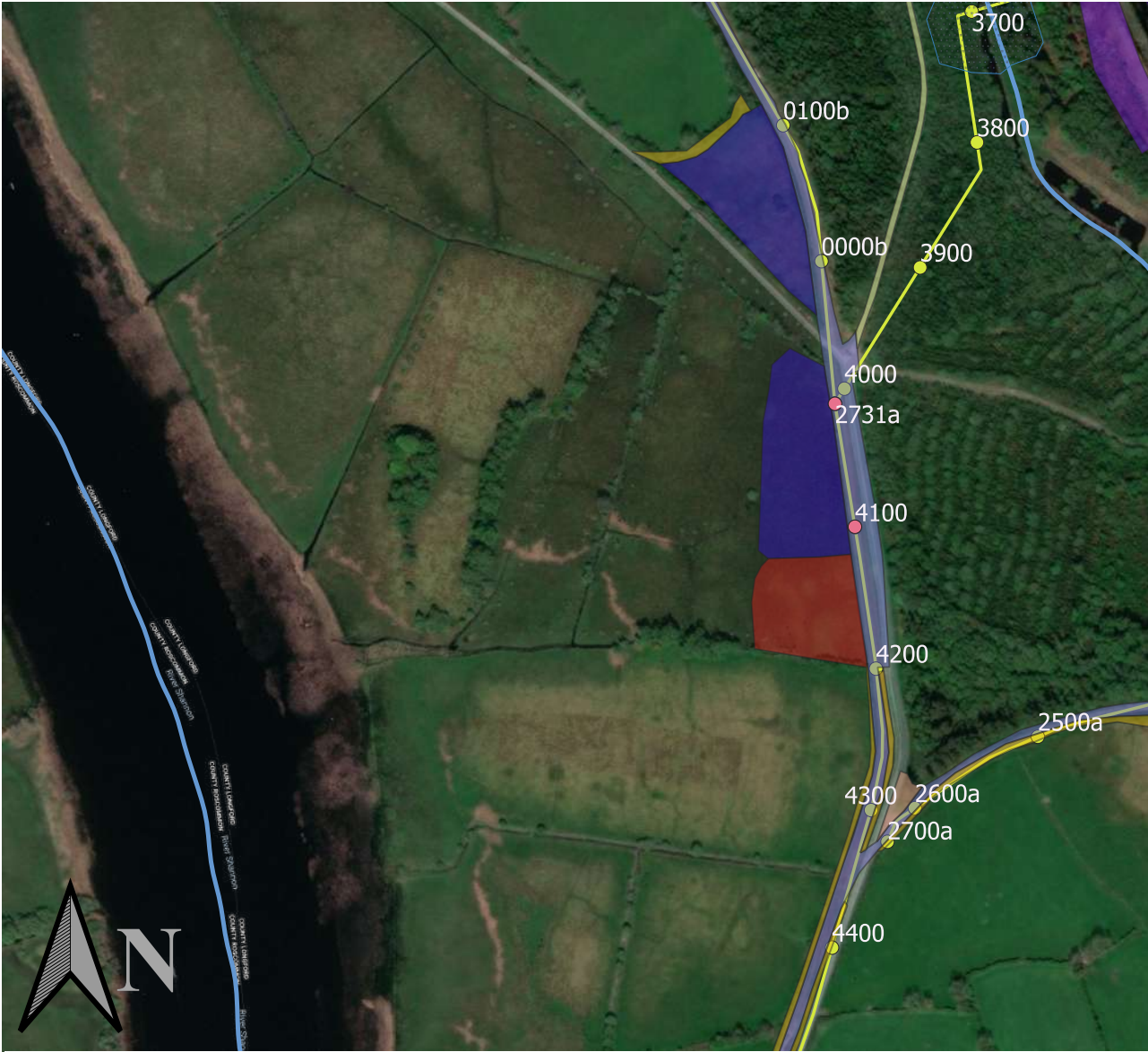
- Boughill to Derryhaun Chainage
- Ecologically Sensitive Areas
- Water Courses

Boughill to Derryhaun habitats

- Bog woodland & wetland mosaic
- Buildings and artificial surfaces
- Cutover bog/Bare peat
- Drainage ditches

- Emerging grassland and heath on cutover peat
- Emerging woodland on cutover bog
- Hedgerows
- Recolonising bare ground/Buildings and artificial surfaces
- Wet grassland

Boughill to Derryhaun: Ecological Constraints & Habitats



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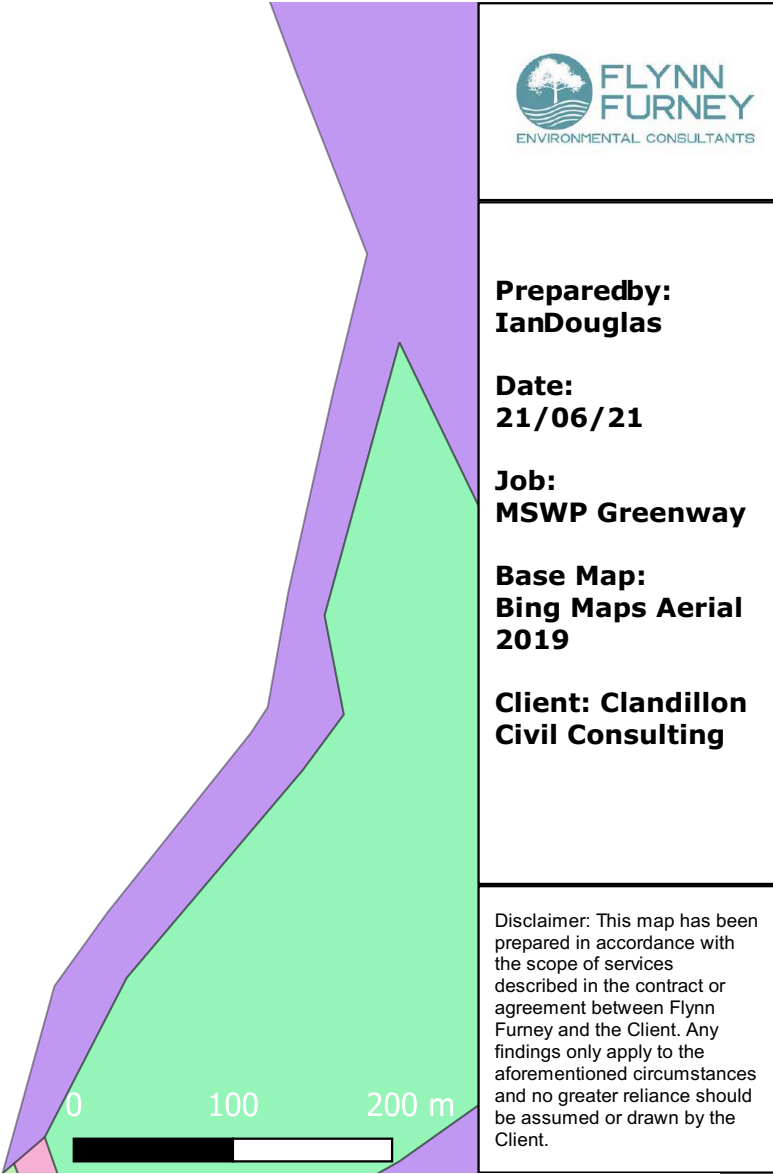
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Boughill to Derryhaun habitats

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- Emerging grassland and heath on cutover peat
- Hedgerows
- Improved agricultural grassland
- Recolonising bare ground/Buildings and artificial surfaces
- Wet grassland

Boughill to Derryhaun: Ecological Constraints & Habitats



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Boughill to Derryhaun

- Boughill to Derryhaun Chainage
- Ecologically Sensitive Areas
- Water Courses

Ecological Constraints

- To be retained where possible

Boughill to Derryhaun habitats

- Cutover bog/Bare peat
- Drainage ditches
- Emerging grassland and heath on cutover peat
- Emerging woodland on cutover bog
- Heath

- Hedgerows
- Recolonising bare ground/Buildings and artificial surfaces
- Treelines



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Boughill to Derryhaun

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Boughill to Derryhaun habitats

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- Cutover bog/Bare peat
- Emerging grassland and heath on cutover peat
- Emerging woodland on cutover bog

- Heath
- Hedgerows
- Recolonising bare ground/Buildings and artificial surfaces
- Wet grassland



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Boughill to Derryhaun

- Boughill to Derryhaun Chainage
- Ecologically Sensitive Areas
- Water Courses

Ecological Constraints

- To be retained where possible

Boughill to Derryhaun habitats

- Buildings and artificial surfaces
- Cutover bog/Bare peat
- Emerging grassland and heath on cutover peat
- Heath
- Hedgerows

- Improved agricultural grassland
- Mixed broadleaved woodland/Scrub
- Recolonising bare ground/Buildings and artificial surfaces
- Scrub
- Treelines



Preparedby:
IanDouglas

Date:
21/06/21

Job:
MSWP Greenway

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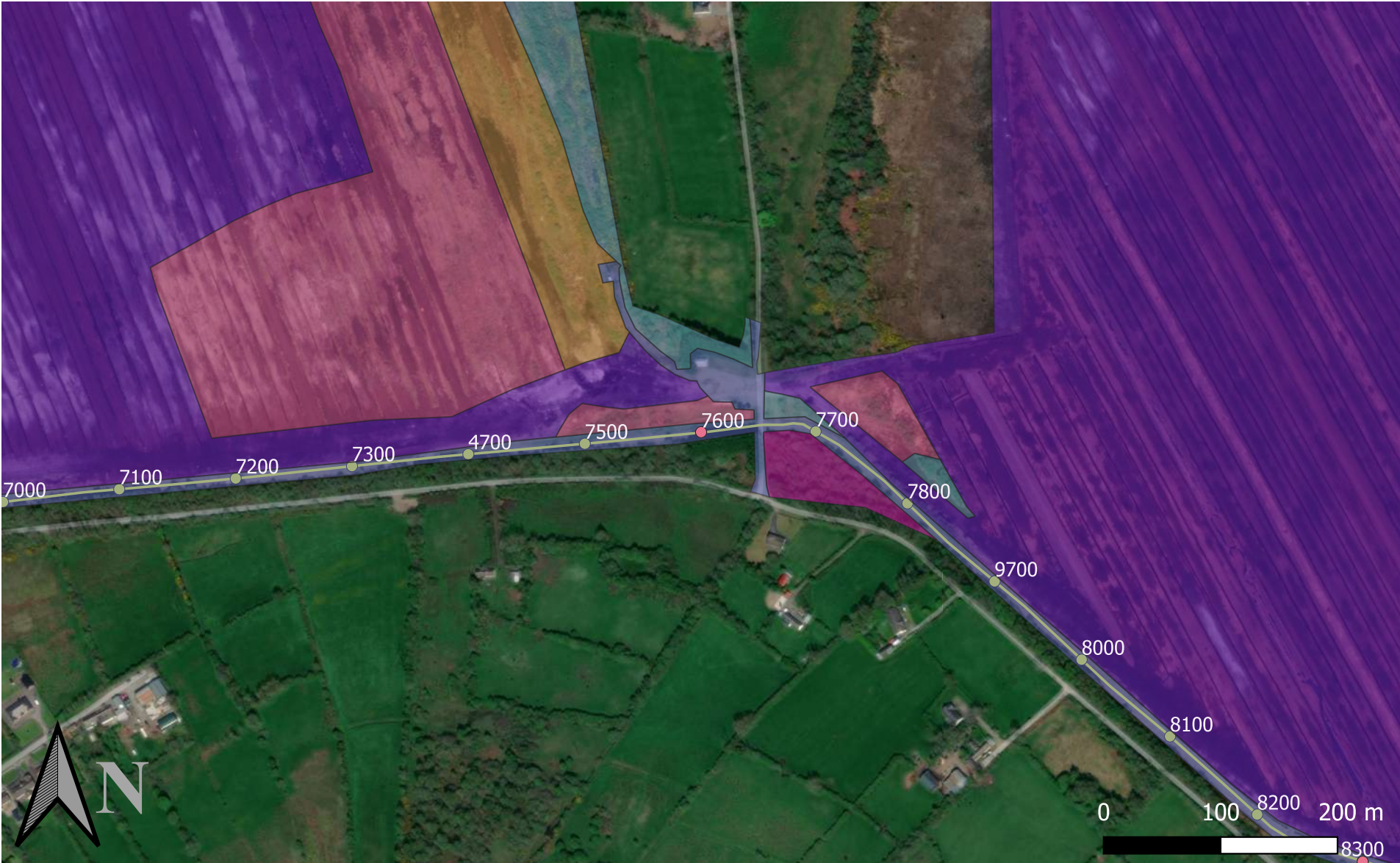
Ecological Constraints

- To be retained where possible

Boughill to Derryhaun habitats

- Bog woodland & wetland mosaic
- Buildings and artificial surfaces
- Cutover bog/Bare peat
- Emerging grassland and heath on cutover peat
- Heath

- Hedgerows
- Improved agricultural grassland
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Boughill to Derryhaun

● Boughill to Derryhaun Chainage

Boughill to Derryhaun habitats

■ Bog woodland & wetland mosaic

■ Conifer plantation

■ Cutover bog/Bare peat

■ Emerging grassland and heath on cutover peat

■ Recolonising bare ground/Buildings and artificial surfaces

■ Scrub



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Boughill to Derryhaun

● Boughill to Derryhaun Chainage

Ecological Constraints

● To be retained where possible

Boughill to Derryhaun habitats

■ Conifer plantation

■ Cutover bog/Bare peat

■ Emerging grassland and heath on cutover peat

■ Emerging woodland on cutover bog/Scrub

■ Hedgerows

■ Improved agricultural grassland

■ Recolonising bare ground/Buildings and artificial surfaces

■ Scrub



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Job:
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Base Map:
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Client: Clandillon
Civil Consulting

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Boughill to Derryhaun

- Boughill to Derryhaun Chainage
- Ecologically Sensitive Areas
- Water Courses

Ecological Constraints

- To be retained where possible

Boughill to Derryhaun habitats

- Conifer plantation
- Cutover bog/Bare peat
- Drainage ditches
- Emerging grassland and heath on cutover peat
- Emerging woodland on cutover bog/Scrub

- Heath
- Hedgerows
- Improved agricultural grassland
- Recolonising bare ground/Buildings and artificial surfaces
- Scrub



Prepared by:
Ian Douglas

Date:
21/06/21

Job:
MSWP Greenway

Base Map:
Bing Maps Aerial 2019

Client: **Clandillon Civil Consulting**

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Boughill to Derryhaun

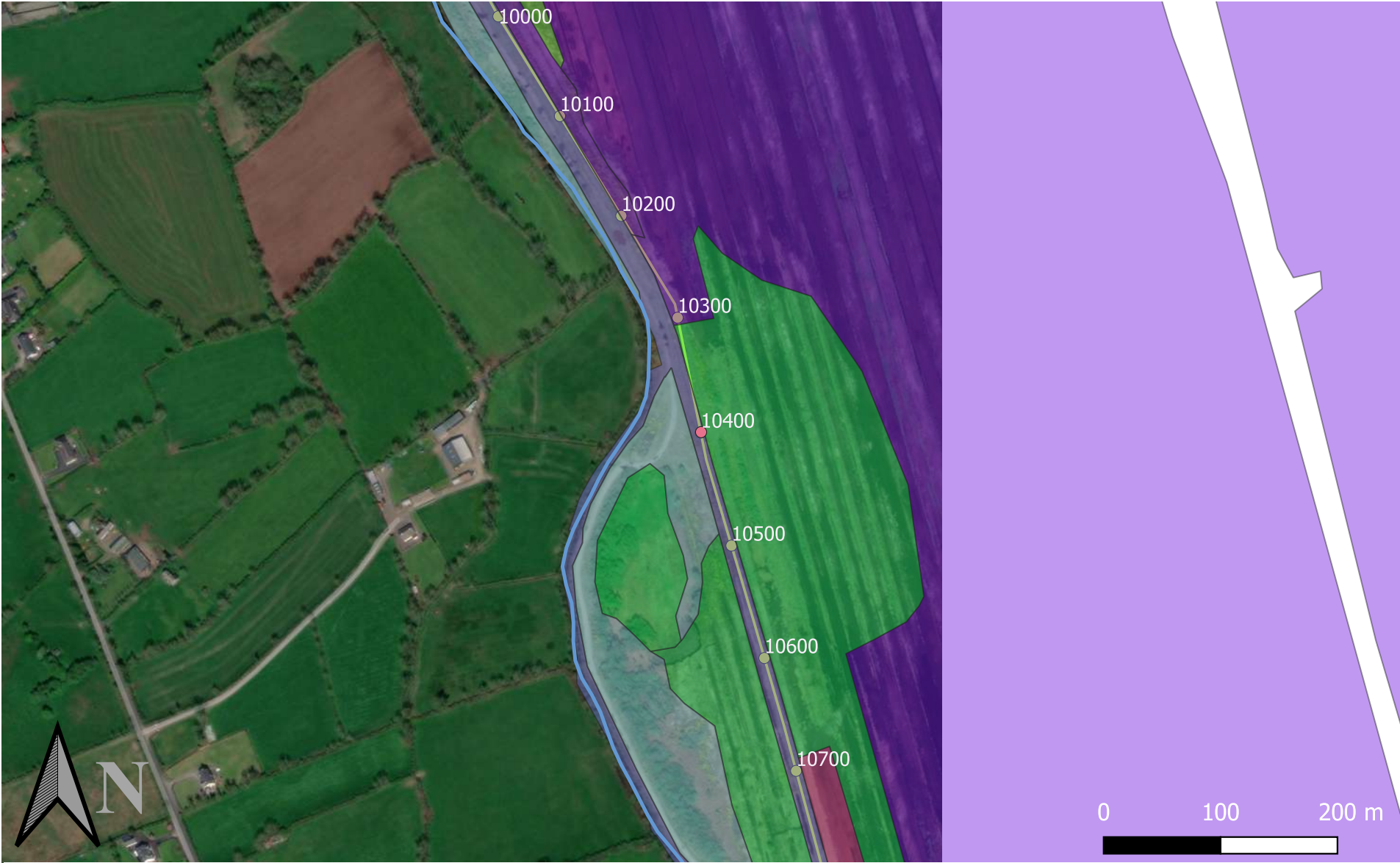
- Boughill to Derryhaun Chainage
- Ecologically Sensitive Areas
- Water Courses

Boughill to Derryhaun habitats

- Bog woodland
- Conifer plantation
- Cutover bog/Bare peat
- Drainage ditches

- Emerging grassland and heath on cutover peat
- Heath
- Mixed broadleaved woodland/Scrub
- Recolonising bare ground/Buildings and artificial surfaces
- Scrub

Boughill to Derryhaun: Ecological Constraints & Habitats



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Boughill to Derryhaun

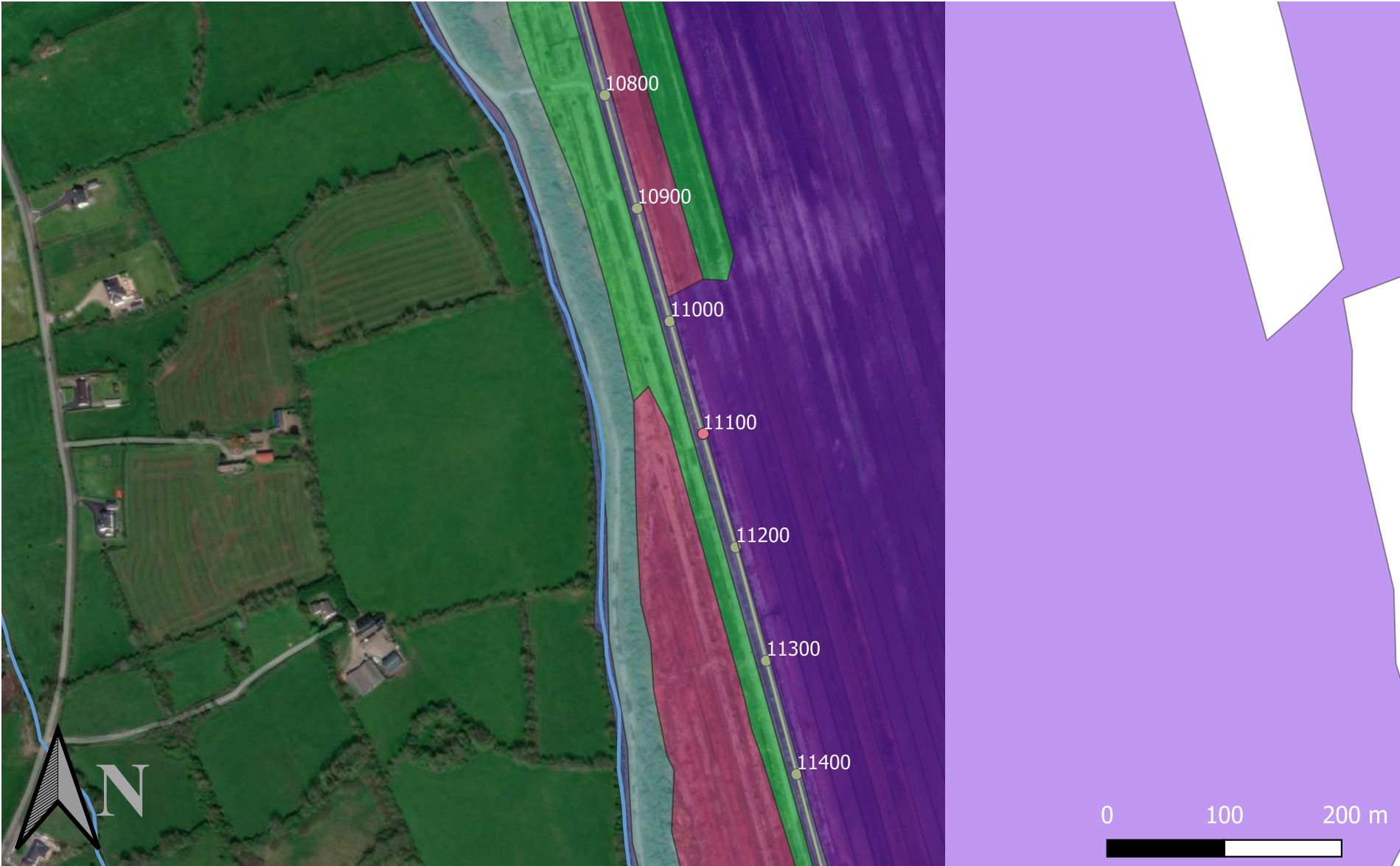
- Boughill to Derryhaun Chainage
- Water Courses

Boughill to Derryhaun habitats

- Bog woodland
- Cutover bog/Bare peat
- Emerging grassland and heath on cutover peat

- Emerging woodland on cutover bog
- Heath
- Recolonising bare ground/Buildings and artificial surfaces

Boughill to Derryhaun: Ecological Constraints & Habitats



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Boughill to Derryhaun

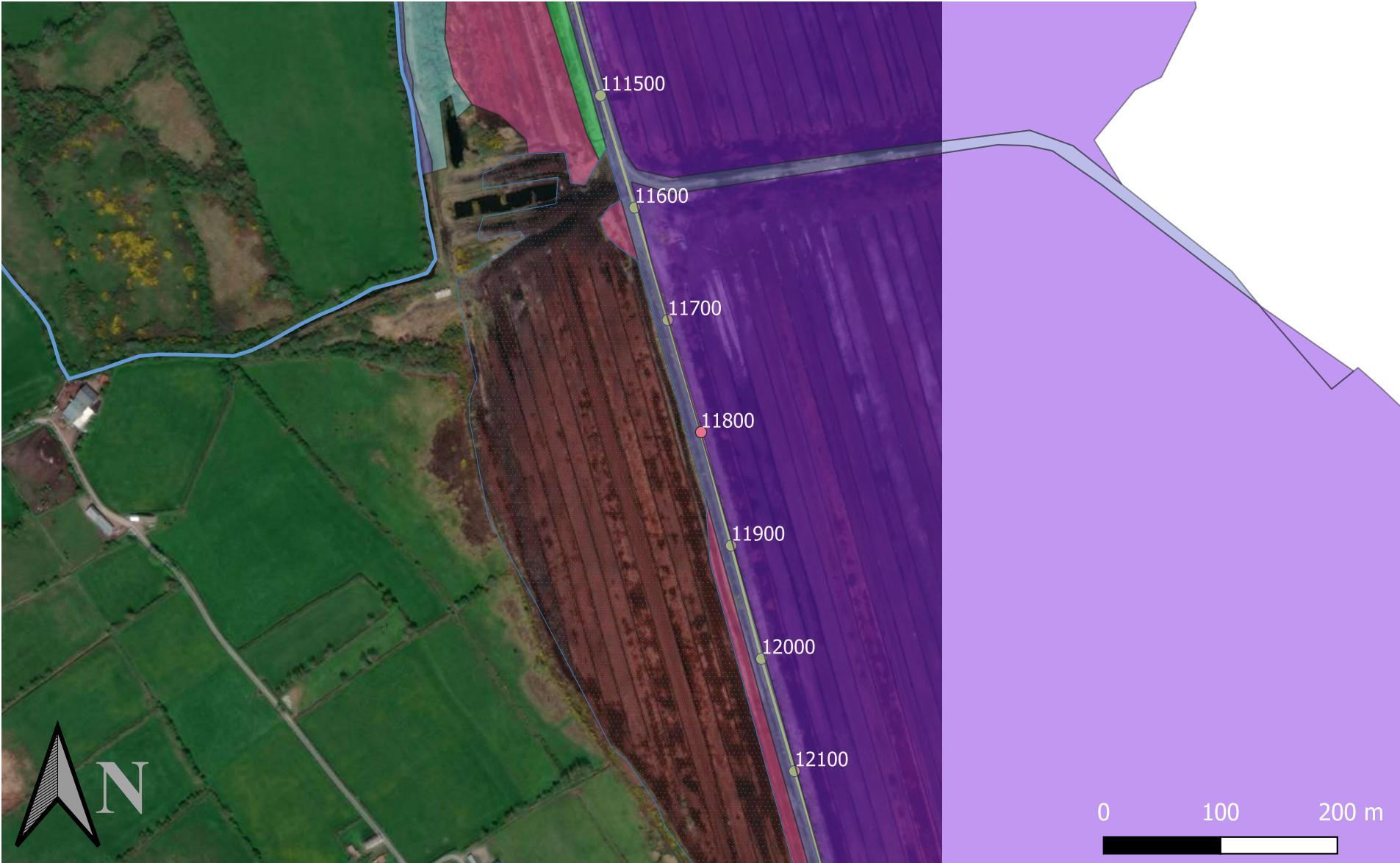
- Boughill to Derryhaun Chainage
- Water Courses

Boughill to Derryhaun habitats

- Bog woodland
- Cutover bog/Bare peat

- Emerging grassland and heath on cutover peat
- Emerging woodland on cutover bog
- Recolonising bare ground/Buildings and artificial surfaces

Boughill to Derryhaun: Ecological Constraints & Habitats



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Boughill to Derryhaun

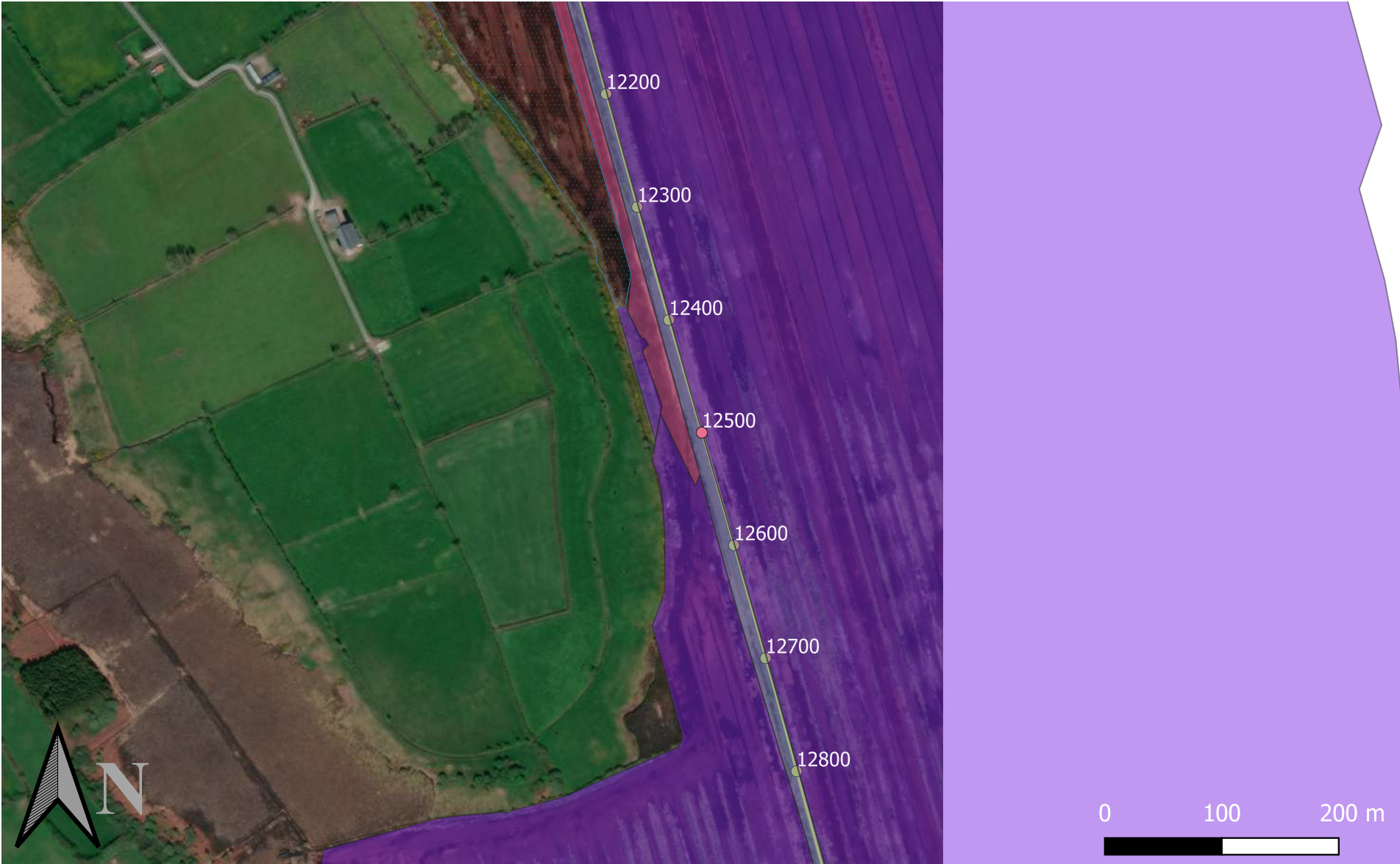
- Boughill to Derryhaun Chainage
- Ecologically Sensitive Areas
- Water Courses

Boughill to Derryhaun habitats

- Bog woodland
- Cutover bog/Bare peat
- Emerging grassland and heath on cutover peat

- Emerging woodland on cutover bog
- Recolonising bare ground/Buildings and artificial surfaces

Boughill to Derryhaun: Ecological Constraints & Habitats



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Boughill to Derryhaun

- Boughill to Derryhaun Chainage
- Ecologically Sensitive Areas

Boughill to Derryhaun habitats

- Cutover bog/Bare peat
- Emerging grassland and heath on cutover peat

Recolonising bare ground/Buildings and artificial surfaces

Boughill to Derryhaun: Ecological Constraints & Habitats



Preparedby:
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- Boughill to Derryhaun

Boughill to Derryhaun Chainage

Ecologically Sensitive Areas
- Water Courses
- Boughill to Derryhaun habitats**
- Cutover bog/Bare peat

 Recolonising bare ground/Buildings and artificial surfaces Scrub

Map 21 of 42



Date:
21/06/21

Job:
MSWP Greenway


**Base Map:
Bing Maps Aerial
2019**

**Client: Clandillon
Civil Consulting**

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- Boughill to Derryhaun Chainage

 Ecologically Sensitive Areas





Water Courses





Ecological Constraints

- To be removed where possible

- To be retained where possible

Boughill to Derryhaun habitats

-  Buildings and artificial surfaces
-  Cutover bog/Bare peat
-  Emerging grassland and heath on cutover peat
-  Emerging woodland on cutover bog

-  Emerging woodland on cutover bog/Scrub
-  Hedgerows
-  Recolonising bare ground/Buildings and artificial surfaces
-  Scrub

Boughill to Derryhaun: Ecological Constraints & Habitats



Preparedby:
IanDouglas

Date:
21/06/21

Job:
MSWP Greenway

Base Map:
Bing Maps Aerial
2019

Client: Clandillon
Civil Consulting

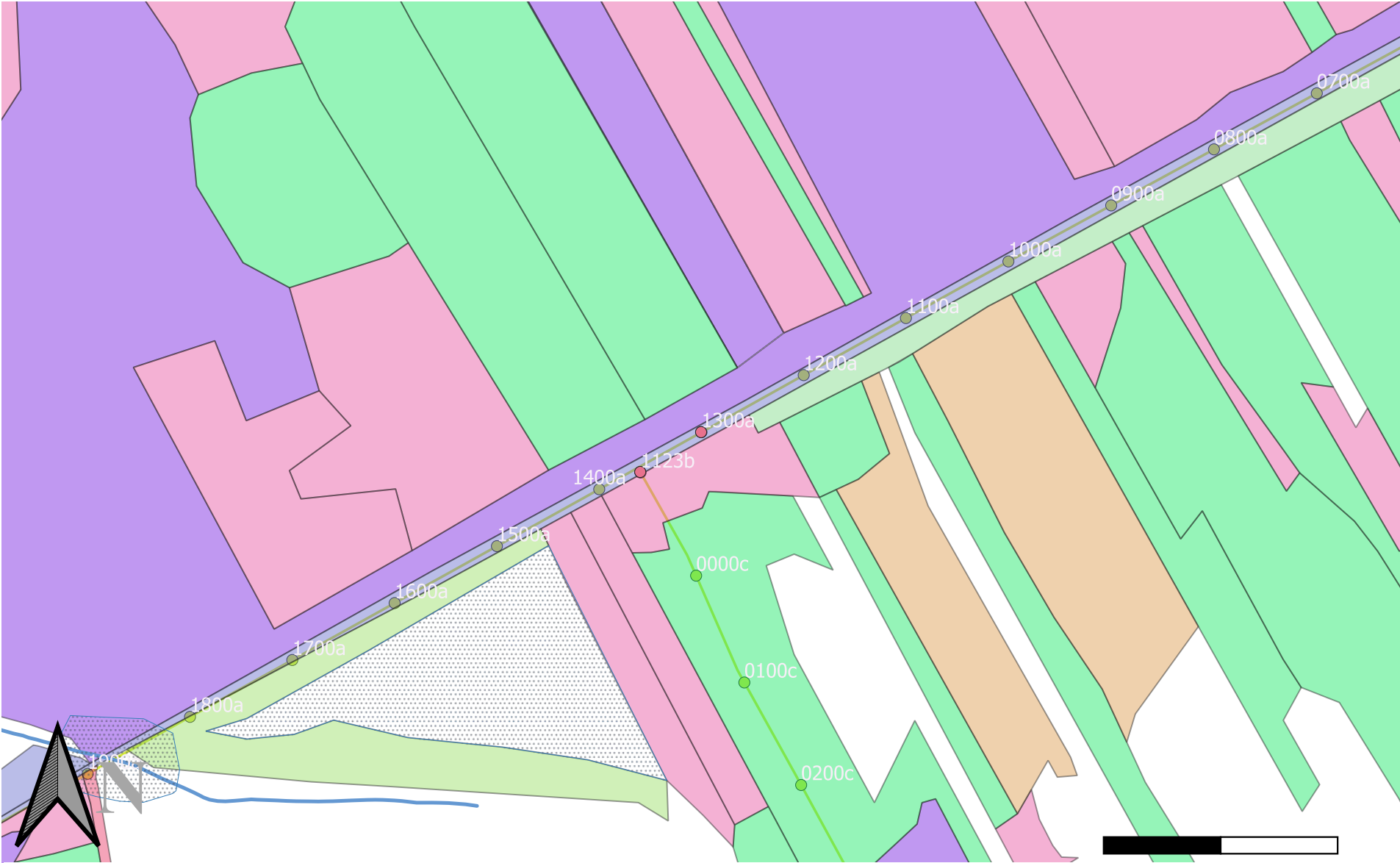
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- Boughill to Derryhaun**

 - Boughill to Derryhaun Chainage
 - Ecologically Sensitive Areas

Boughill to Derryhaun habitats

 - Bog woodland & wetland mosaic
- Buildings and artificial surfaces
 - Cutover bog/Bare peat
 - Emerging grassland and heath on cutover peat
 - Emerging woodland on cutover bog
 - Emerging woodland on cutover bog/Scrub
- Hedgerows
 - Recolonising bare ground/Buildings and artificial surfaces
 - Scrub



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IanDouglas

Date:
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Boughill to Derryhaun

- Boughill to Derryhaun Chainage
- Ecologically Sensitive Areas
- Water Courses

Boughill to Derryhaun habitats

- Bog woodland & wetland mosaic
- Bog woodland/Scrub
- Cutover bog/Bare peat
- Drainage ditches

Emerging grassland and heath on cutover peat

Emerging woodland on cutover bog

Emerging woodland on cutover bog/Scrub

Recolonising bare ground/Buildings and artificial surfaces

Boughill to Derryhaun: Ecological Constraints & Habitats



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Boughill to Derryhaun

- Boughill to Derryhaun Chainage
- Ecologically Sensitive Areas
- Water Courses

Boughill to Derryhaun habitats

- Amenity grassland
- Bog woodland & wetland mosaic
- Bog woodland/Scrub
- Buildings and artificial surfaces
- Cutover bog/Bare peat
- Drainage ditches
- Emerging grassland and heath on cutover peat

- Emerging woodland on cutover bog
- Hedgerows
- Improved agricultural grassland
- Recolonising bare ground/Buildings and artificial surfaces
- Scrub

Boughill to Derryhaun: Ecological Constraints & Habitats



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Boughill to Derryhaun

- Boughill to Derryhaun Chainage
- Ecologically Sensitive Areas
- Water Courses

Boughill to Derryhaun habitats

- Amenity grassland
- Bog woodland & wetland mosaic
- Buildings and artificial surfaces
- Cutover bog/Bare peat

- Drainage ditches
- Hedgerows
- Improved agricultural grassland
- Recolonising bare ground/Buildings and artificial surfaces
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Boughill to Derryhaun: Ecological Constraints & Habitats



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Boughill to Derryhaun

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- Ecologically Sensitive Areas
- Water Courses

Boughill to Derryhaun habitats

- Buildings and artificial surfaces
- Cutover bog/Bare peat
- Drainage ditches

- Emerging grassland and heath on cutover peat
- Hedgerows
- Recolonising bare ground/Buildings and artificial surfaces
- Wet grassland

Boughill to Derryhaun: Ecological Constraints & Habitats



Prepared by:
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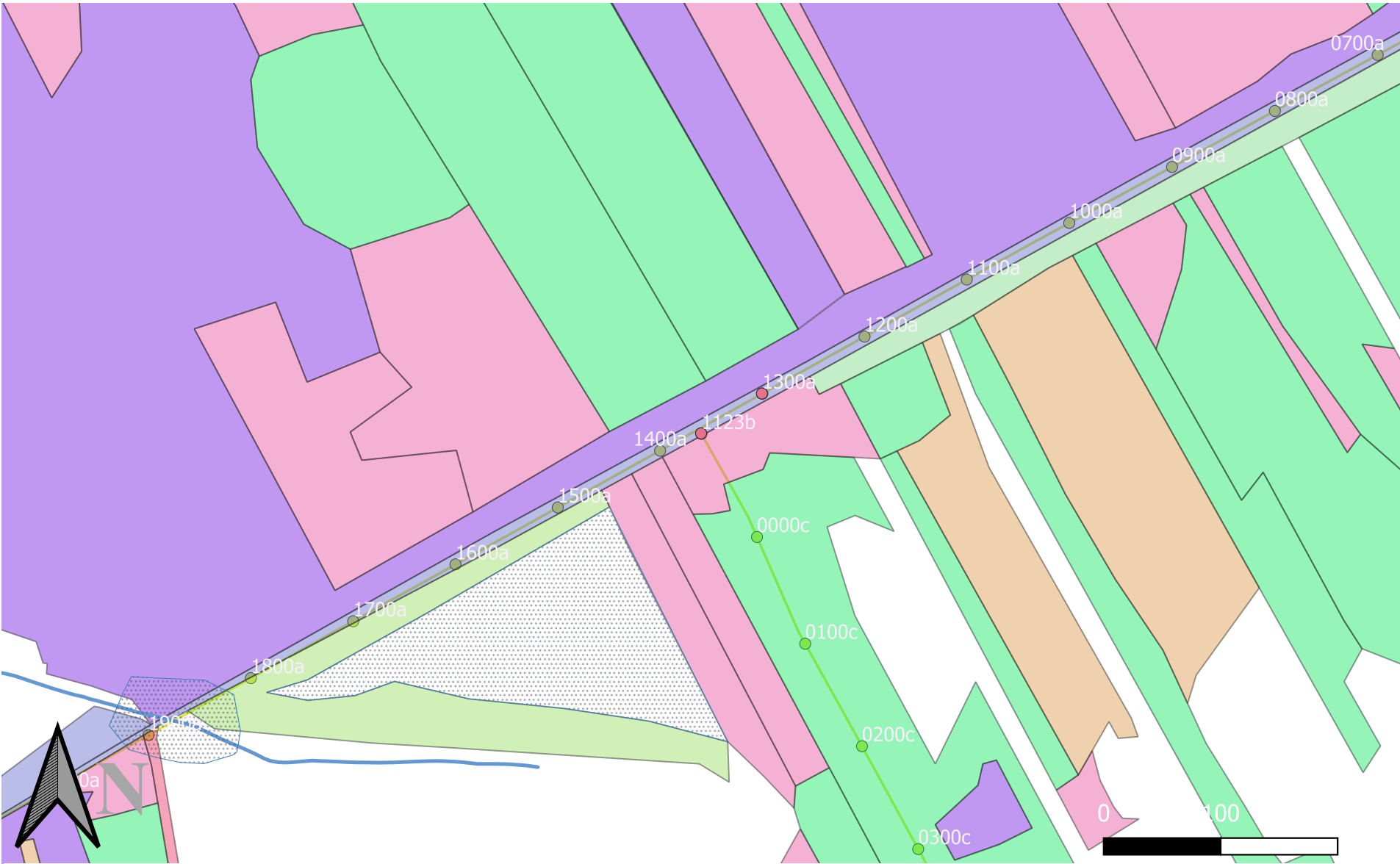
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MSWP Greenway

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Civil Consulting

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Boughill to Derryhaun

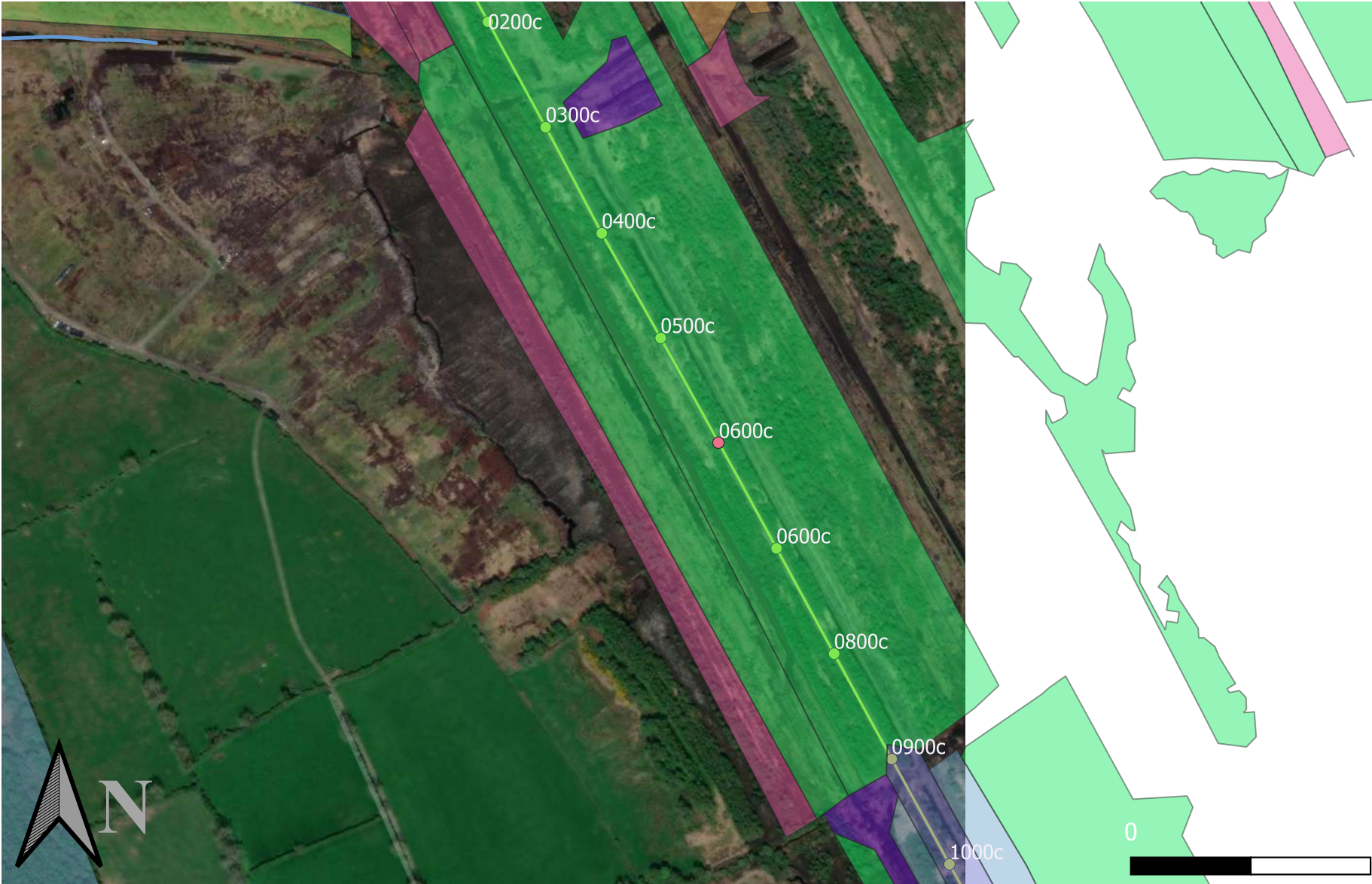
- Boughill to Derryhaun Chainage
- Ecologically Sensitive Areas
- Water Courses

Boughill to Derryhaun habitats

- Bog woodland & wetland mosaic
- Bog woodland/Scrub
- Cutover bog/Bare peat
- Drainage ditches

- Emerging grassland and heath on cutover peat
- Emerging woodland on cutover bog/Scrub
- Recolonising bare ground/Buildings and artificial surfaces

Boughill to Derryhaun: Ecological Constraints & Habitats



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Boughill to Derryhaun

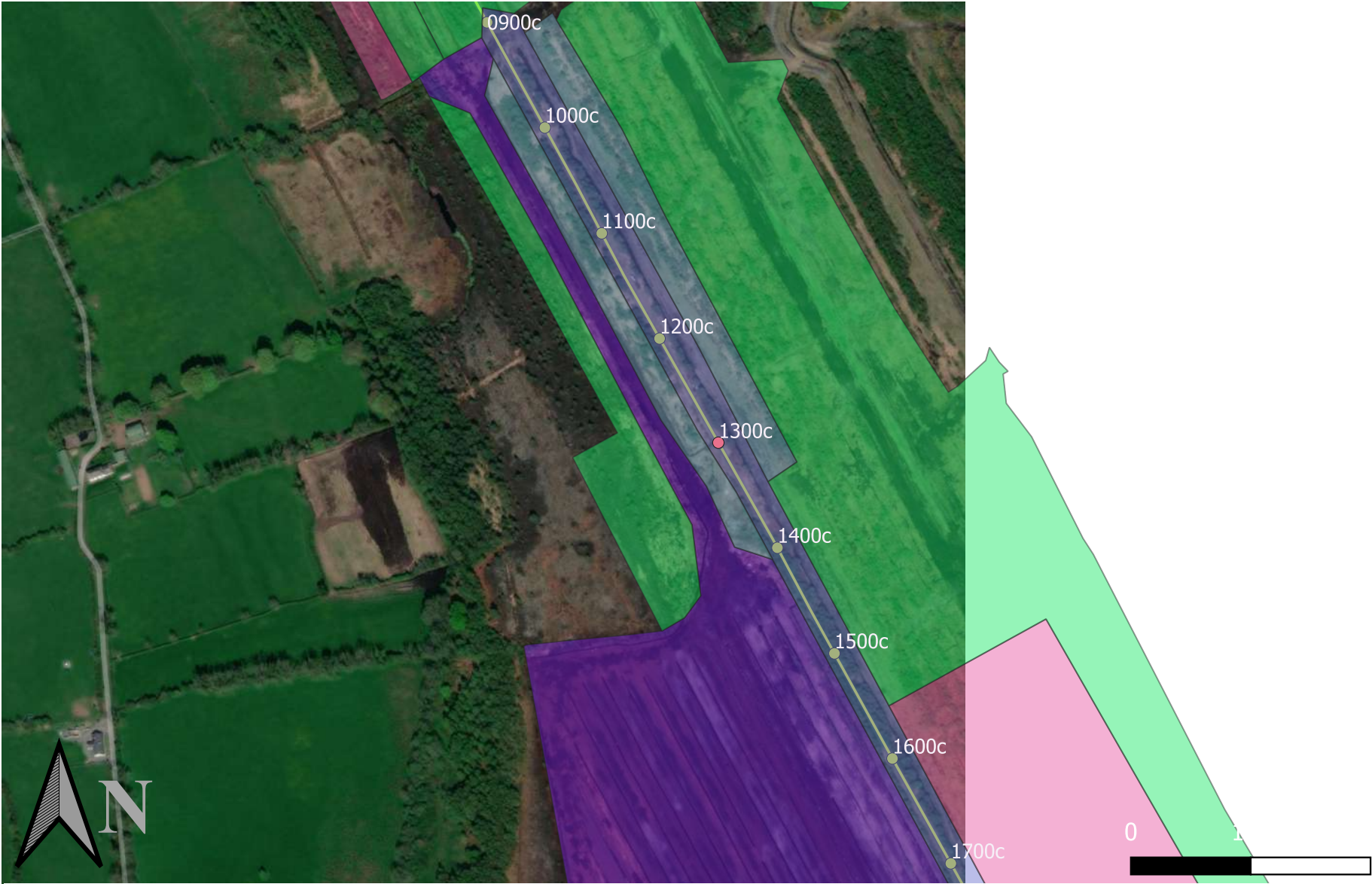
- Boughill to Derryhaun Chainage
- Ecologically Sensitive Areas
- Water Courses

Boughill to Derryhaun habitats

- Bog woodland & wetland mosaic
- Bog woodland/Scrub
- Cutover bog/Bare peat

- Emerging grassland and heath on cutover peat
- Emerging woodland on cutover bog
- Recolonising bare ground/Buildings and artificial surfaces
- Scrub

Boughill to Derryhaun: Ecological Constraints & Habitats



Preparedby:
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Boughill to Derryhaun

● Boughill to Derryhaun Chainage

Boughill to Derryhaun habitats

■ Cutover bog/Bare peat

■ Emerging grassland and heath on cutover peat

■ Emerging woodland on cutover bog

■ Recolonising bare ground/Buildings and artificial surfaces

■ Scrub

Boughill to Derryhaun: Ecological Constraints & Habitats



Preparedby:
IanDouglas

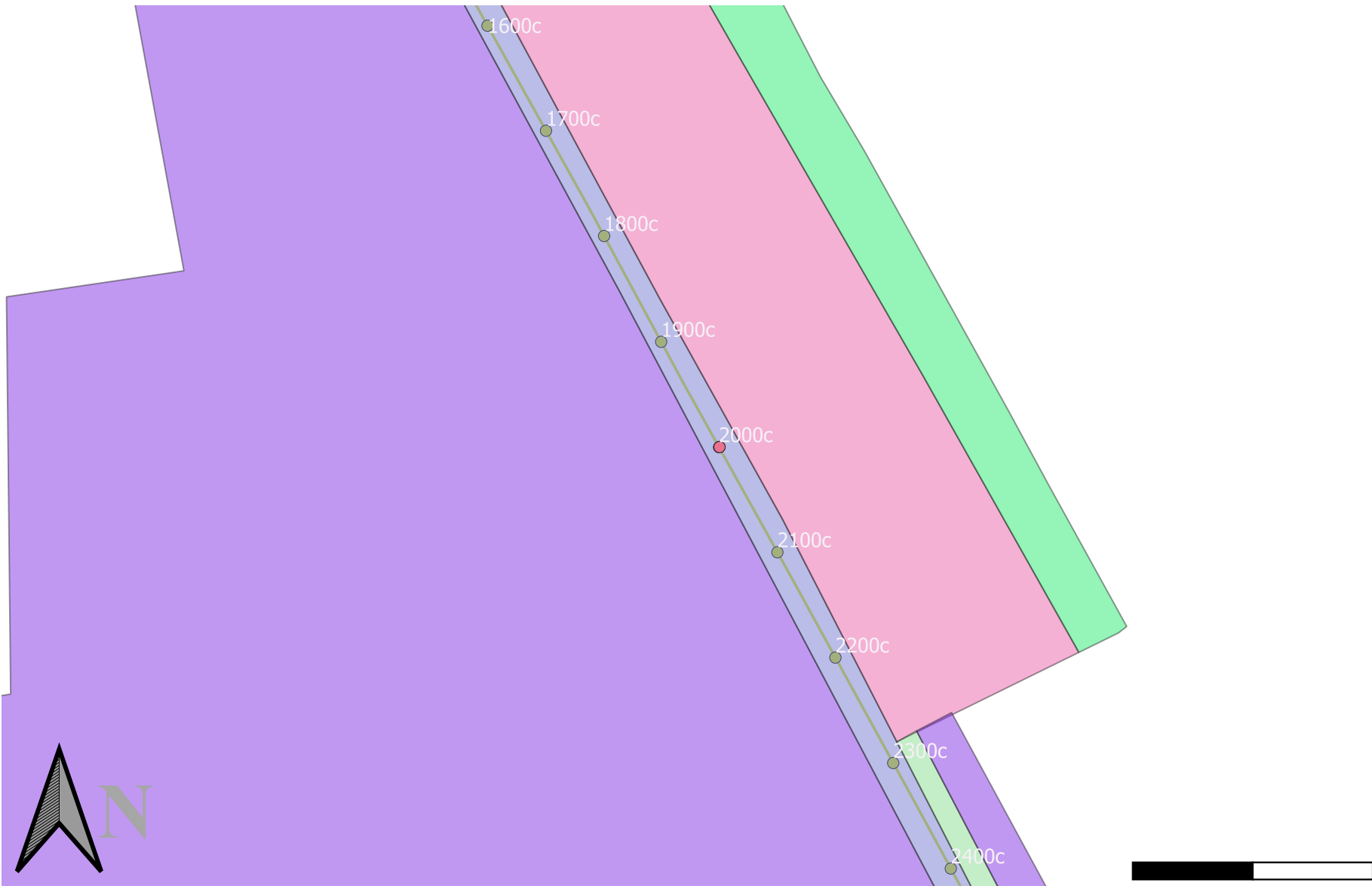
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Civil Consulting

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Boughill to Derryhaun

● Boughill to Derryhaun Chainage

Boughill to Derryhaun habitats

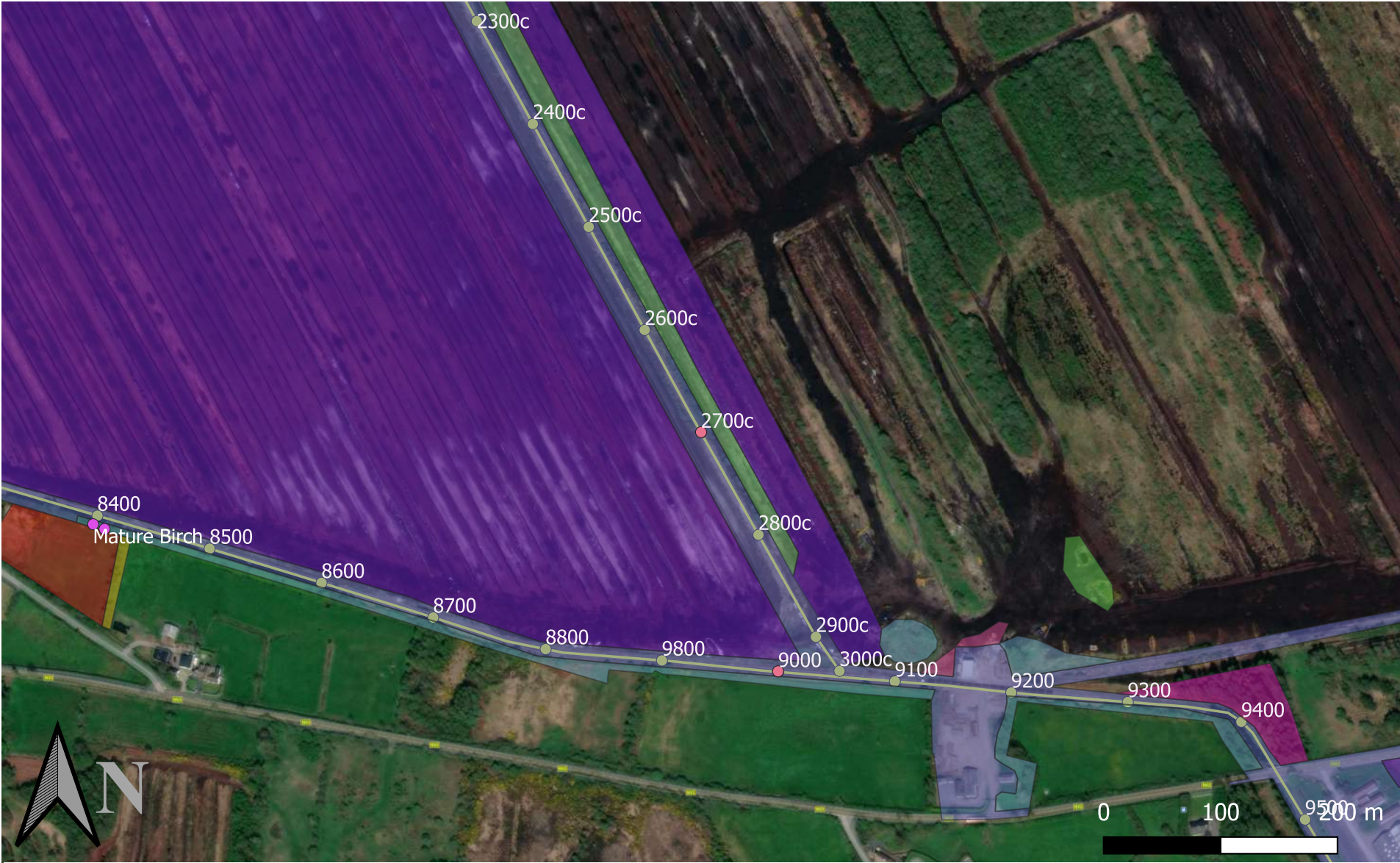
■ Cutover bog/Bare peat

■ Emerging grassland and heath on cutover peat

■ Emerging woodland on cutover bog

■ Emerging woodland on cutover bog/Scrub

■ Recolonising bare ground/Buildings and artificial surfaces



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Boughill to Derryhaun

● Boughill to Derryhaun Chainage

Ecological Constraints

● To be retained where possible

Boughill to Derryhaun habitats

■ Conifer plantation

■ Cutover bog/Bare peat

■ Emerging grassland and heath on cutover peat

■ Emerging woodland on cutover bog/Scrub

■ Heath

■ Hedgerows

■ Improved agricultural grassland

■ Recolonising bare ground/Buildings and artificial surfaces

■ Scrub

Map 32 of 42



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Civil Consulting

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Boughill to Derryhaun

- Boughill to Derryhaun Chainage
- Water Courses

Boughill to Derryhaun habitats

- Buildings and artificial surfaces
- Hedgerows
- Improved agricultural grassland

- Mixed broadleaved woodland/Scrub
- Recolonising bare ground/Buildings and artificial surfaces
- Scrub
- Treelines



Preparedby:
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Ecological Constraints

- Notes
- To be retained where possible

Boughill to Derryhaun habitats

- Emerging grassland and heath on cutover peat

- Recolonising bare ground/Buildings and artificial surfaces



Prepared by:
Ian Douglas

Date:
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Job:
MSWP Greenway

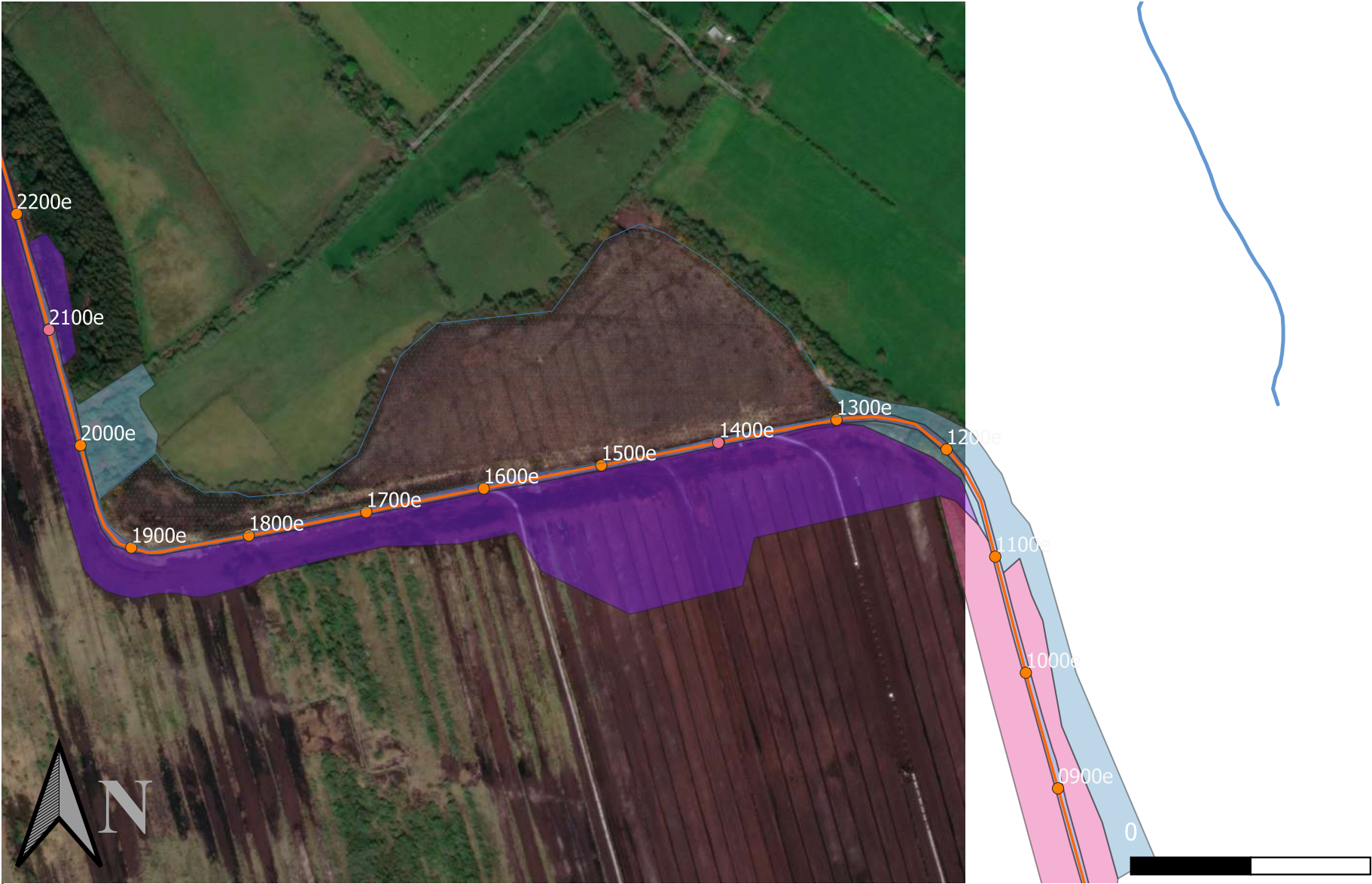
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- Boughill to Derryhaun habitats**
- Emerging grassland and heath on cutover peat
 - Scrub
 - Cutover bog/Bare peat
 - Recolonising bare ground/Buildings and artificial surfaces

Boughill to Derryhaun: Ecological Constraints & Habitats



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Date:
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Job:
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Ecologically Sensitive Areas

Water Courses

Boughill to Derryhaun habitats

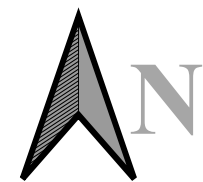
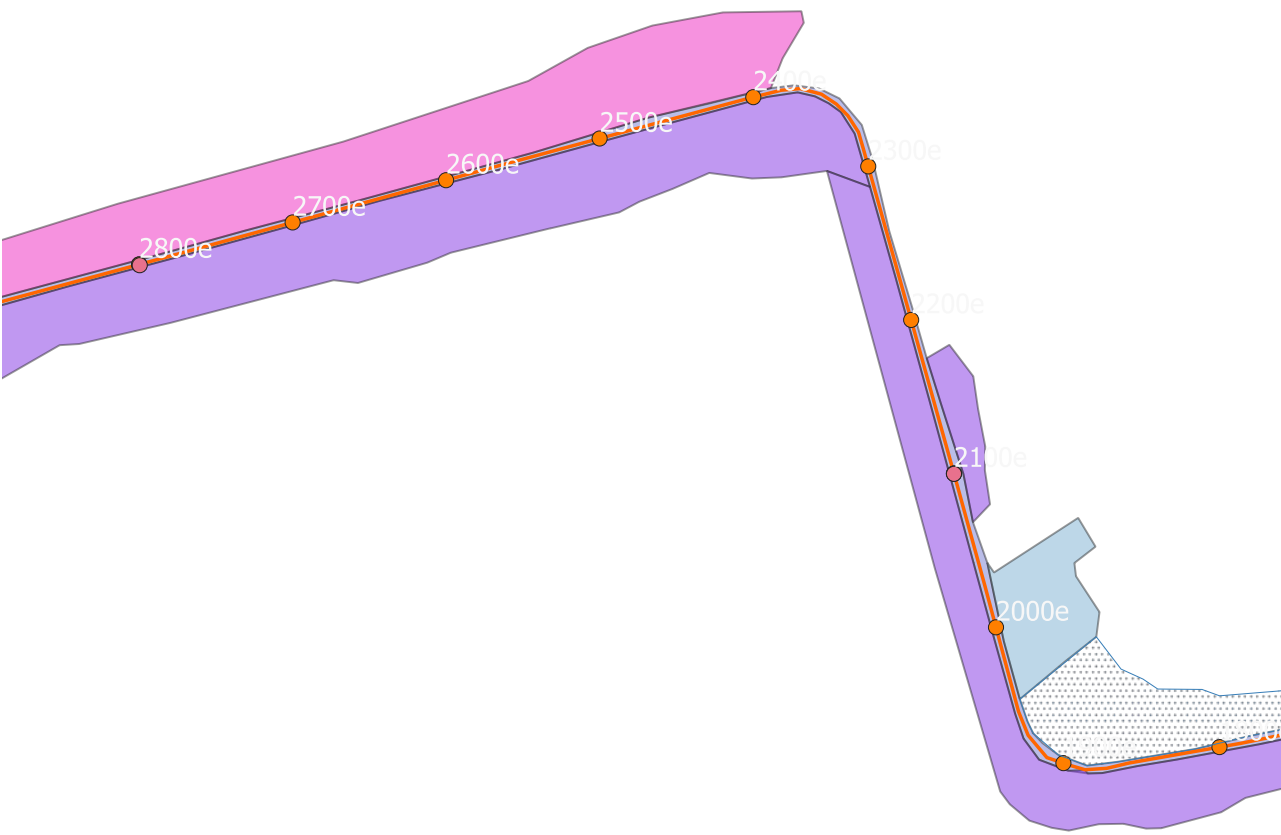
Cutover bog/Bare peat

Emerging grassland and heath on cutover peat

Recolonising bare ground/Buildings and artificial surfaces

Scrub

Boughill to Derryhaun: Ecological Constraints & Habitats



- Ecologically Sensitive Areas
- Cutover bog/Bare peat
- Recolonising bare ground/Buildings and artificial surfaces
- Conifer plantation
- Scrub



Prepared by:
Ian Douglas

Date:
21/06/21

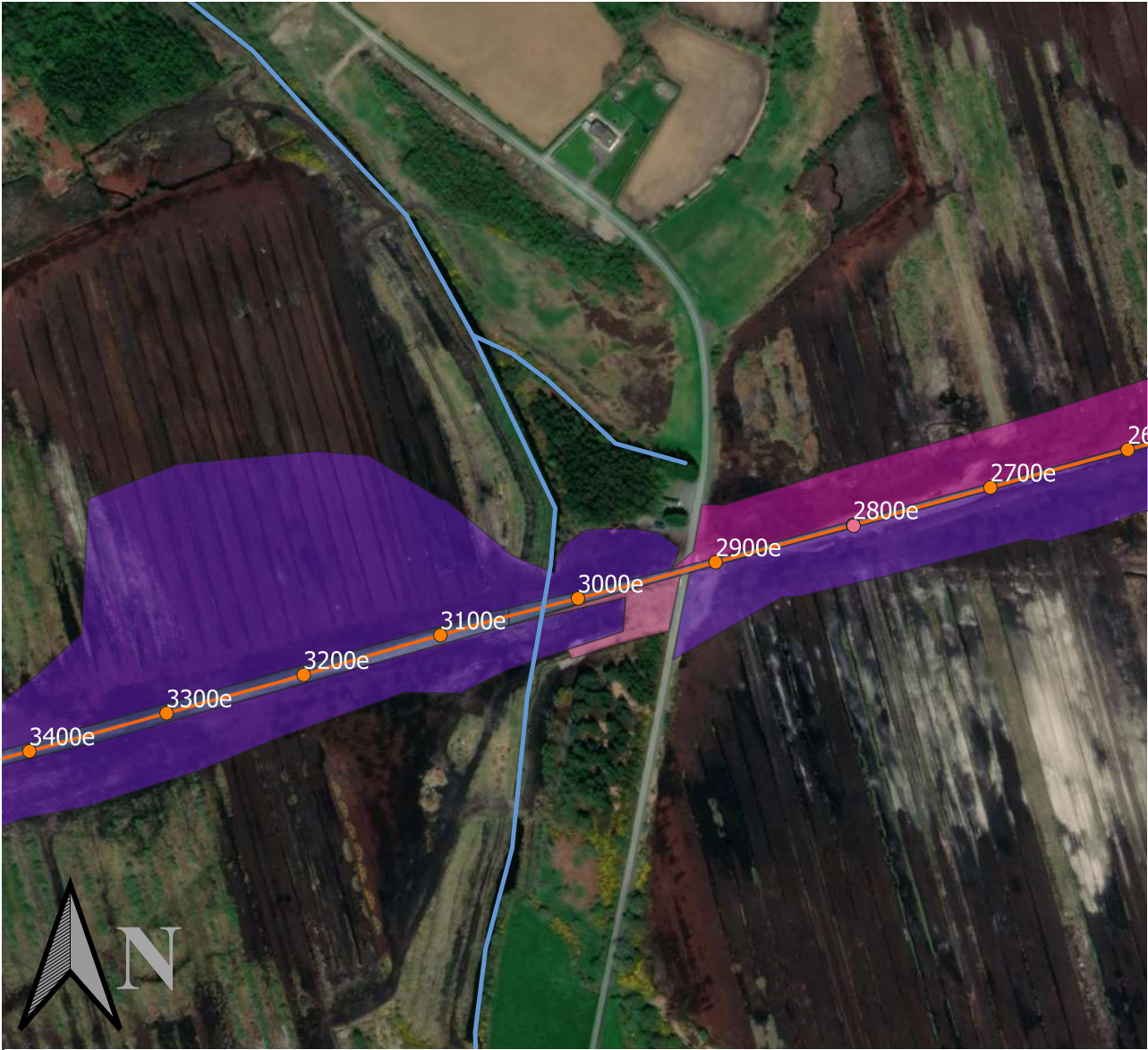
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Boughill to Derryhaun: Ecological Constraints & Habitats



Prepared by:
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21/06/21

Job:
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Base Map:
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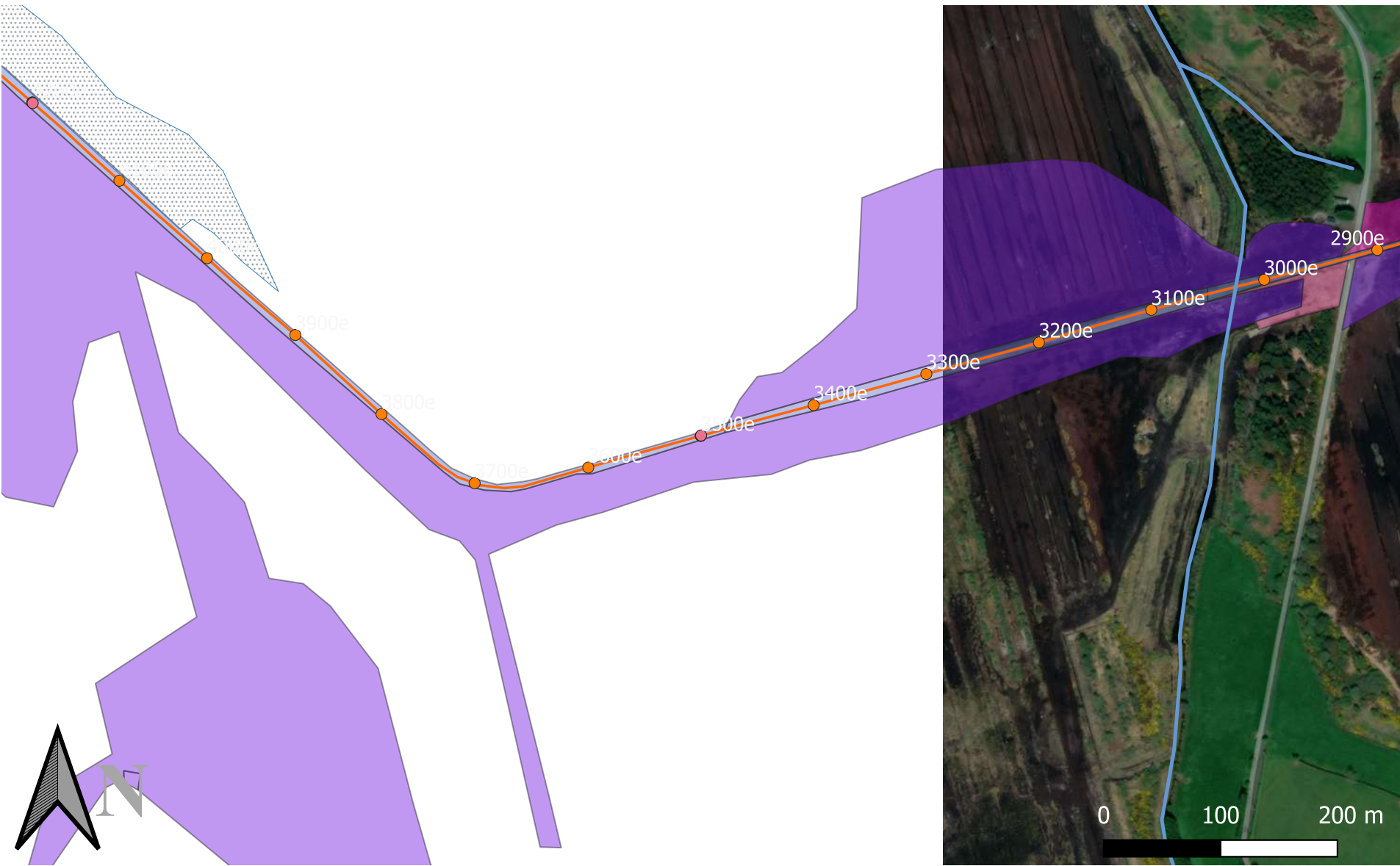
Client: **Clandillon Civil Consulting**

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-  Ecologically Sensitive Areas
-  Water Courses
- Boughill to Derryhaun habitats**
-  Conifer plantation
-  Cutover bog/Bare peat
-  Emerging grassland and heath on cutover peat
-  Recolonising bare ground/Buildings and artificial surfaces
-  Scrub



Boughill to Derryhaun: Ecological Constraints & Habitats



Preparedby:
IanDouglas

Date:
21/06/21

Job:
MSWP Greenway

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Civil Consulting

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- Ecologically Sensitive Areas

Water Courses
- Conifer plantation

Cutover bog/Bare peat
- Emerging grassland and heath on cutover peat

Recolonising bare ground/Buildings and artificial surfaces
- Boughill to Derryhaun habitats**

Boughill to Derryhaun: Ecological Constraints & Habitats





 Ecologically Sensitive Areas

 Drainage ditches

 Scrub

Boughill to Derryhaun habitats

 Recolonising bare ground/Buildings and artificial surfaces

 Cutover bog/Bare peat



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Ecologically Sensitive Areas

Ecological Constraints

● Notes

Boughill to Derryhaun habitats

Conifer plantation

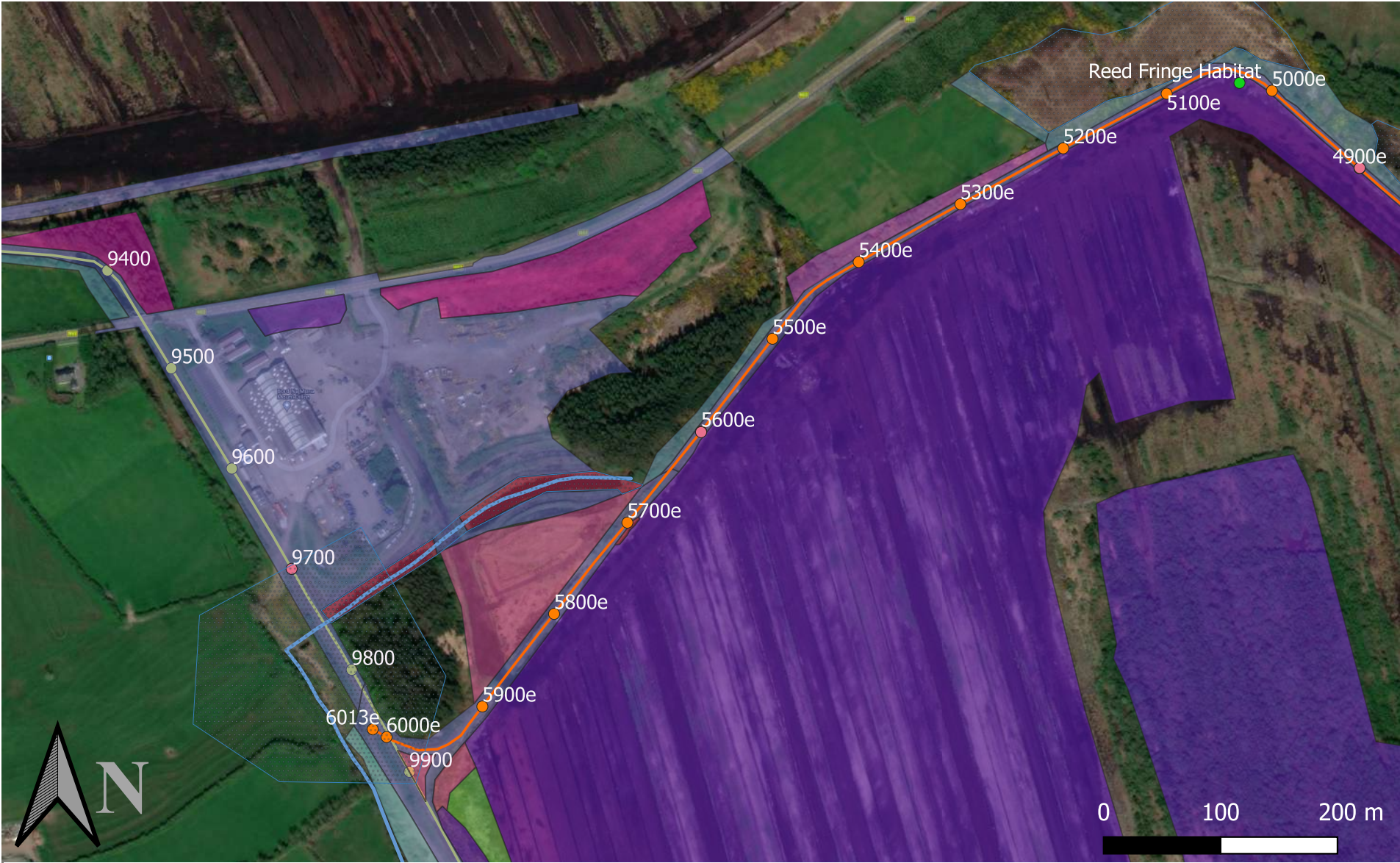
Cutover bog/Bare peat

Drainage ditches

Mixed broadleaved woodland/Scrub

Recolonising bare ground/Buildings and artificial surfaces

Scrub



Prepared by:
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21/06/21

Job:
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Boughill to Derryhaun

- Boughill to Derryhaun Chainage
- Ecologically Sensitive Areas
- Water Courses

Ecological Constraints

- Notes

Boughill to Derryhaun habitats

- Bog woodland
- Conifer plantation
- Cutover bog/Bare peat
- Drainage ditches
- Emerging grassland and heath on cutover peat

- Heath
- Mixed broadleaved woodland/Scrub
- Recolonising bare ground/Buildings and artificial surfaces
- Scrub

Overview of Chainage Sections

Boughill to Derryhaun

CLIENT: Clandillon Civil Consulting

Legend

— Proposed Route

▭ Boughill to Derryhaun Sections



Prepared by: Ian Douglas

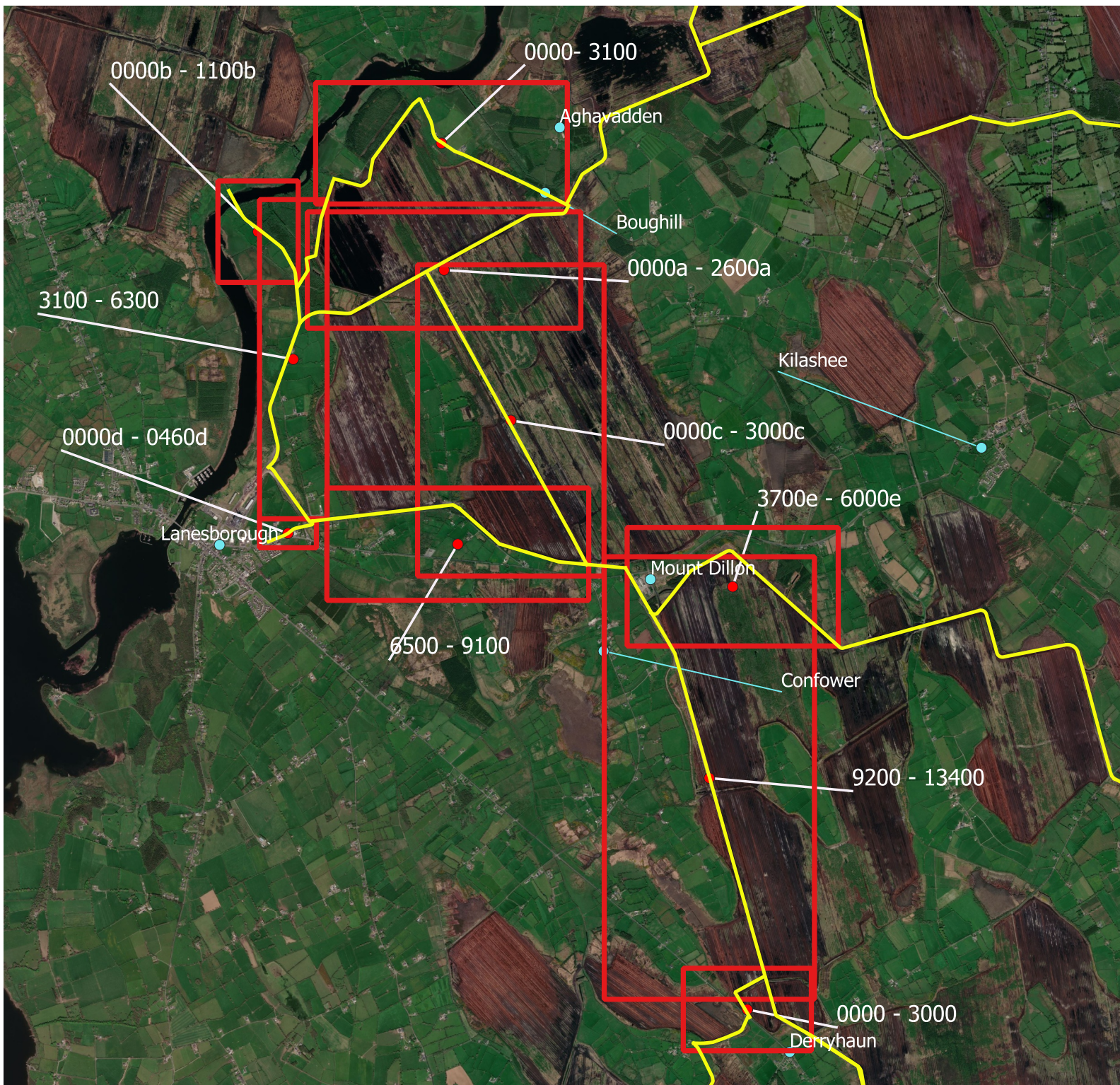
Date: 24/06/2021

Version number: 2

Job Reference: Longford Greenway

Base Map: Bing Aerial 2019

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Date:
21/06/21

Job:
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2019

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Boughill to Derryhaun

- Boughill to Derryhaun Chainage
- Ecologically Sensitive Areas
- Water Courses

Ecological Constraints

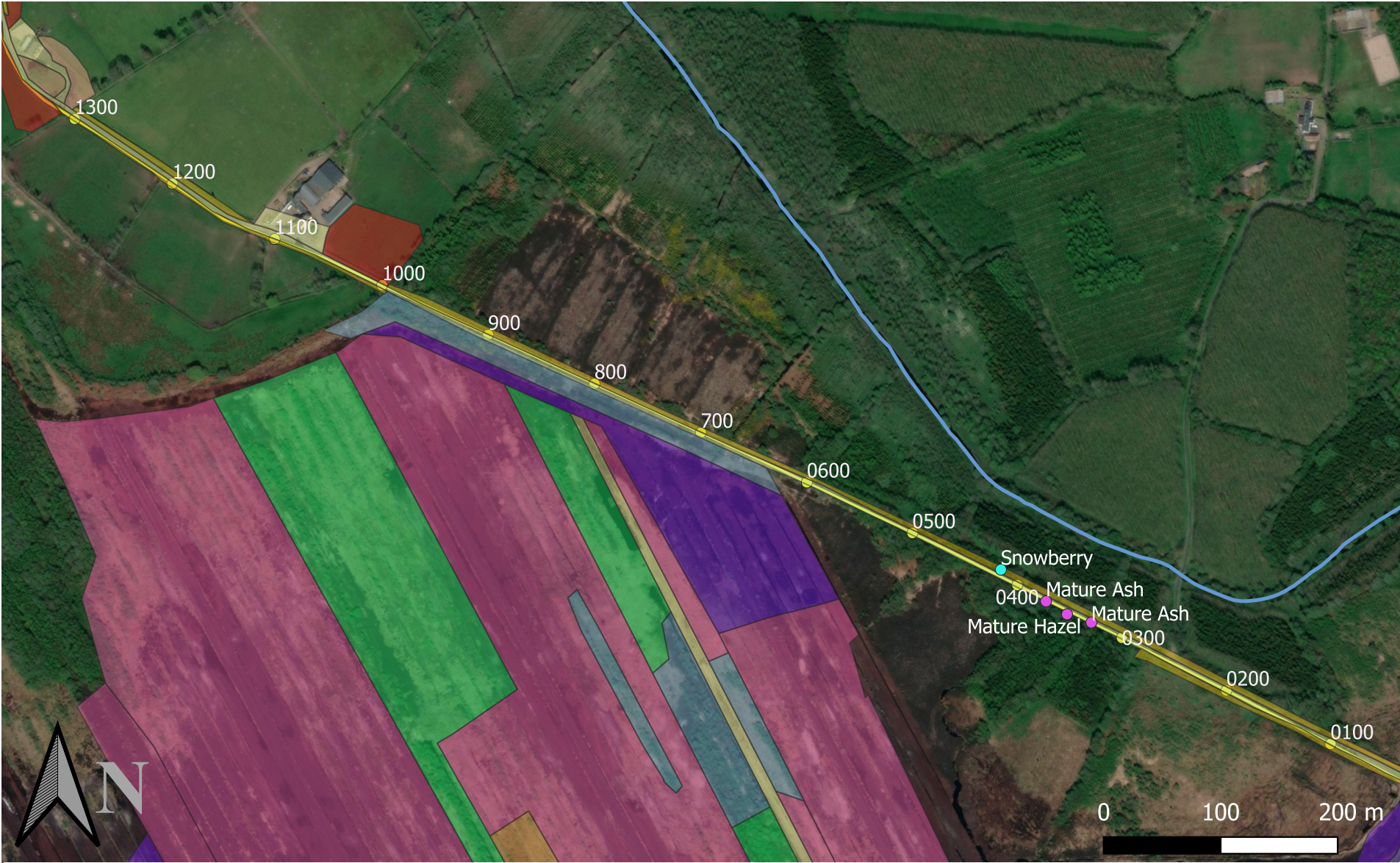
- To be removed where possible

- To be retained where possible

Boughill to Derryhaun habitats

- Buildings and artificial surfaces
- Cutover bog/Bare peat
- Emerging grassland and heath on cutover peat
- Emerging woodland on cutover bog

- Emerging woodland on cutover bog/Scrub
- Hedgerows
- Recolonising bare ground/Buildings and artificial surfaces
- Scrub



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Date:
21/06/21

Job:
MSWP Greenway

Base Map:
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Client: Clandillon Civil Consulting

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Boughill to Derryhaun

- Boughill to Derryhaun Chainage
- Water Courses

Ecological Constraints

- To be removed where possible
- To be retained where possible

Boughill to Derryhaun habitats

- Amenity grassland
- Bog woodland & wetland mosaic
- Buildings and artificial surfaces
- Cutover bog/Bare peat
- Emerging grassland and heath on cutover peat

- Emerging woodland on cutover bog
- Hedgerows
- Improved agricultural grassland
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- Water Courses

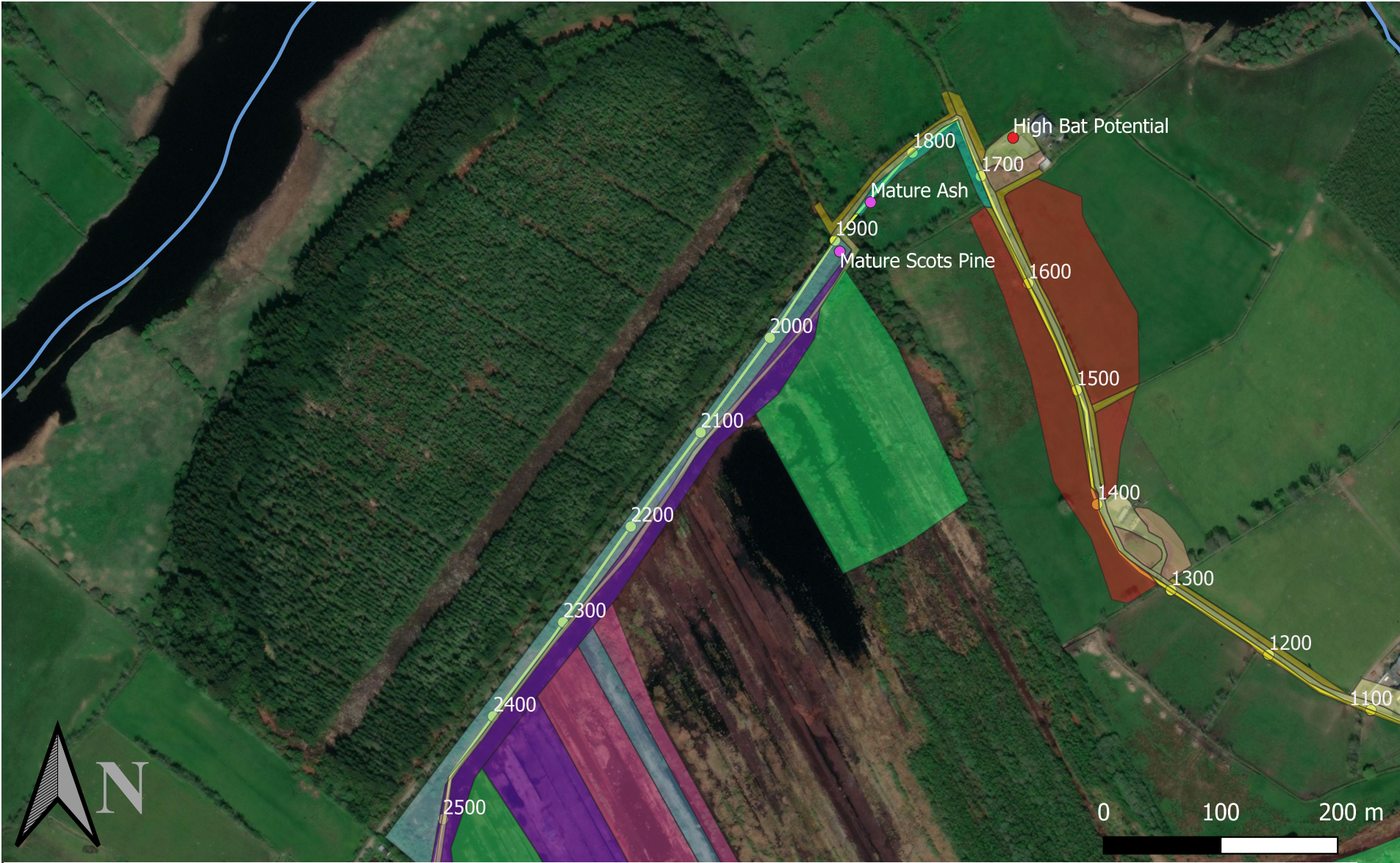
Ecological Constraints

- To be protected
- To be retained where possible

Boughill to Derryhaun habitats

- Amenity grassland
- Bog woodland
- Buildings and artificial surfaces
- Cutover bog/Bare peat
- Emerging grassland and heath on cutover peat

- Emerging woodland on cutover bog
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Boughill to Derryhaun

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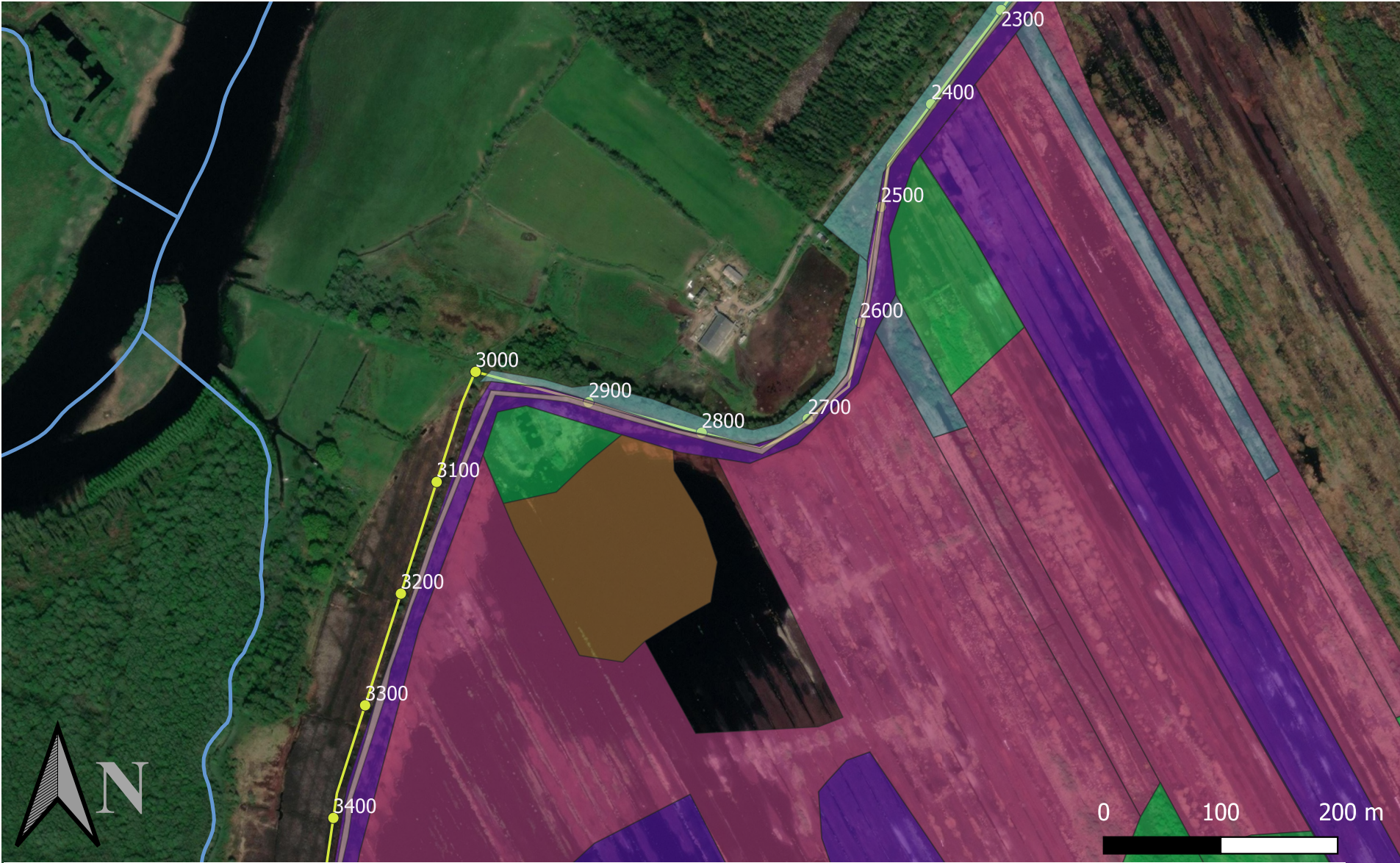
Ecological Constraints

- To be protected
- To be retained where possible

Boughill to Derryhaun habitats

- Amenity grassland
- Bog woodland
- Buildings and artificial surfaces
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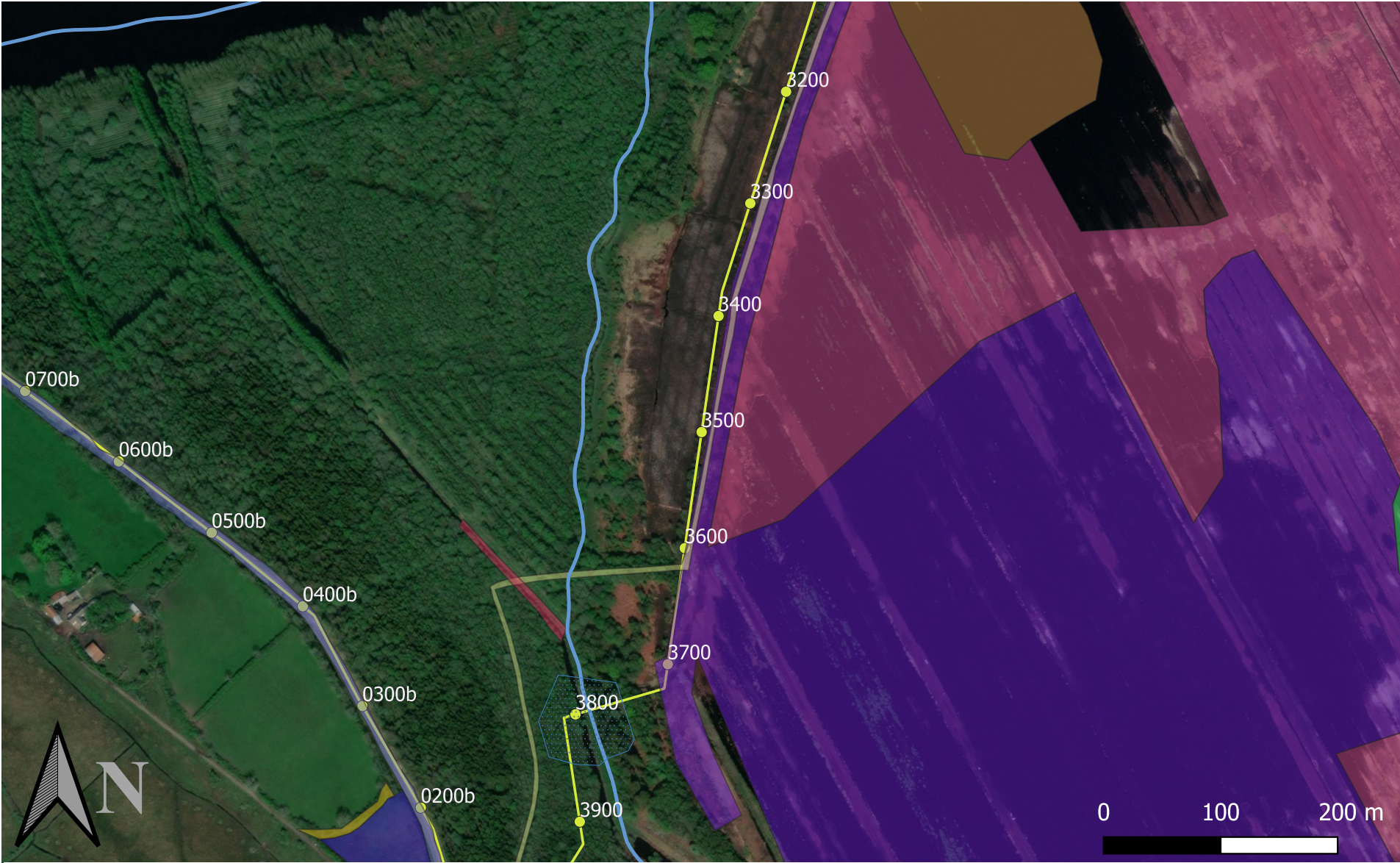
Boughill to Derryhaun

- Boughill to Derryhaun Chainage
- Water Courses

Boughill to Derryhaun habitats

- Bog woodland
- Bog woodland & wetland mosaic
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Boughill to Derryhaun

- Boughill to Derryhaun Chainage
- ▨ Ecologically Sensitive Areas
- Water Courses

Boughill to Derryhaun habitats

- Bog woodland & wetland mosaic
- Buildings and artificial surfaces
- Cutover bog/Bare peat
- Drainage ditches

- Emerging grassland and heath on cutover peat
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Boughill to Derryhaun

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- Ecologically Sensitive Areas
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Boughill to Derryhaun habitats

- Amenity grassland
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Boughill to Derryhaun

- Boughill to Derryhaun Chainage
- Ecologically Sensitive Areas
- Water Courses

Ecological Constraints

- To be retained where possible

Boughill to Derryhaun habitats

- Cutover bog/Bare peat
- Drainage ditches
- Emerging grassland and heath on cutover peat
- Emerging woodland on cutover bog
- Heath

- Hedgerows
- Recolonising bare ground/Buildings and artificial surfaces
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Boughill to Derryhaun

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- Ecologically Sensitive Areas
- Water Courses

Boughill to Derryhaun habitats

- Buildings and artificial surfaces
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Boughill to Derryhaun

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- Water Courses

Ecological Constraints

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Boughill to Derryhaun habitats

- Buildings and artificial surfaces
- Cutover bog/Bare peat
- Emerging grassland and heath on cutover peat
- Heath
- Hedgerows

- Improved agricultural grassland
- Mixed broadleaved woodland/Scrub
- Recolonising bare ground/Buildings and artificial surfaces
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Boughill to Derryhaun

- Boughill to Derryhaun Chainage
- Water Courses

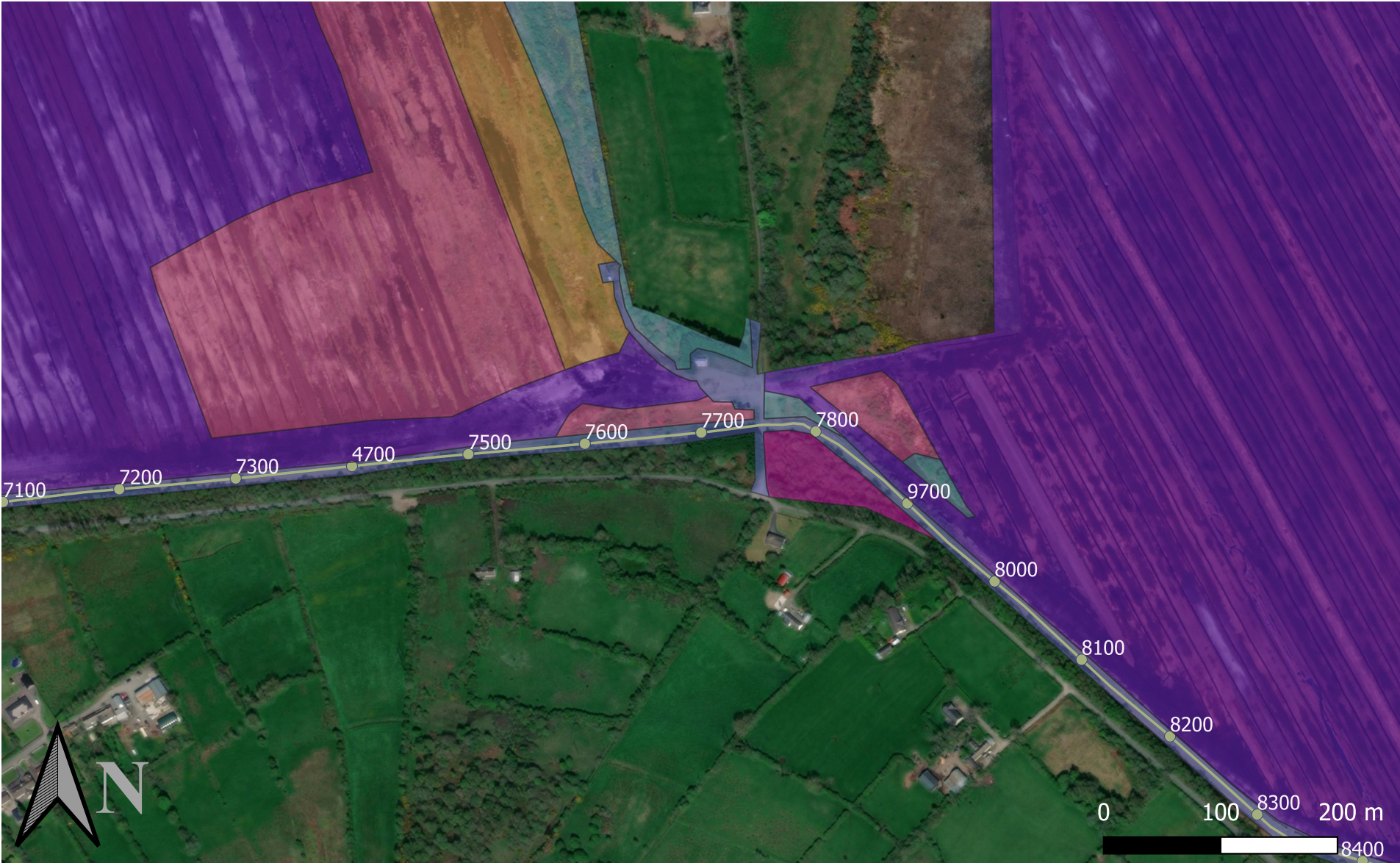
Ecological Constraints

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Boughill to Derryhaun habitats

- Bog woodland & wetland mosaic
- Buildings and artificial surfaces
- Cutover bog/Bare peat
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- Improved agricultural grassland
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Boughill to Derryhaun

● Boughill to Derryhaun Chainage

Boughill to Derryhaun habitats

■ Bog woodland & wetland mosaic

■ Conifer plantation

■ Cutover bog/Bare peat

■ Emerging grassland and heath on cutover peat

■ Recolonising bare ground/Buildings and artificial surfaces

■ Scrub



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Boughill to Derryhaun

● Boughill to Derryhaun Chainage

Ecological Constraints

● To be retained where possible

Boughill to Derryhaun habitats

■ Conifer plantation

■ Cutover bog/Bare peat

■ Emerging grassland and heath on cutover peat

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Boughill to Derryhaun

- Boughill to Derryhaun Chainage
- Ecologically Sensitive Areas
- Water Courses

Ecological Constraints

- To be retained where possible

Boughill to Derryhaun habitats

- Conifer plantation
- Cutover bog/Bare peat
- Drainage ditches
- Emerging grassland and heath on cutover peat
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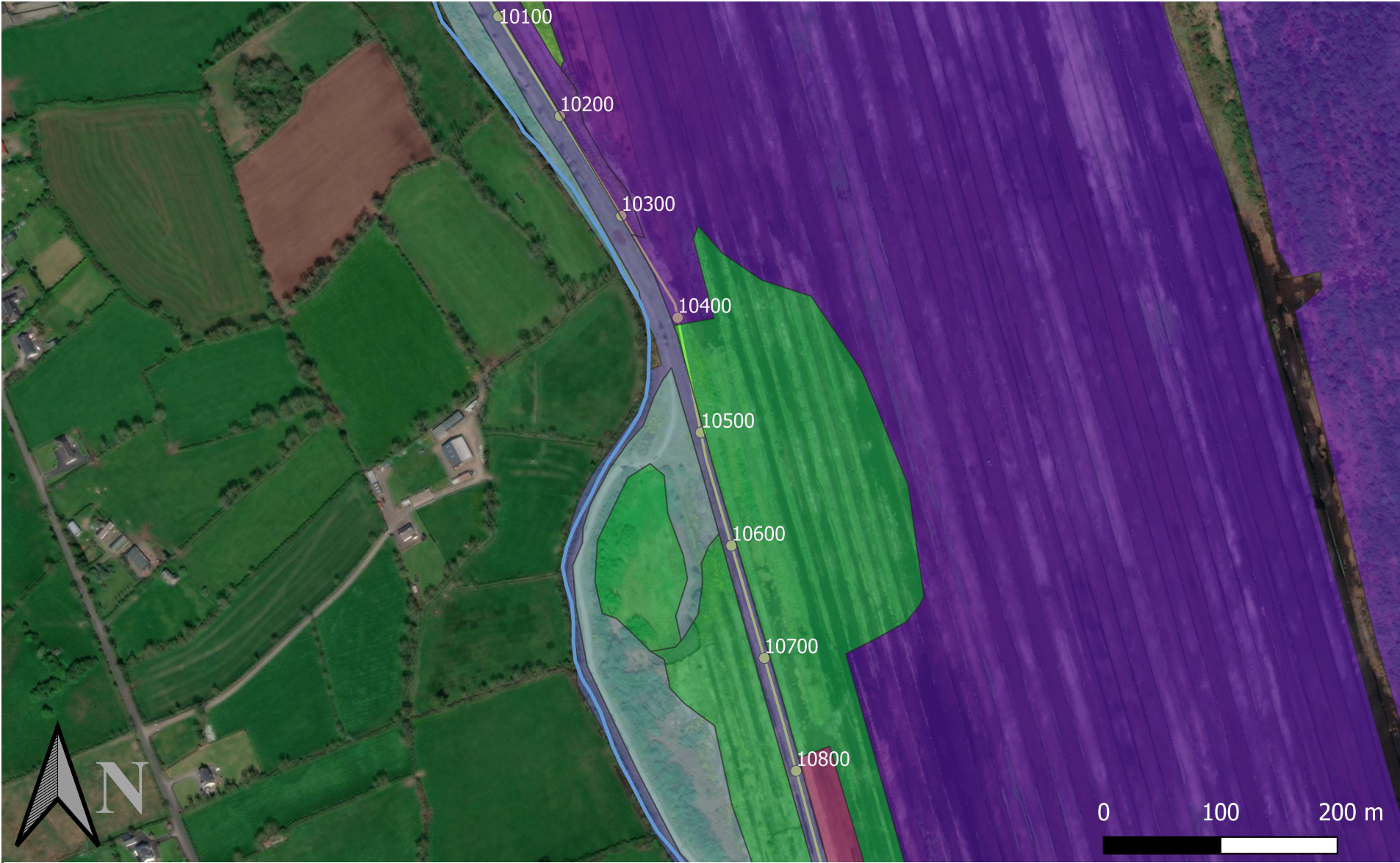
Boughill to Derryhaun

- Boughill to Derryhaun Chainage
- Ecologically Sensitive Areas
- Water Courses

Boughill to Derryhaun habitats

- Bog woodland
- Conifer plantation
- Cutover bog/Bare peat
- Drainage ditches

- Emerging grassland and heath on cutover peat
- Heath
- Mixed broadleaved woodland/Scrub
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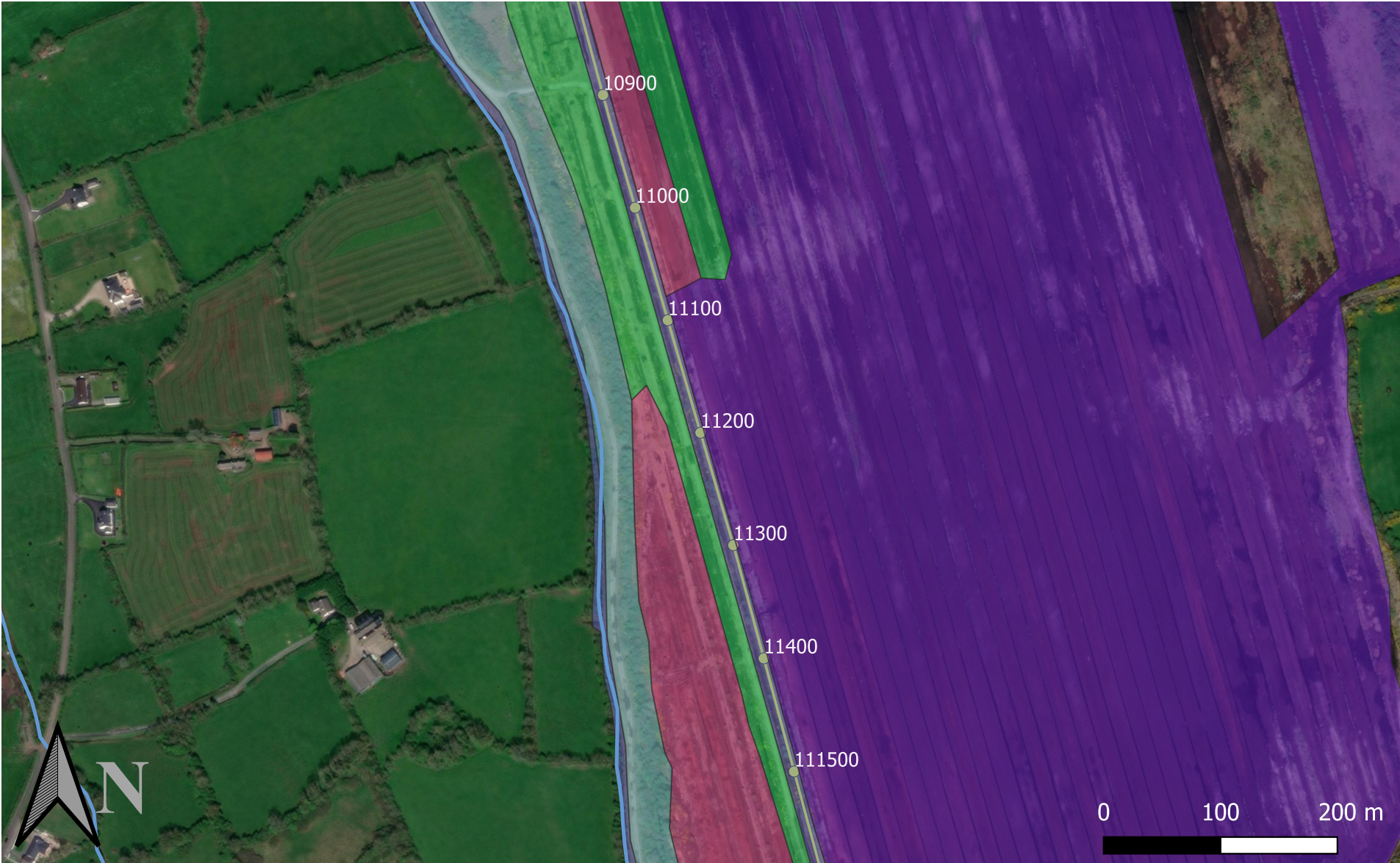
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- Boughill to Derryhaun Chainage
- Water Courses

Boughill to Derryhaun habitats

- Bog woodland
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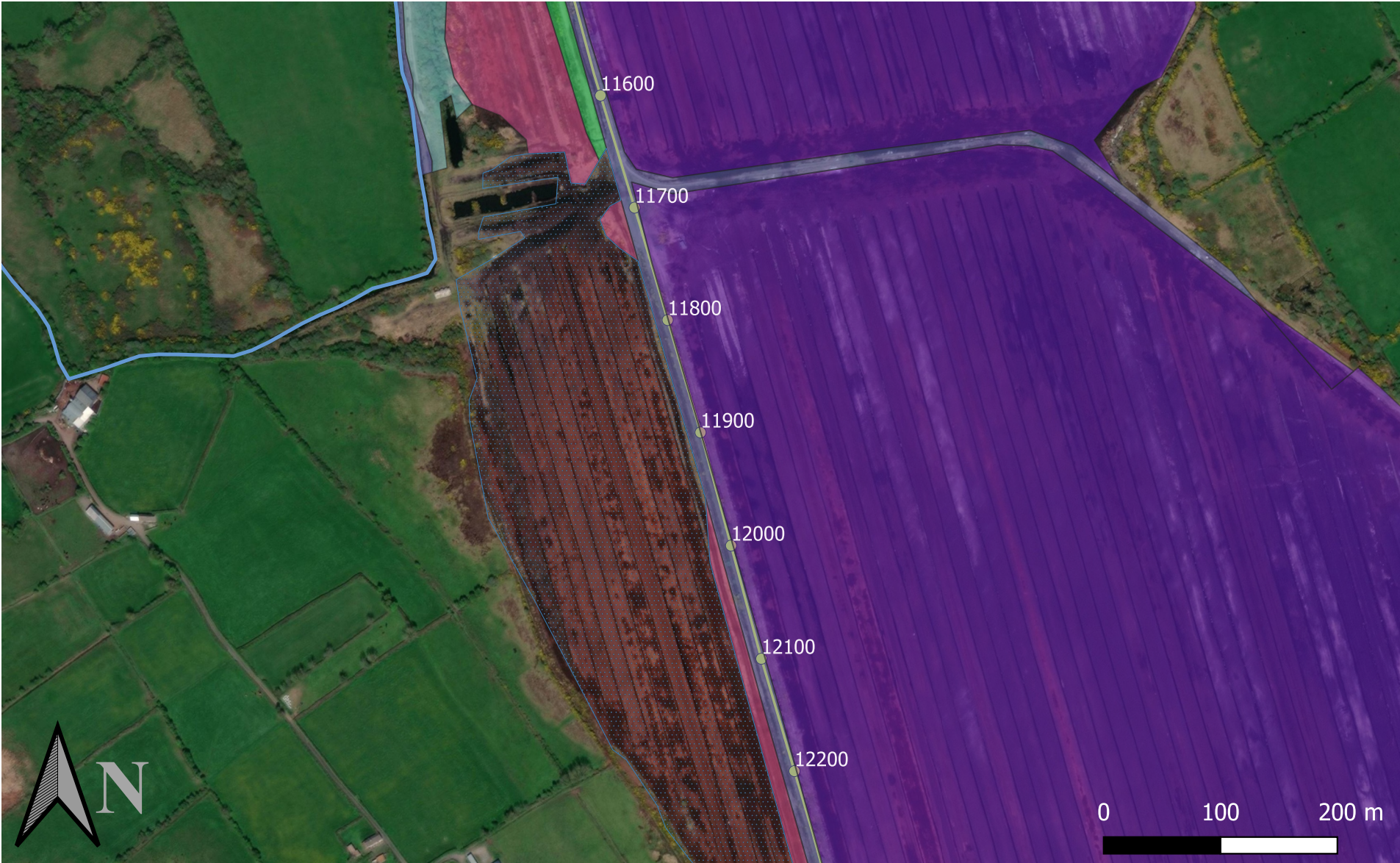
Boughill to Derryhaun

- Boughill to Derryhaun Chainage
- Water Courses

Boughill to Derryhaun habitats

- Bog woodland
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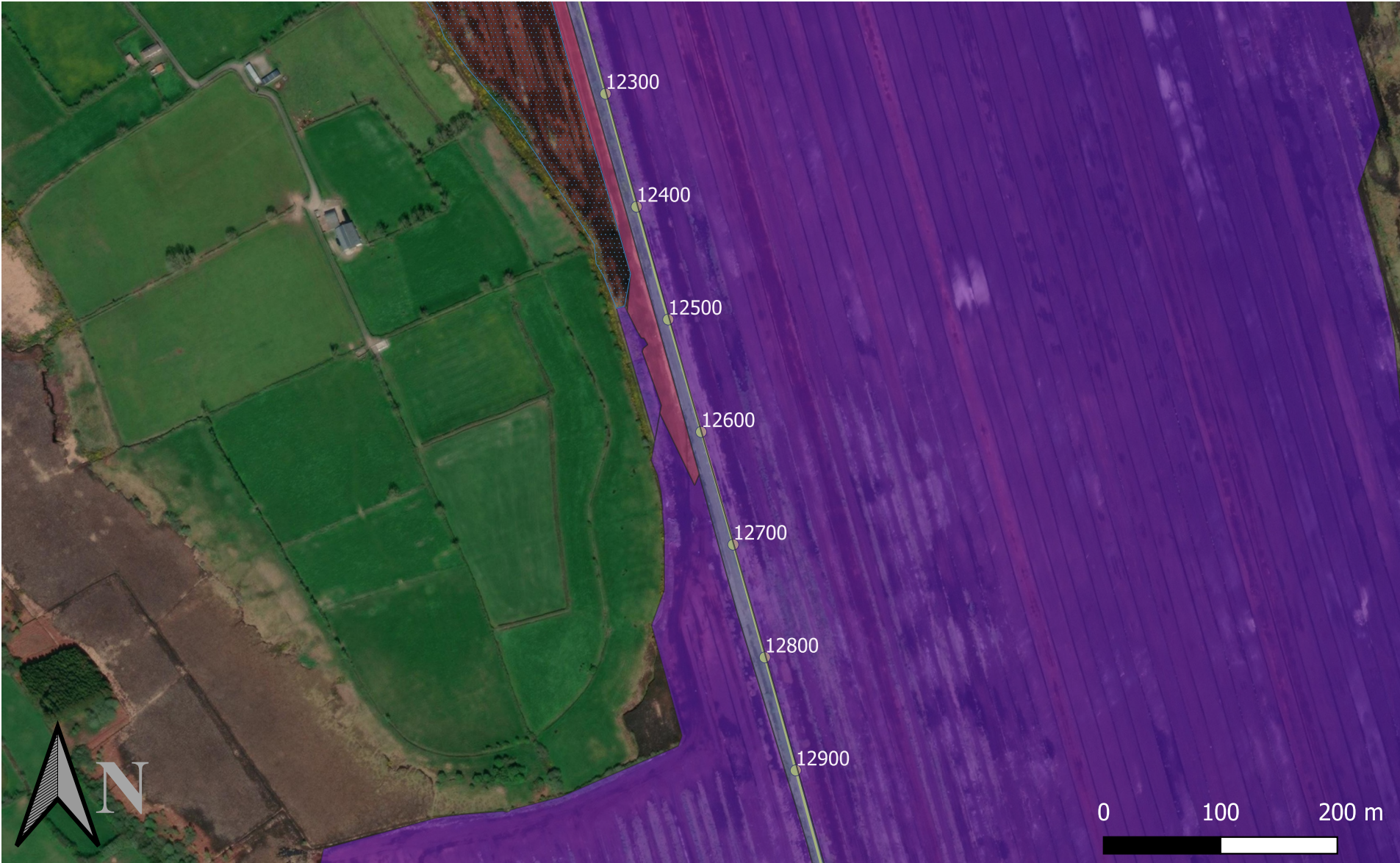
Boughill to Derryhaun

- Boughill to Derryhaun Chainage
- Ecologically Sensitive Areas
- Water Courses

Boughill to Derryhaun habitats

- Bog woodland
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Boughill to Derryhaun

- Boughill to Derryhaun Chainage
- Ecologically Sensitive Areas

Boughill to Derryhaun habitats

- Cutover bog/Bare peat
- Emerging grassland and heath on cutover peat

Recolonising bare ground/Buildings and artificial surfaces



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Boughill to Derryhaun

● Boughill to Derryhaun Chainage

Ecologically Sensitive Areas

— Water Courses

Boughill to Derryhaun habitats

Cutover bog/Bare peat

Recolonising bare ground/Buildings and artificial surfaces

Scrub



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Boughill to Derryhaun

- Boughill to Derryhaun Chainage
- Ecologically Sensitive Areas
- Water Courses

Ecological Constraints

- To be removed where possible

- To be retained where possible

Boughill to Derryhaun habitats

- Buildings and artificial surfaces
- Cutover bog/Bare peat
- Emerging grassland and heath on cutover peat
- Emerging woodland on cutover bog

- Emerging woodland on cutover bog/Scrub
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Boughill to Derryhaun

● Boughill to Derryhaun Chainage

Ecologically Sensitive Areas

Boughill to Derryhaun habitats

Bog woodland & wetland mosaic

Buildings and artificial surfaces

Cutover bog/Bare peat

Emerging grassland and heath on cutover peat

Emerging woodland on cutover bog

Emerging woodland on cutover bog/Scrub

Hedgerows

Recolonising bare ground/Buildings and artificial surfaces

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Boughill to Derryhaun

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- Ecologically Sensitive Areas
- Water Courses

Boughill to Derryhaun habitats

- Bog woodland & wetland mosaic
- Bog woodland/Scrub
- Cutover bog/Bare peat
- Drainage ditches

- Emerging grassland and heath on cutover peat
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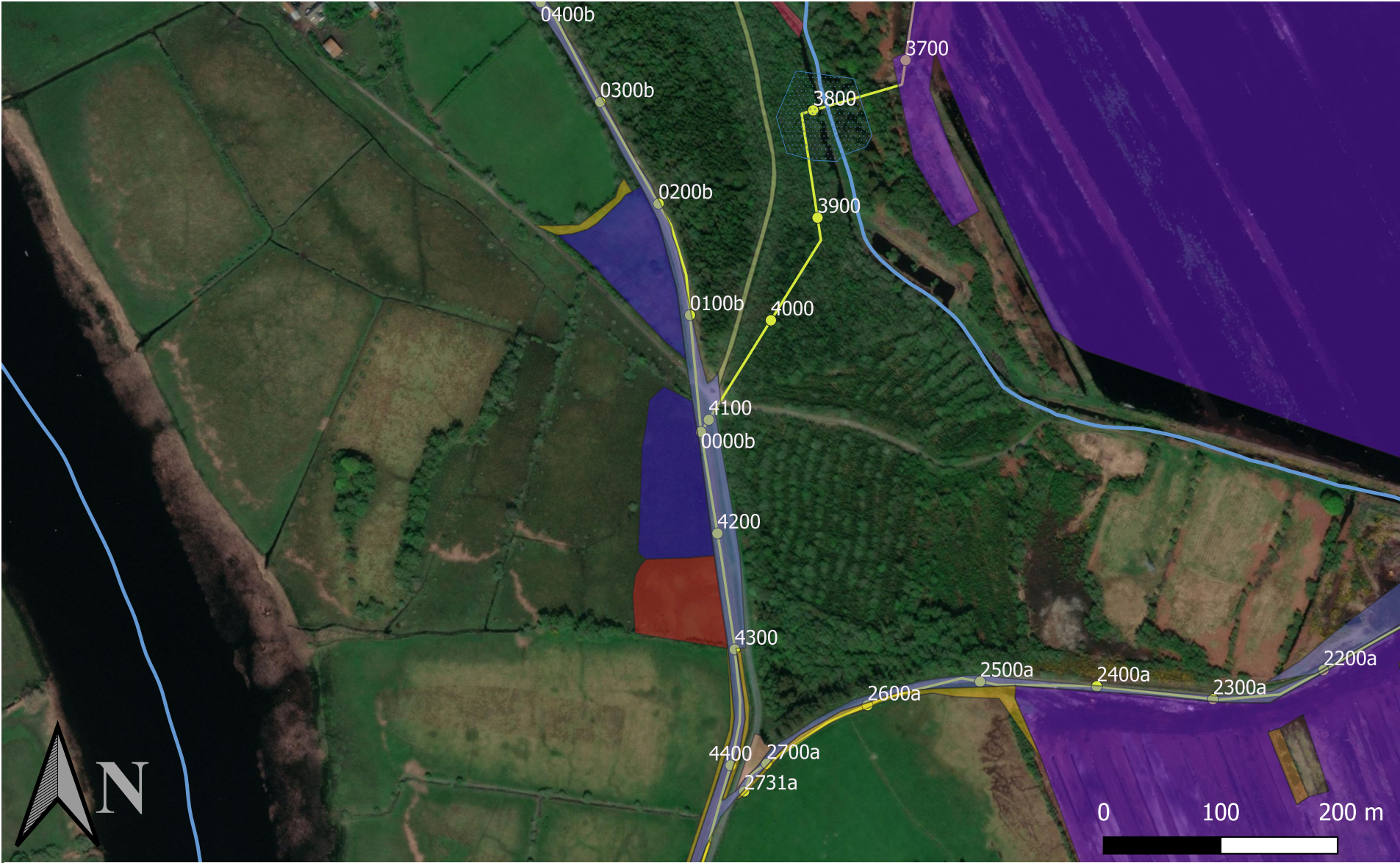
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Boughill to Derryhaun habitats

- Amenity grassland
- Bog woodland & wetland mosaic
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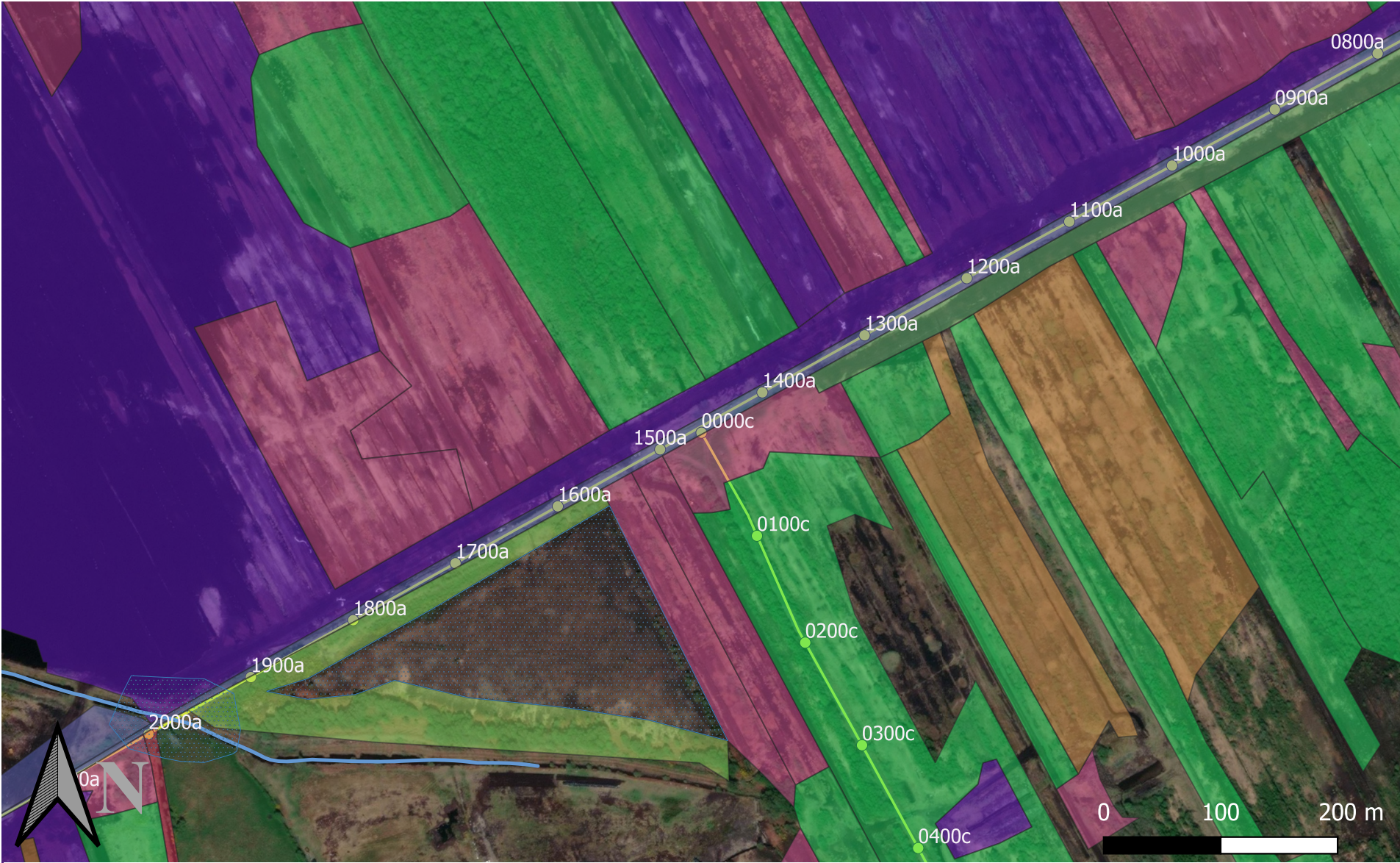
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- Water Courses

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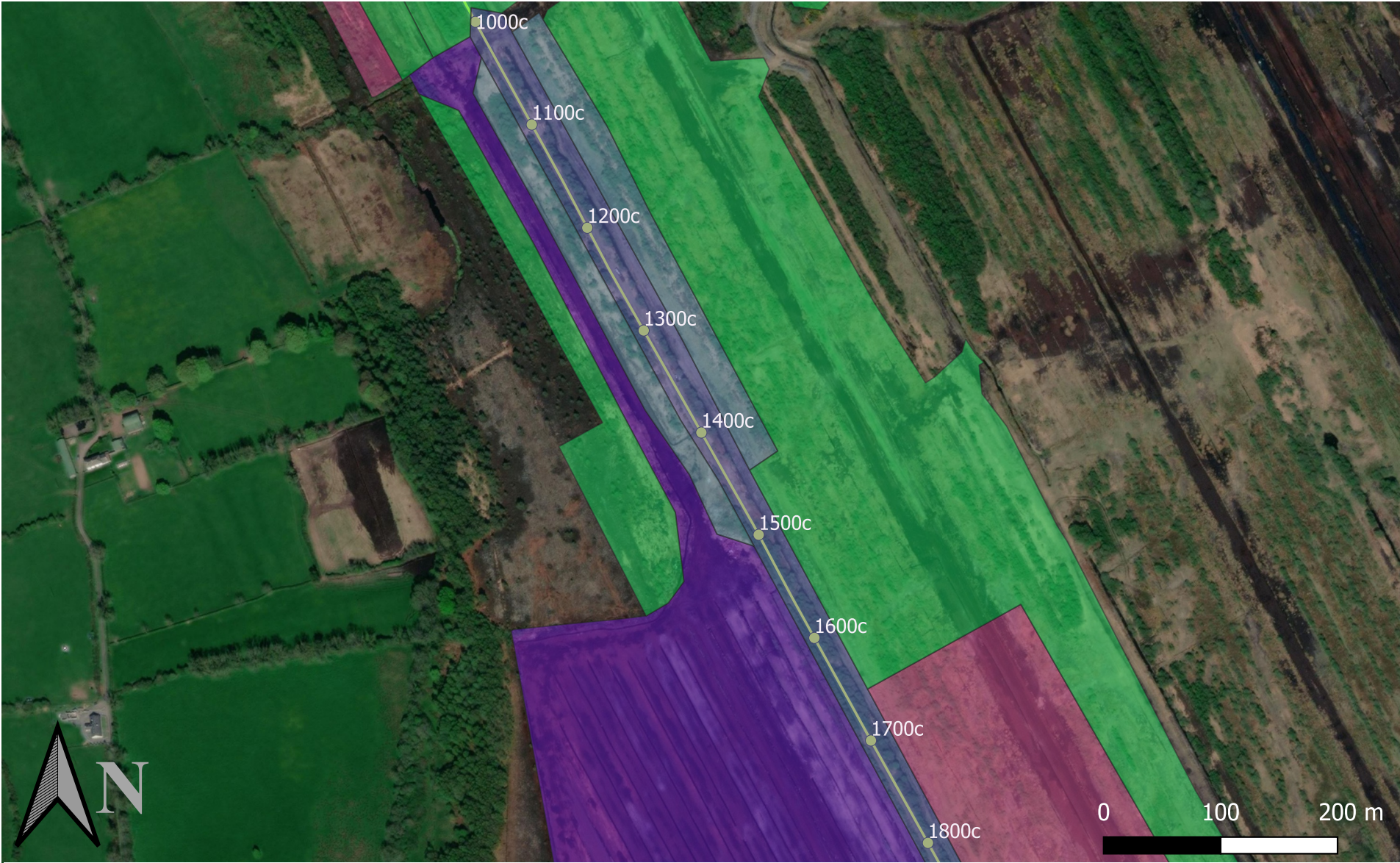
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- Ecologically Sensitive Areas
- Water Courses

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- Bog woodland/Scrub
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● Boughill to Derryhaun Chainage

Boughill to Derryhaun habitats

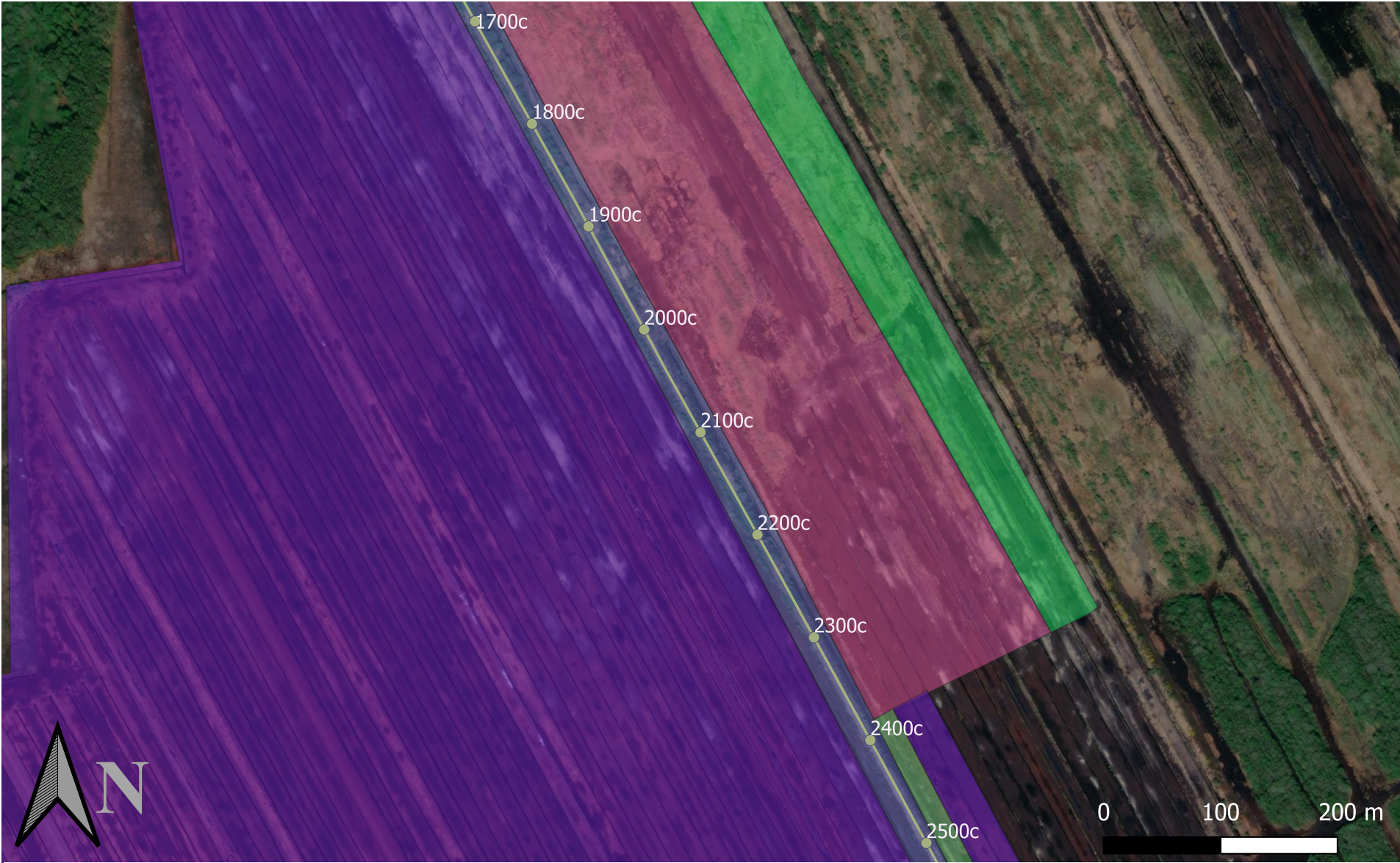
■ Cutover bog/Bare peat

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Boughill to Derryhaun habitats

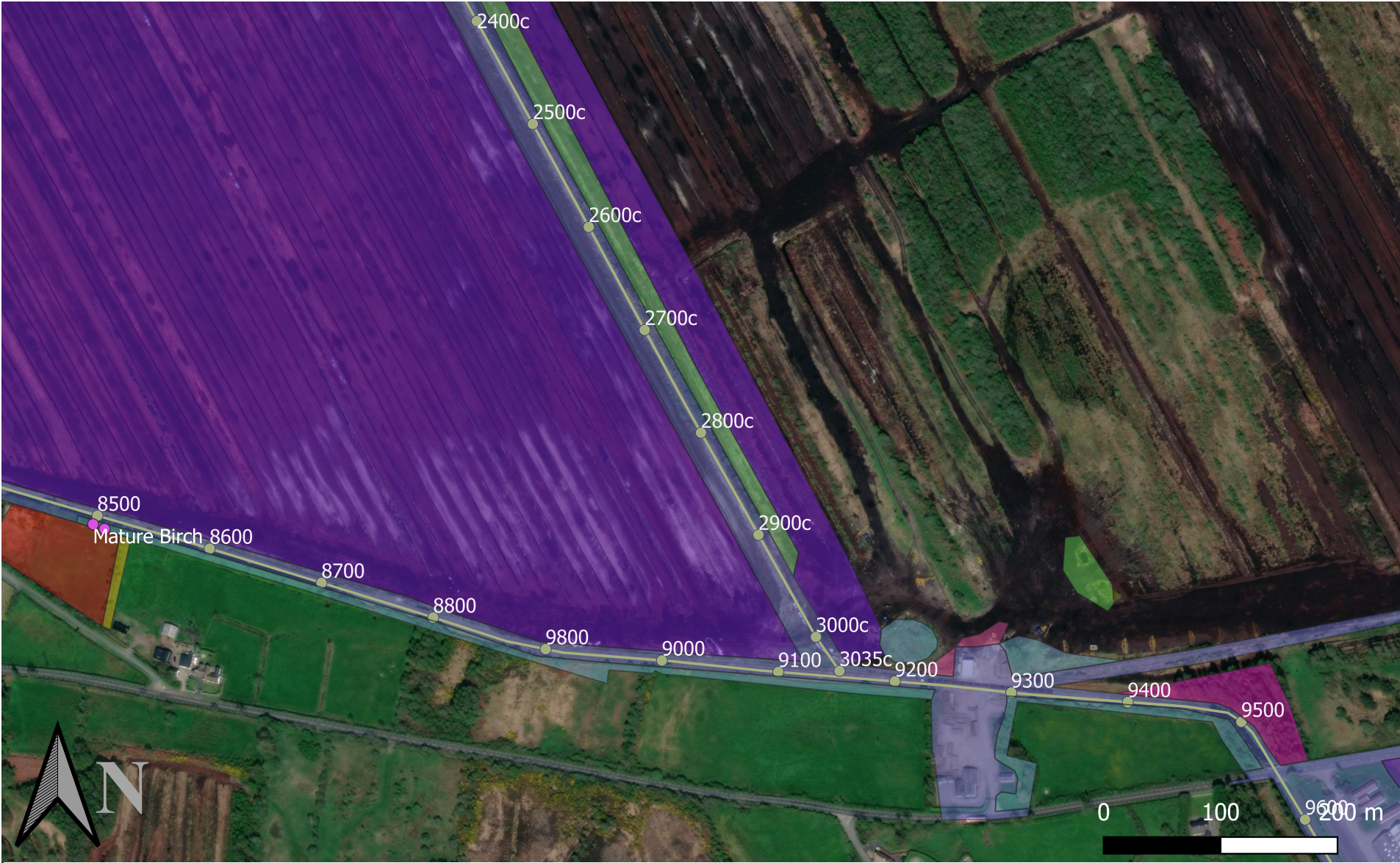
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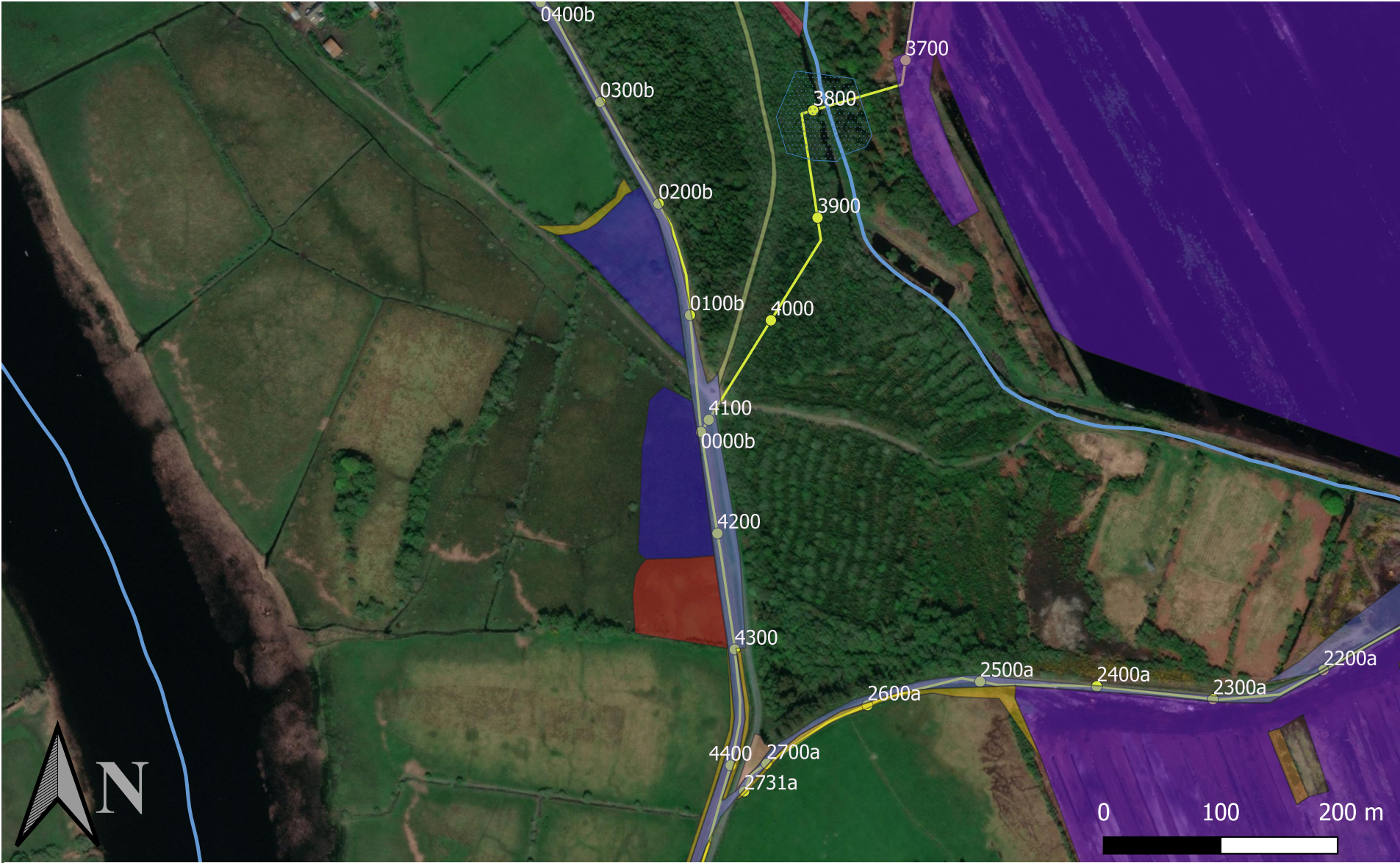
Ecological Constraints

● To be retained where possible

Boughill to Derryhaun habitats

- Conifer plantation
- Cutover bog/Bare peat
- Emerging grassland and heath on cutover peat
- Emerging woodland on cutover bog/Scrub

- Heath
- Hedgerows
- Improved agricultural grassland
- Recolonising bare ground/Buildings and artificial surfaces
- Scrub



Prepared by:
Ian Douglas

Date:
21/06/21

Job:
MSWP Greenway

Base Map:
Bing Maps Aerial 2019

Client: **Clandillon Civil Consulting**

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Boughill to Derryhaun

- Boughill to Derryhaun Chainage
- Ecologically Sensitive Areas
- Water Courses

Boughill to Derryhaun habitats

- Amenity grassland
- Bog woodland & wetland mosaic
- Buildings and artificial surfaces
- Cutover bog/Bare peat

- Drainage ditches
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Boughill to Derryhaun

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Ecological Constraints

- To be retained where possible

Boughill to Derryhaun habitats

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Overview of Chainage Sections

Boughill to Derryhaun

CLIENT: Clandillon Civil Consulting

Legend

— Proposed Route

▭ Boughill to Derryhaun Sections



Prepared by: Ian Douglas

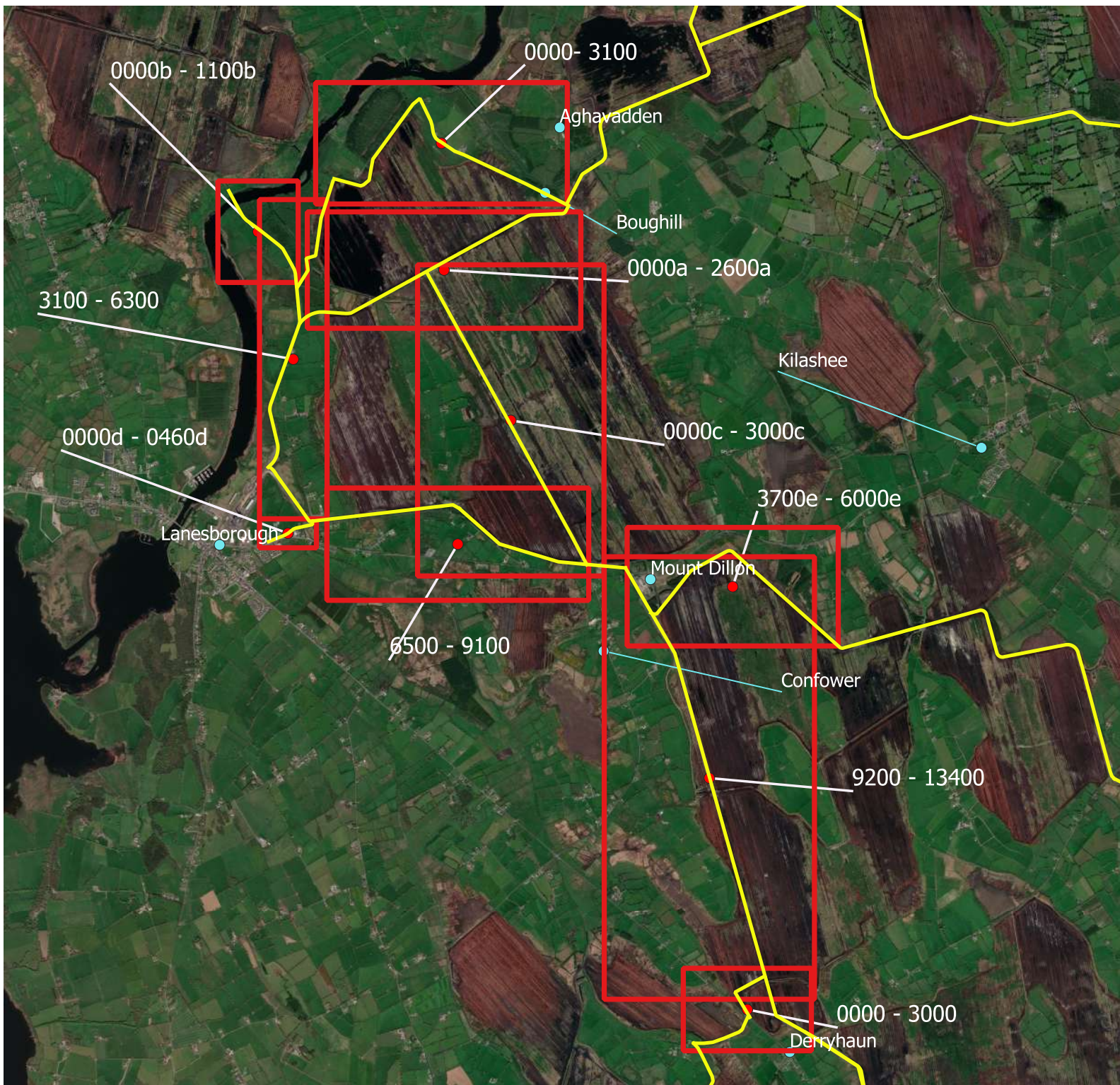
Date: 24/06/2021

Version number: 2

Job Reference: Longford Greenway

Base Map: Bing Aerial 2019

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Ecological Constraints

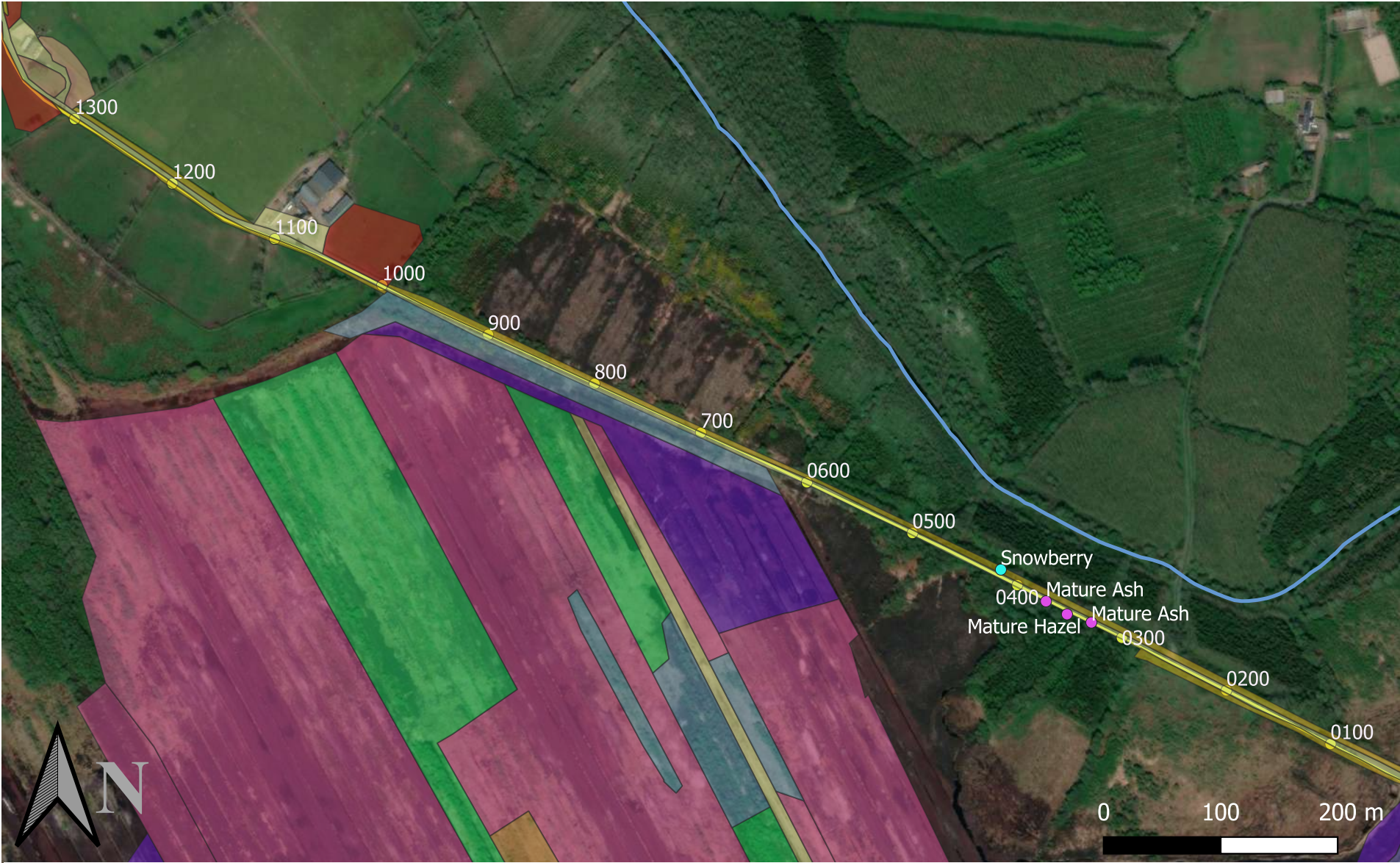
- To be removed where possible

- To be retained where possible

Boughill to Derryhaun habitats

- Buildings and artificial surfaces
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Ecological Constraints

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Boughill to Derryhaun habitats

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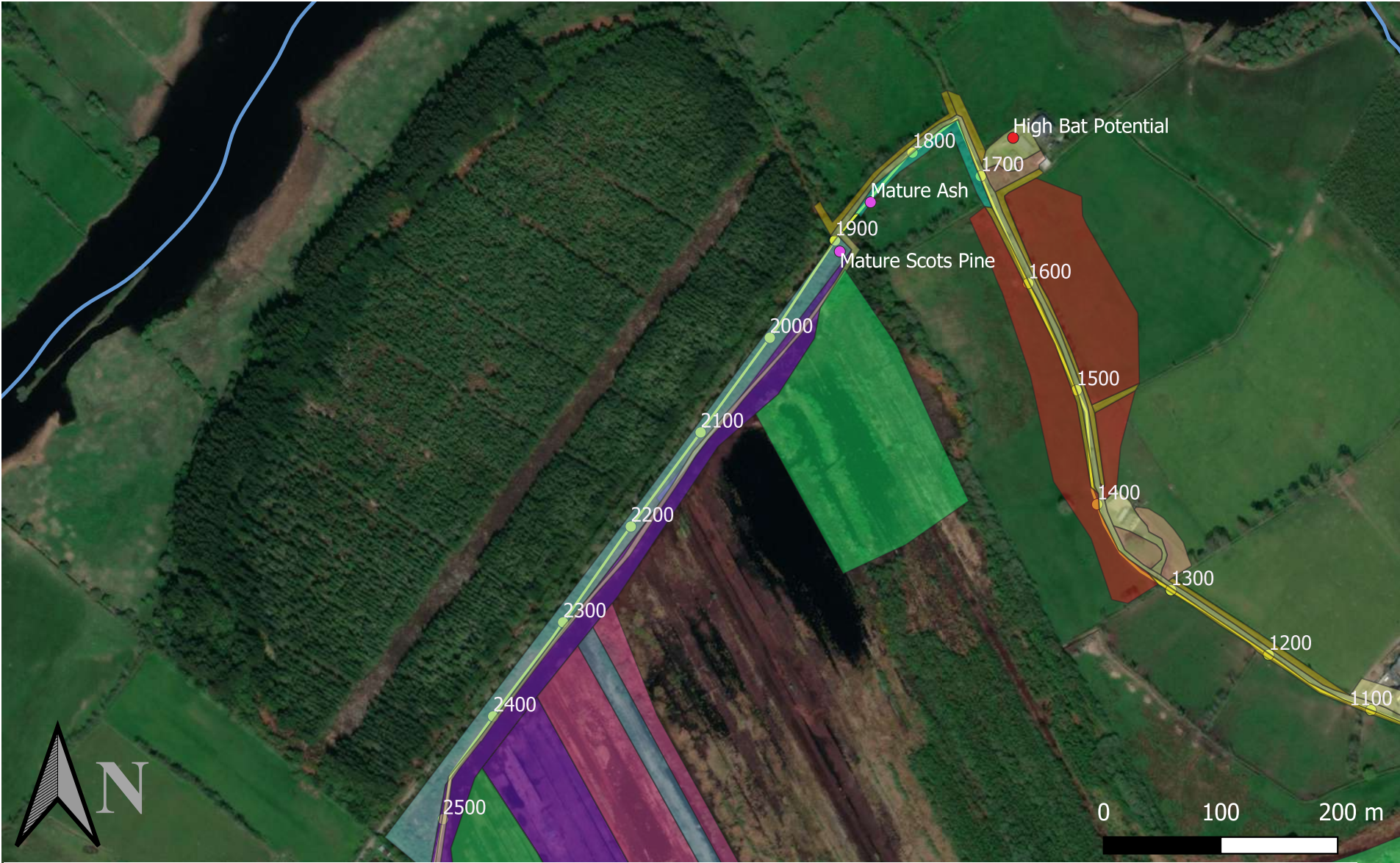
Ecological Constraints

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Boughill to Derryhaun habitats

- Amenity grassland
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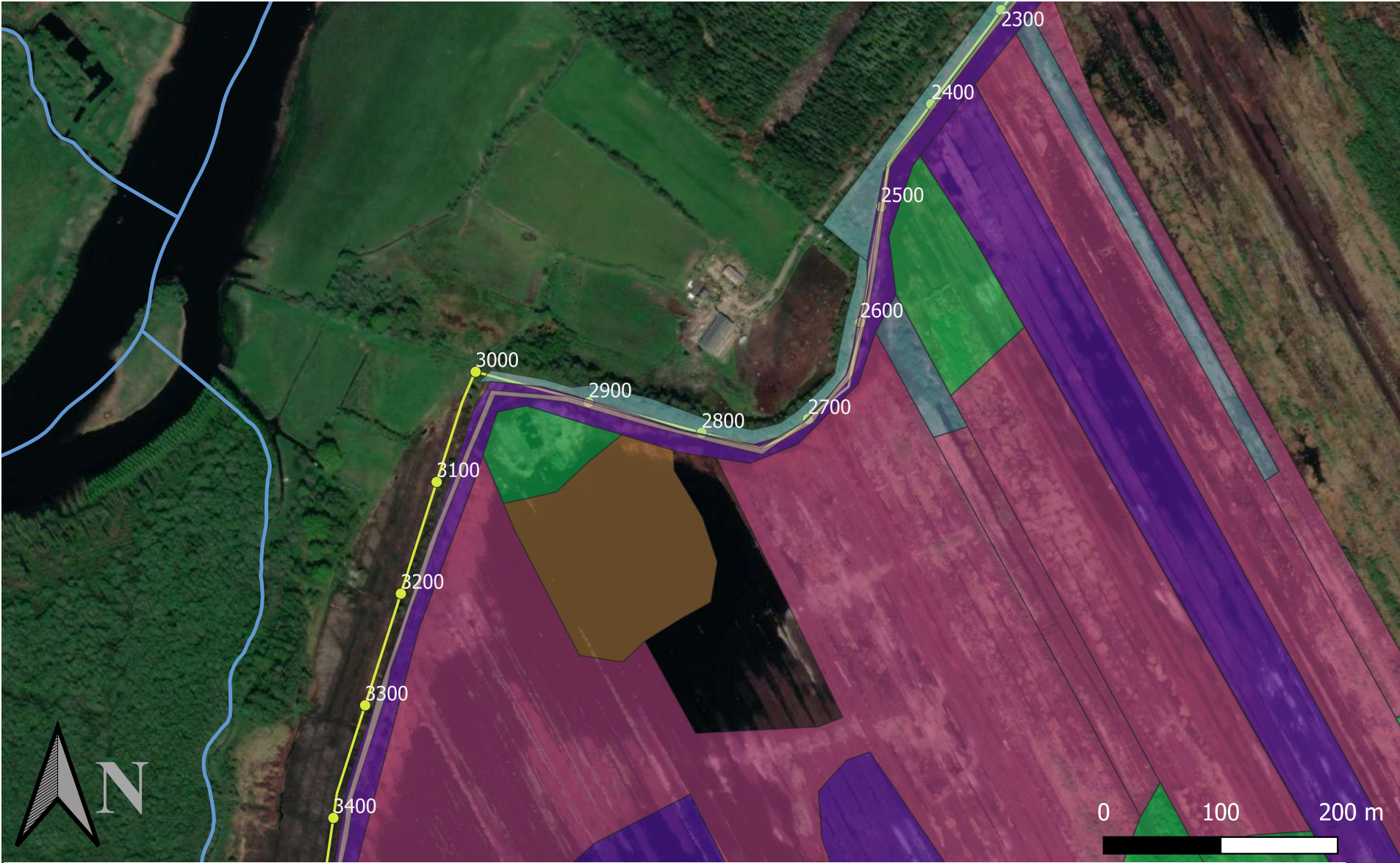
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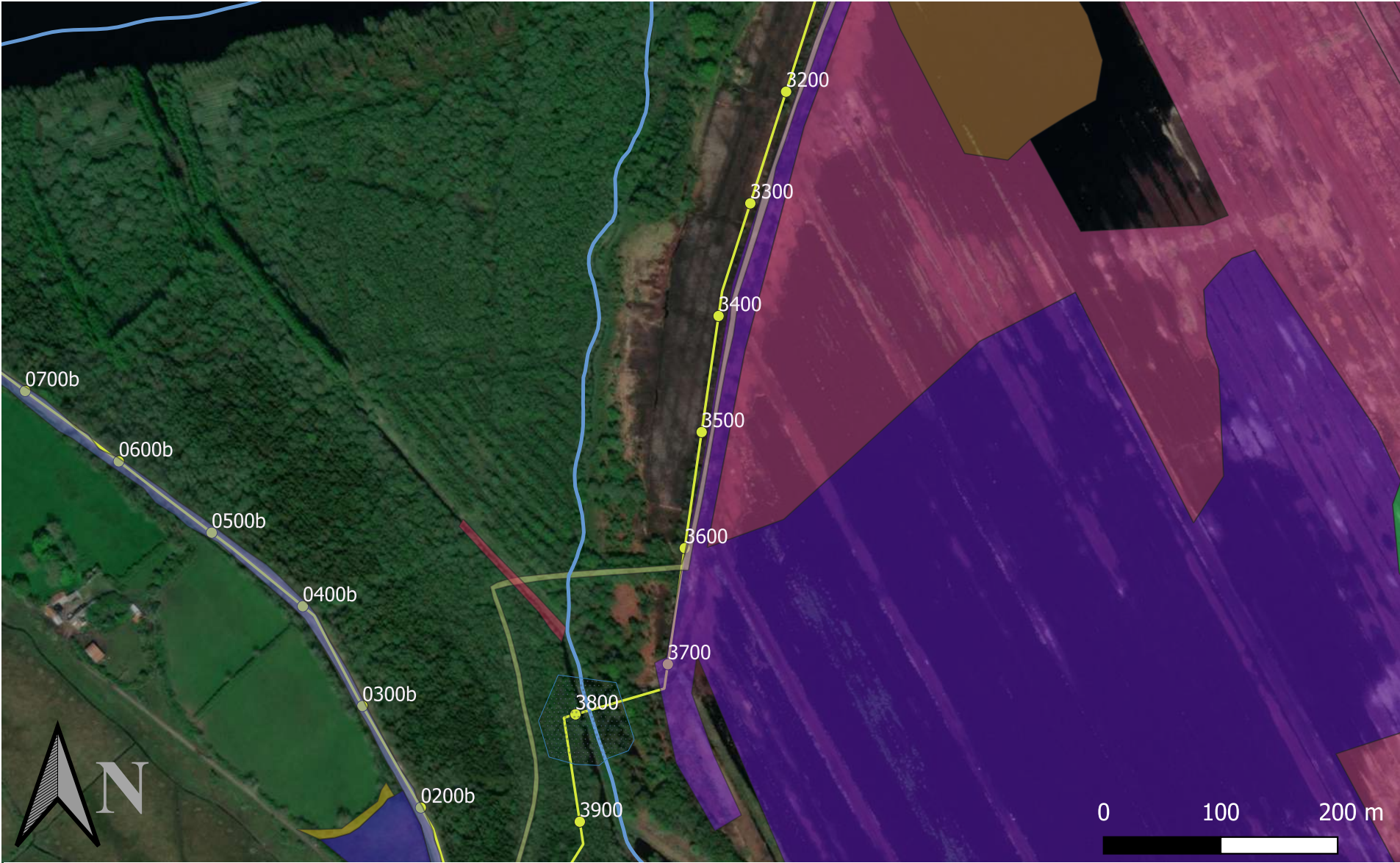
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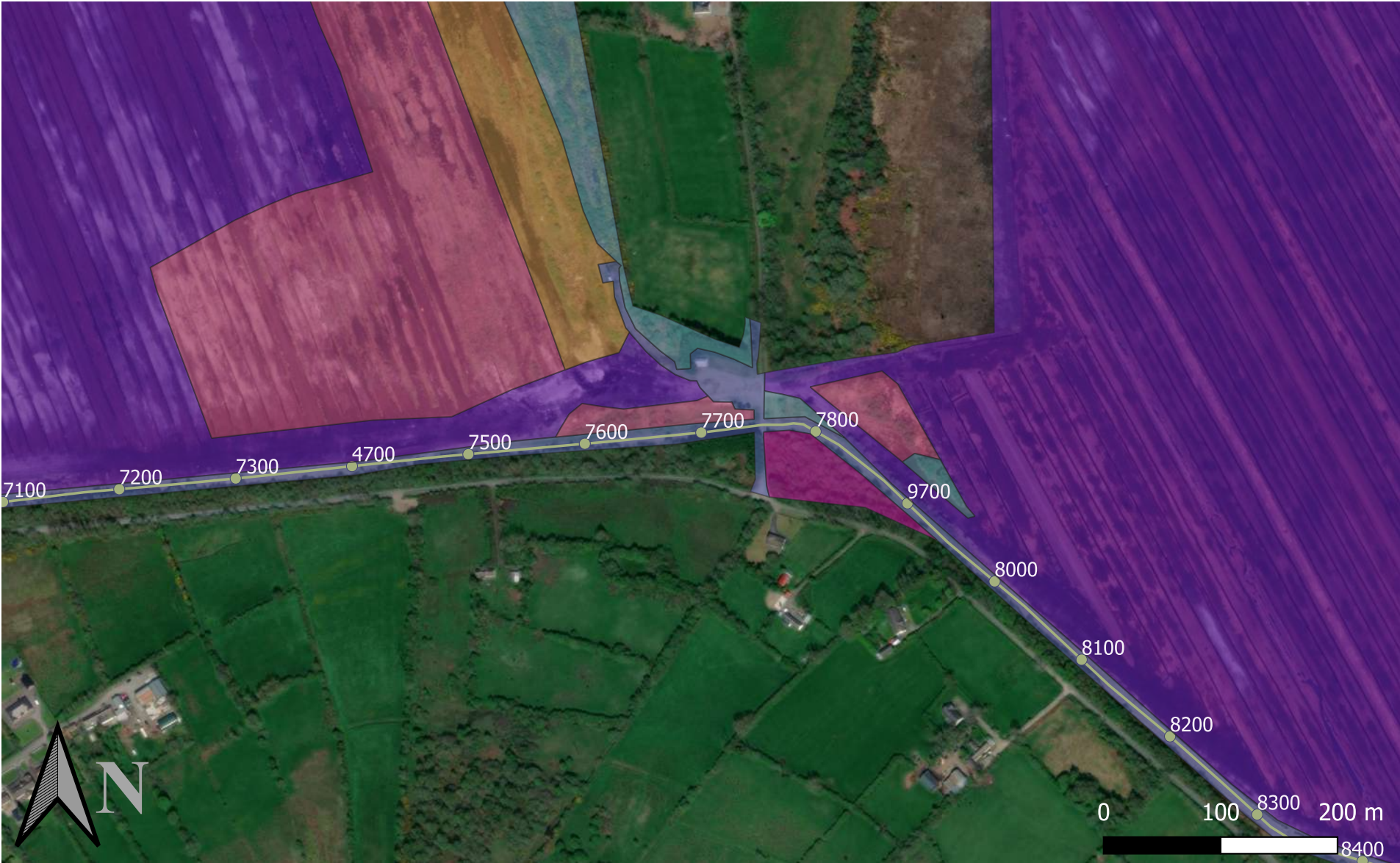
Ecological Constraints

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Boughill to Derryhaun habitats

- Bog woodland & wetland mosaic
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Boughill to Derryhaun

● Boughill to Derryhaun Chainage

Boughill to Derryhaun habitats

■ Bog woodland & wetland mosaic

■ Conifer plantation

■ Cutover bog/Bare peat

■ Emerging grassland and heath on cutover peat

■ Recolonising bare ground/Buildings and artificial surfaces

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Ecological Constraints

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Boughill to Derryhaun habitats

■ Conifer plantation

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Ecological Constraints

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Boughill to Derryhaun habitats

- Conifer plantation
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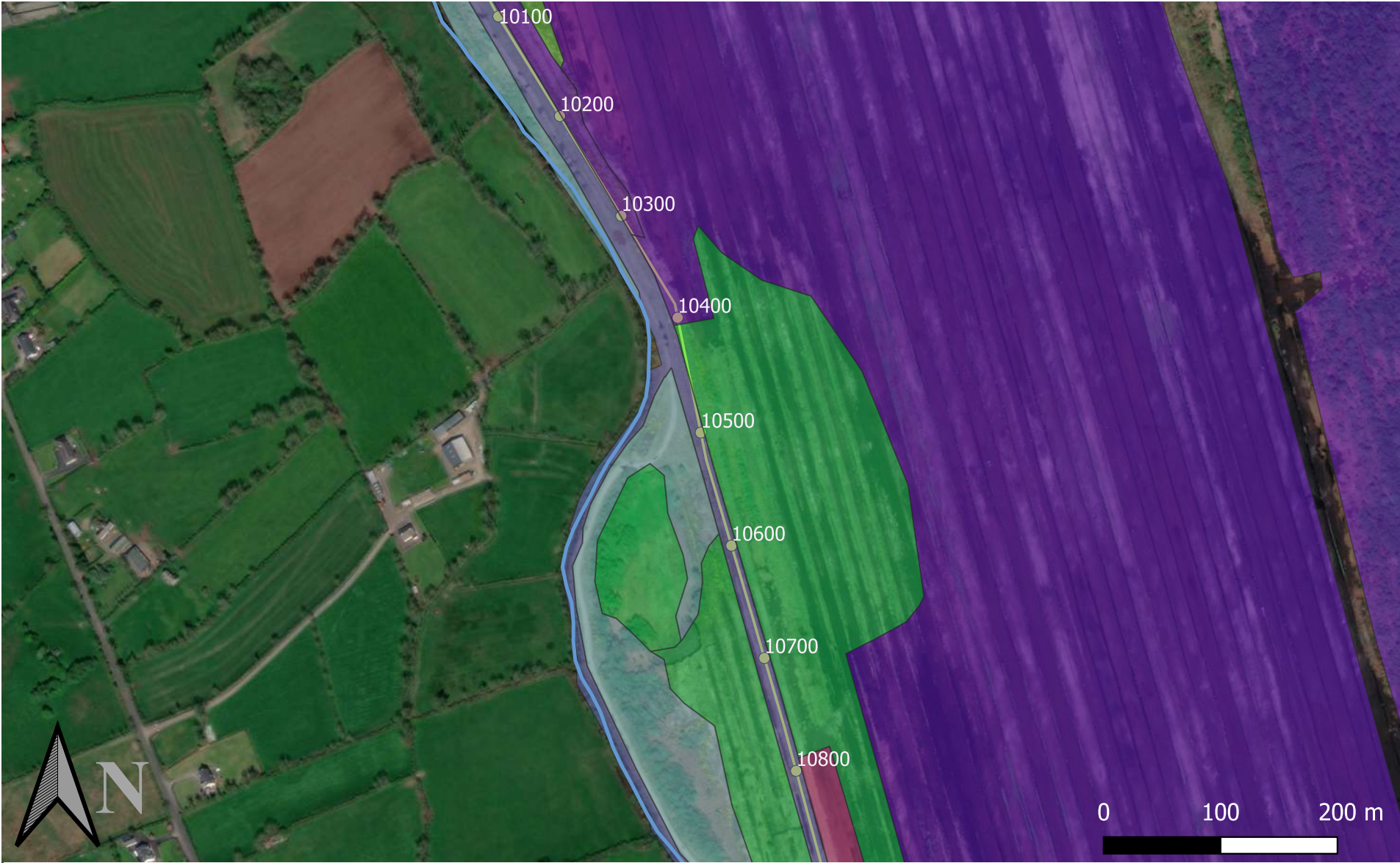
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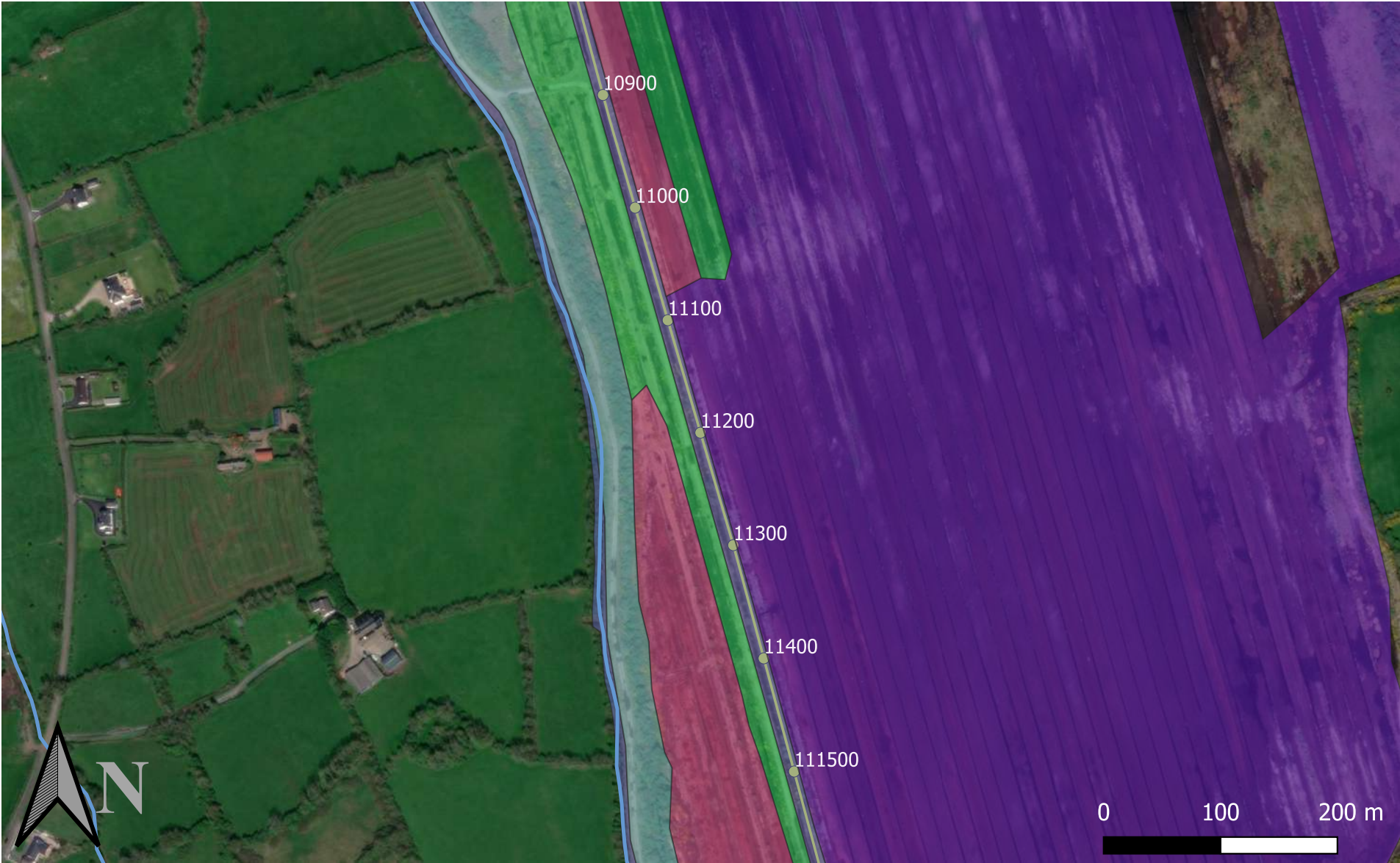
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Ecologically Sensitive Areas

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Ecological Constraints

- To be removed where possible

- To be retained where possible

Boughill to Derryhaun habitats

- Buildings and artificial surfaces
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Ecologically Sensitive Areas

Boughill to Derryhaun habitats

Bog woodland & wetland mosaic

Buildings and artificial surfaces

Cutover bog/Bare peat

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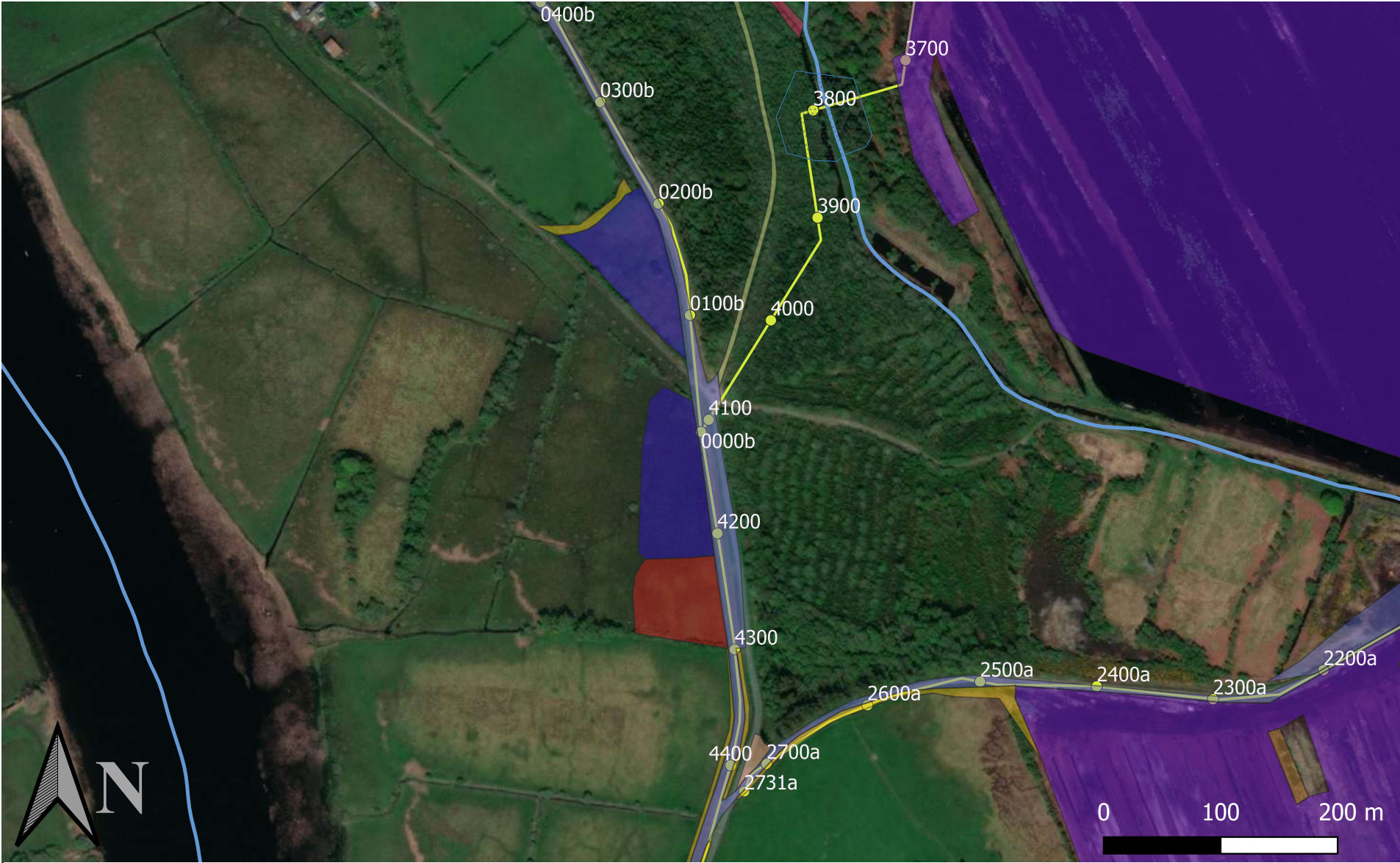
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- | | | |
|--|--|----------------------------------|
| Amenity grassland | Bog woodland & wetland mosaic | Emerging woodland on cutover bog |
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- Cutover bog/Bare peat
- Drainage ditches

- Emerging grassland and heath on cutover peat
- Emerging woodland on cutover bog
- Emerging woodland on cutover bog/Scrub
- Recolonising bare ground/Buildings and artificial surfaces



Prepared by:
Ian Douglas

Date:
21/06/21

Job:
MSWP Greenway

Base Map:
Bing Maps Aerial
2019

Client: Clandillon
Civil Consulting

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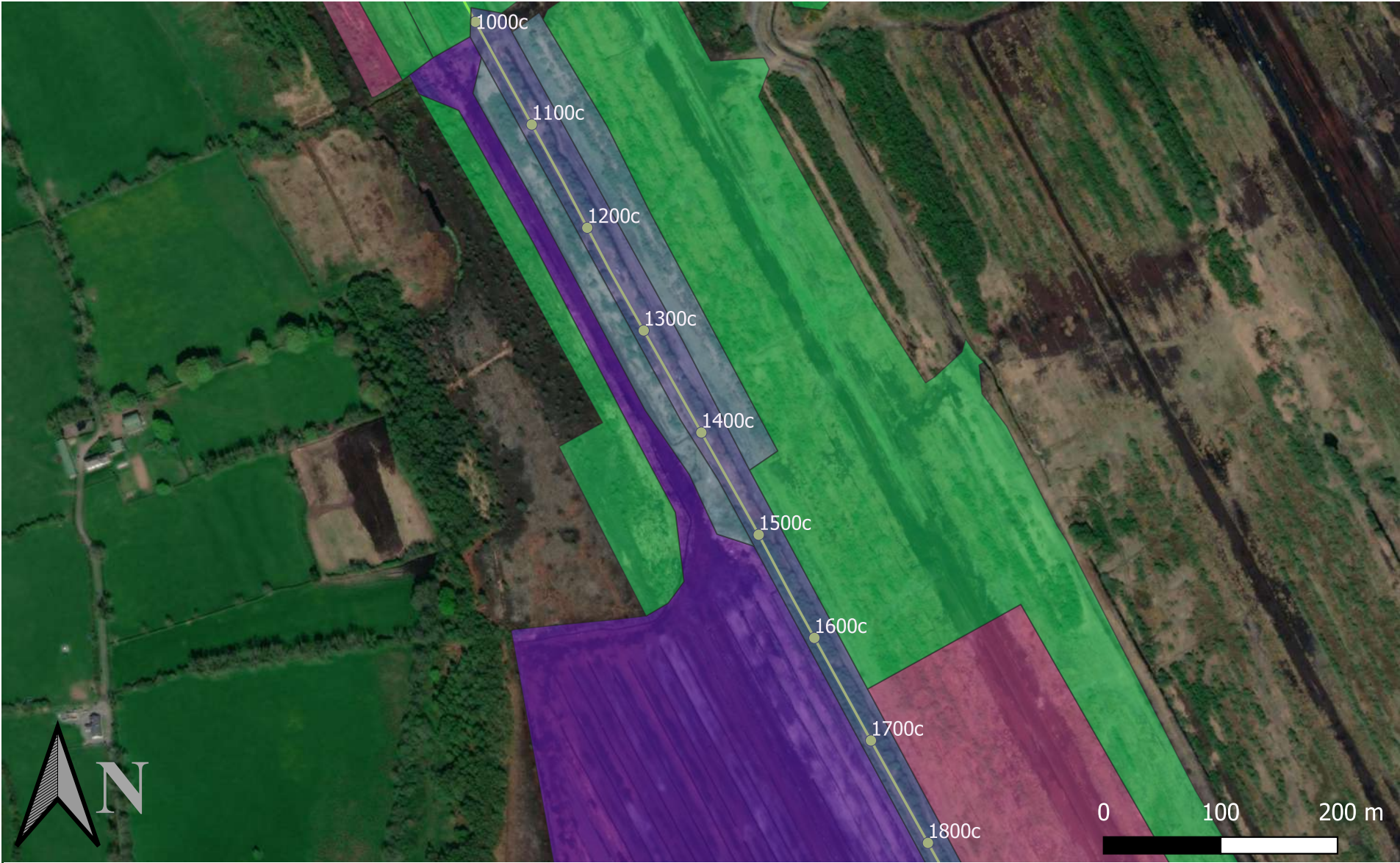
Boughill to Derryhaun

- Boughill to Derryhaun Chainage
- Ecologically Sensitive Areas
- Water Courses

Boughill to Derryhaun habitats

- Bog woodland & wetland mosaic
- Bog woodland/Scrub
- Cutover bog/Bare peat

- Emerging grassland and heath on cutover peat
- Emerging woodland on cutover bog
- Recolonising bare ground/Buildings and artificial surfaces
- Scrub



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Boughill to Derryhaun

● Boughill to Derryhaun Chainage

Boughill to Derryhaun habitats

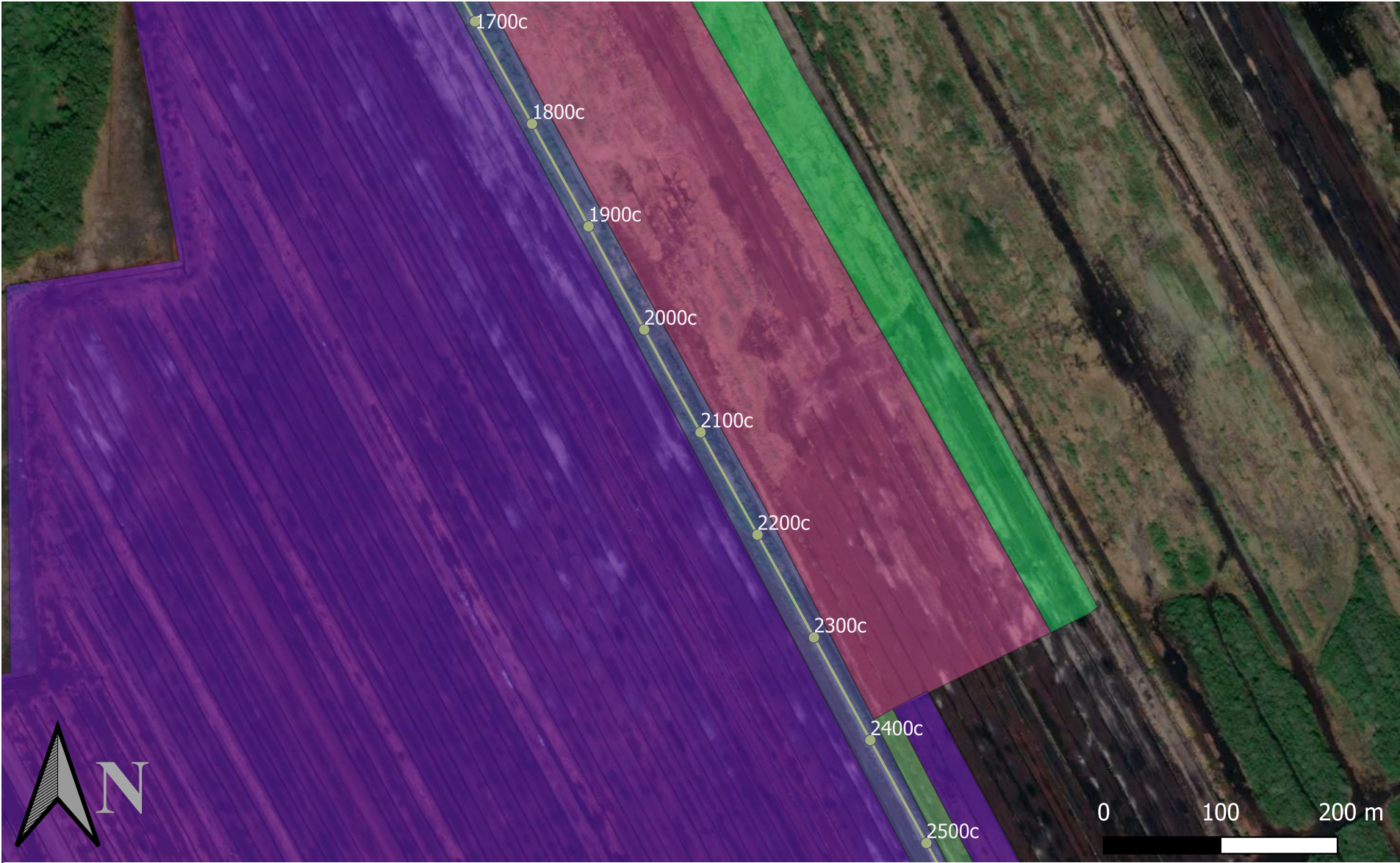
■ Cutover bog/Bare peat

■ Emerging grassland and heath on cutover peat

■ Emerging woodland on cutover bog

■ Recolonising bare ground/Buildings and artificial surfaces

■ Scrub



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Boughill to Derryhaun

● Boughill to Derryhaun Chainage

Boughill to Derryhaun habitats

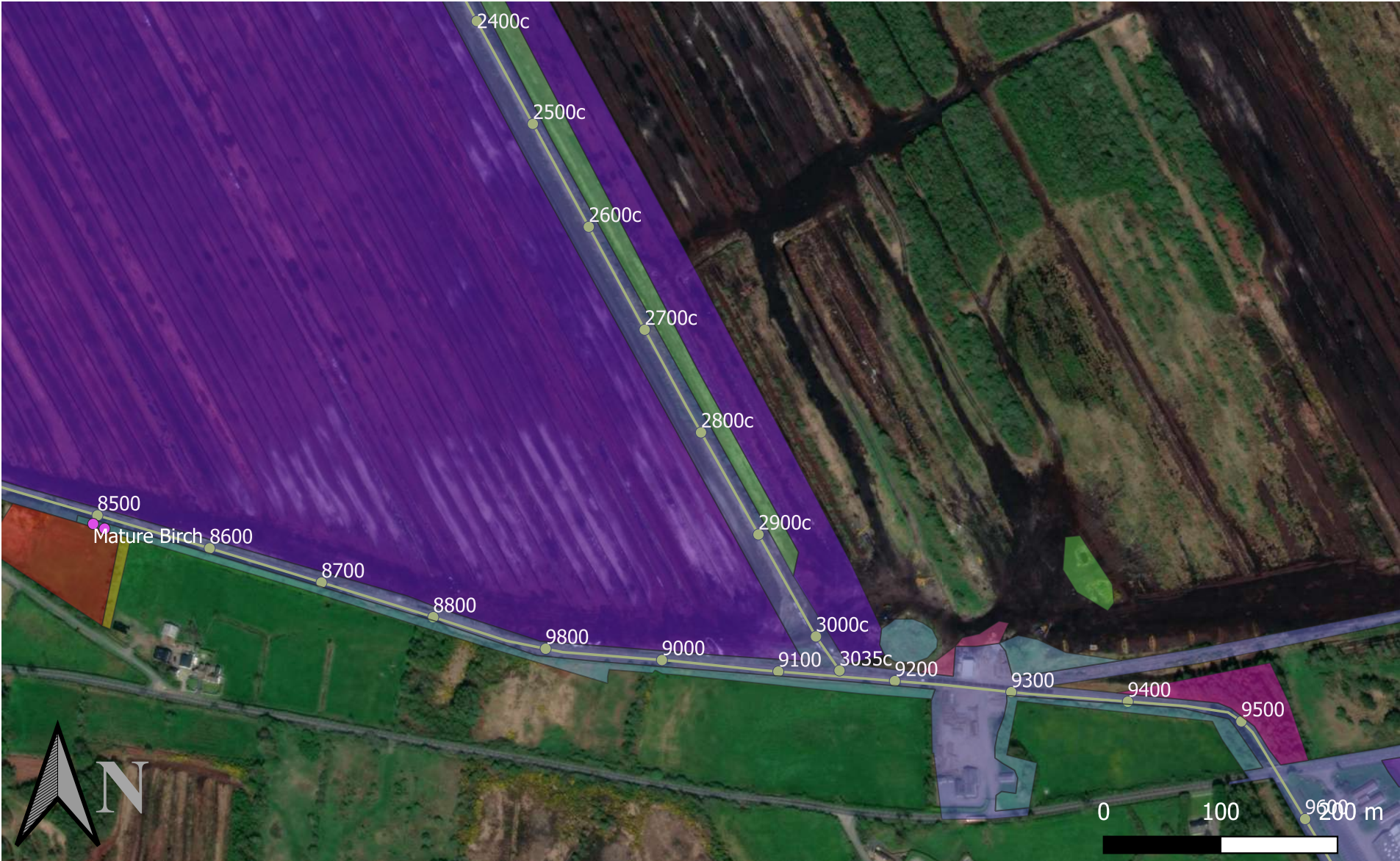
■ Cutover bog/Bare peat

■ Emerging grassland and heath on cutover peat

■ Emerging woodland on cutover bog

■ Emerging woodland on cutover bog/Scrub

■ Recolonising bare ground/Buildings and artificial surfaces



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Boughill to Derryhaun

● Boughill to Derryhaun Chainage

Ecological Constraints

● To be retained where possible

Boughill to Derryhaun habitats

■ Conifer plantation

■ Cutover bog/Bare peat

■ Emerging grassland and heath on cutover peat

■ Emerging woodland on cutover bog/Scrub

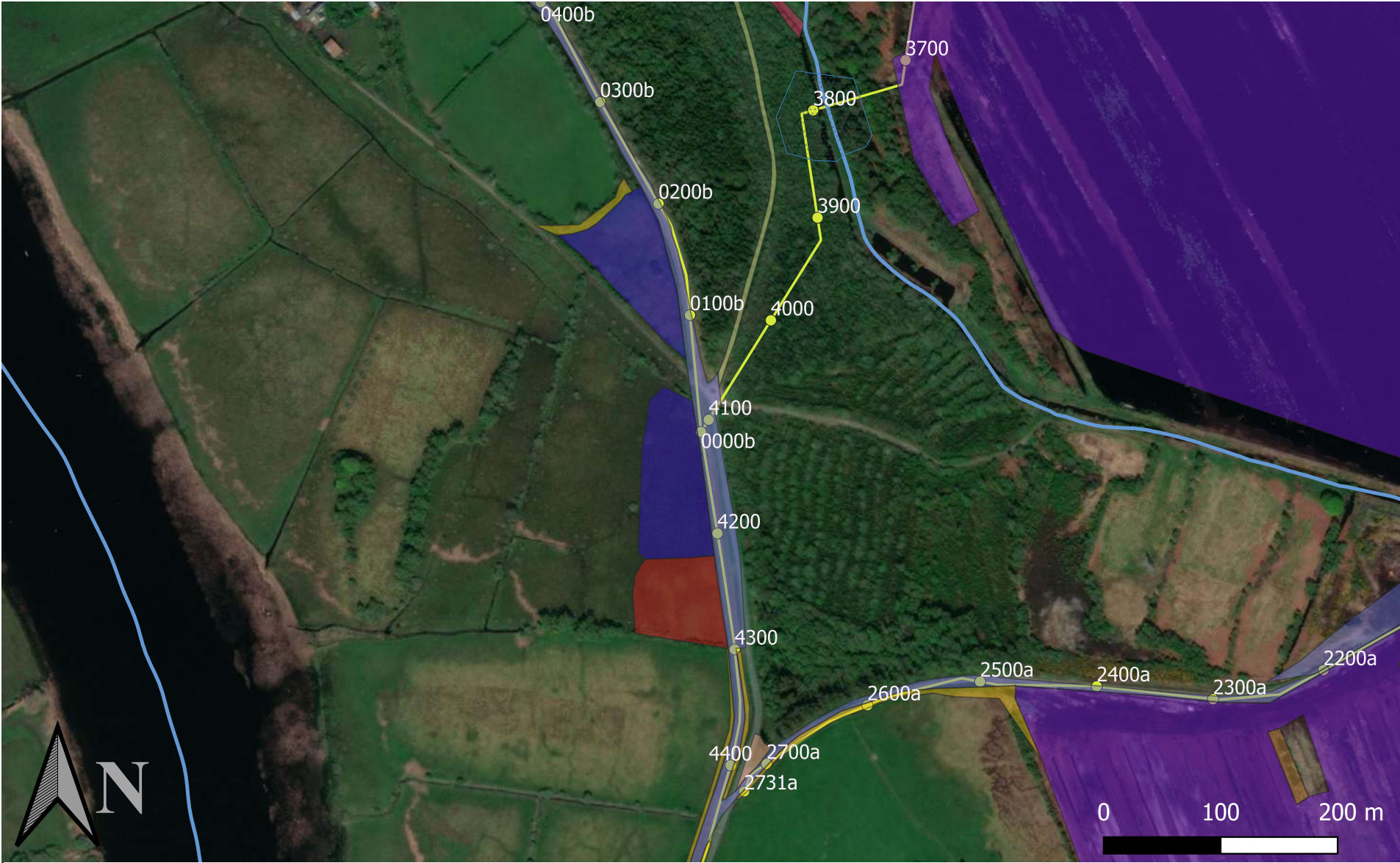
■ Heath

■ Hedgerows

■ Improved agricultural grassland

■ Re-colonising bare ground/Buildings and artificial surfaces

■ Scrub



Prepared by:
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Date:
21/06/21

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Boughill to Derryhaun

- Boughill to Derryhaun Chainage
- Ecologically Sensitive Areas
- Water Courses

Boughill to Derryhaun habitats

- Amenity grassland
- Bog woodland & wetland mosaic
- Buildings and artificial surfaces
- Cutover bog/Bare peat

- Drainage ditches
- Hedgerows
- Improved agricultural grassland
- Recolonising bare ground/Buildings and artificial surfaces
- Wet grassland



Prepared by:
Ian Douglas

Date:
21/06/21

Job:
MSWP Greenway

Base Map:
Bing Maps Aerial 2019

Client: Clandillon Civil Consulting

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Boughill to Derryhaun

- Boughill to Derryhaun Chainage
- Ecologically Sensitive Areas
- Water Courses

Boughill to Derryhaun habitats

- Buildings and artificial surfaces
- Cutover bog/Bare peat
- Drainage ditches

- Emerging grassland and heath on cutover peat
- Hedgerows
- Recolonising bare ground/Buildings and artificial surfaces
- Wet grassland



Prepared by:
Ian Douglas

Date:
21/06/21

Job:
MSWP Greenway

Base Map:
Bing Maps Aerial
2019

Client: Clandillon
Civil Consulting

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Boughill to Derryhaun

- Boughill to Derryhaun Chainage
- Water Courses

Ecological Constraints

- To be retained where possible

Boughill to Derryhaun habitats

- Buildings and artificial surfaces
- Cutover bog/Bare peat
- Emerging grassland and heath on cutover peat
- Heath
- Hedgerows

- Improved agricultural grassland
- Mixed broadleaved woodland/Scrub
- Recolonising bare ground/Buildings and artificial surfaces
- Scrub
- Treelines



Prepared by:
Ian Douglas

Date:
21/06/21

Job:
MSWP Greenway

Base Map:
Bing Maps Aerial
2019

Client: Clandillon
Civil Consulting

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Boughill to Derryhaun

- Boughill to Derryhaun Chainage
- Water Courses

Boughill to Derryhaun habitats

- Buildings and artificial surfaces
- Hedgerows
- Improved agricultural grassland

- Mixed broadleaved woodland/Scrub
- Recolonising bare ground/Buildings and artificial surfaces
- Scrub
- Treelines

Overview of Chainage Sections

Mosstown to Gorteencalreen

CLIENT: Clandillon Civil Consulting

Legend

— Proposed Route

▭ Mosstown to Gorteencalreen Sections

0000 - 3500

0000c - 1570c, 0000d - 0393d

0000a - 3300a

0000b - 2600b

3500 - 9600



Prepared by: Ian Douglas

Date: 24/06/2021

Version number: 2

Job Reference: Longford Greenway

Base Map: Bing Aerial 2019

Disclaimer: This map has been prepared in accordance with the scope of services described in the contract or agreement between Flynn Furney Environmental Consultants and the Client. Any findings only apply to the aforementioned circumstances and no greater reliance should be assumed or drawn by the Client.

Mosstown to Gorteenalreen: Ecological Constraints & Habitats



Prepared by:
Ian Douglas

Date:
12/11/20

Job:
MSWP Greenway

Base Map:
Bing Maps Aerial
2019

Client: Clandillon
Civil Consulting

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Legend

- | | | |
|--------------------------------------|--|--|
| — Mosstown to Gorteenalreen Route | Emerging woodland on cutover bog | Recolonising bare ground/Buildings and artificial surfaces |
| ● Mosstown to Gorteenalreen chainage | Emerging woodland on cutover bog/Scrub | Scrub |
| Habitat Types | Heath | Wet grassland |
| Bog woodland | Remnant Raised Bog | Ecologically Sensitive Areas |
| Cutover bog/Bare peat | Possible degraded raised bog/Scrub | |



Prepared by:
Ian Douglas

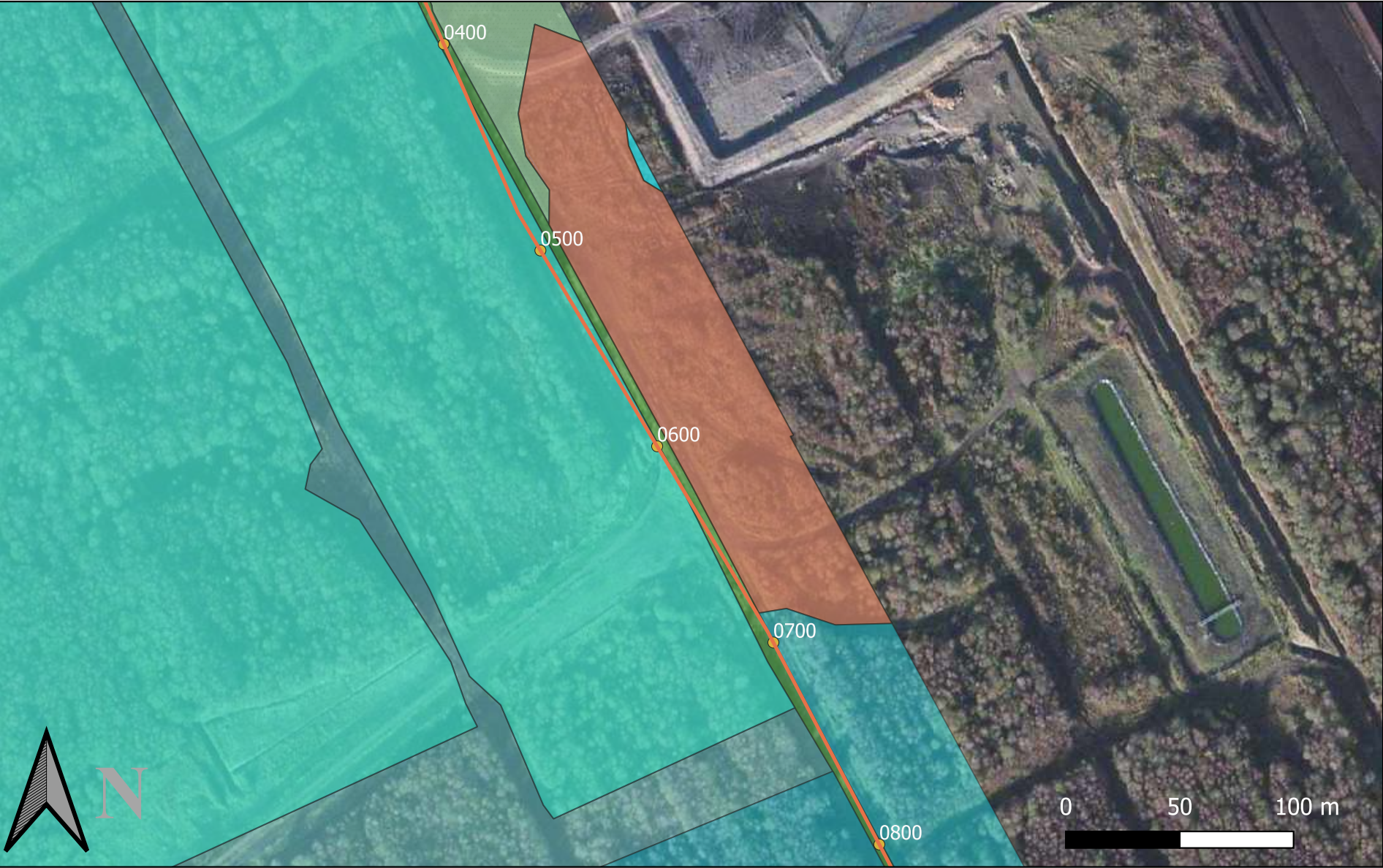
Date:
12/11/20

Job:
MSWP Greenway

Base Map:
Bing Maps Aerial
2019

Client: Clandillon
Civil Consulting

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Legend

- Mosstown to Gorteenalreen Route

Mosstown to Gorteenalreen chainage
- Bog woodland
- Cutover bog/Bare peat
- Emerging woodland on cutover bog
- Emerging woodland on cutover bog/Scrub
- Remnant Raised Bog
- Recolonising bare ground/Buildings and artificial surfaces
- Scrub
- Ecologically Sensitive Areas



Prepared by:
Ian Douglas

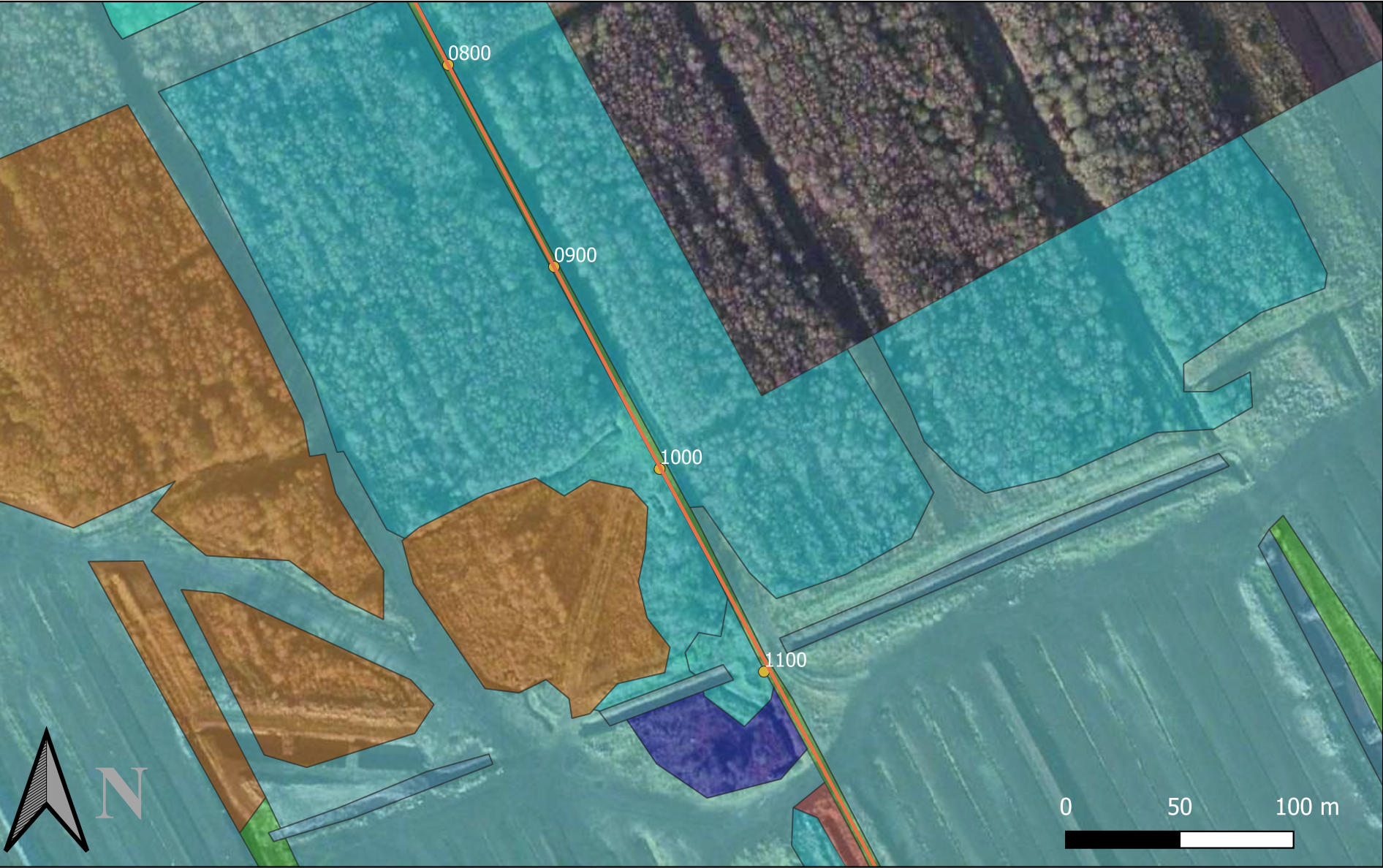
Date:
12/11/20

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MSWP Greenway

Base Map:
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Client: Clandillon
Civil Consulting

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Legend

- | | | |
|--------------------------------------|--|--|
| — Mosstown to Gorteenalreen Route | Conifer plantation | Heath |
| ● Mosstown to Gorteenalreen chainage | Cutover bog/Bare peat | Recolonising bare ground/Buildings and artificial surfaces |
| Habitat Types | Drainage ditches | |
| Bog woodland | Emerging woodland on cutover bog | |
| | Emerging woodland on cutover bog/Scrub | |



Prepared by:
Ian Douglas

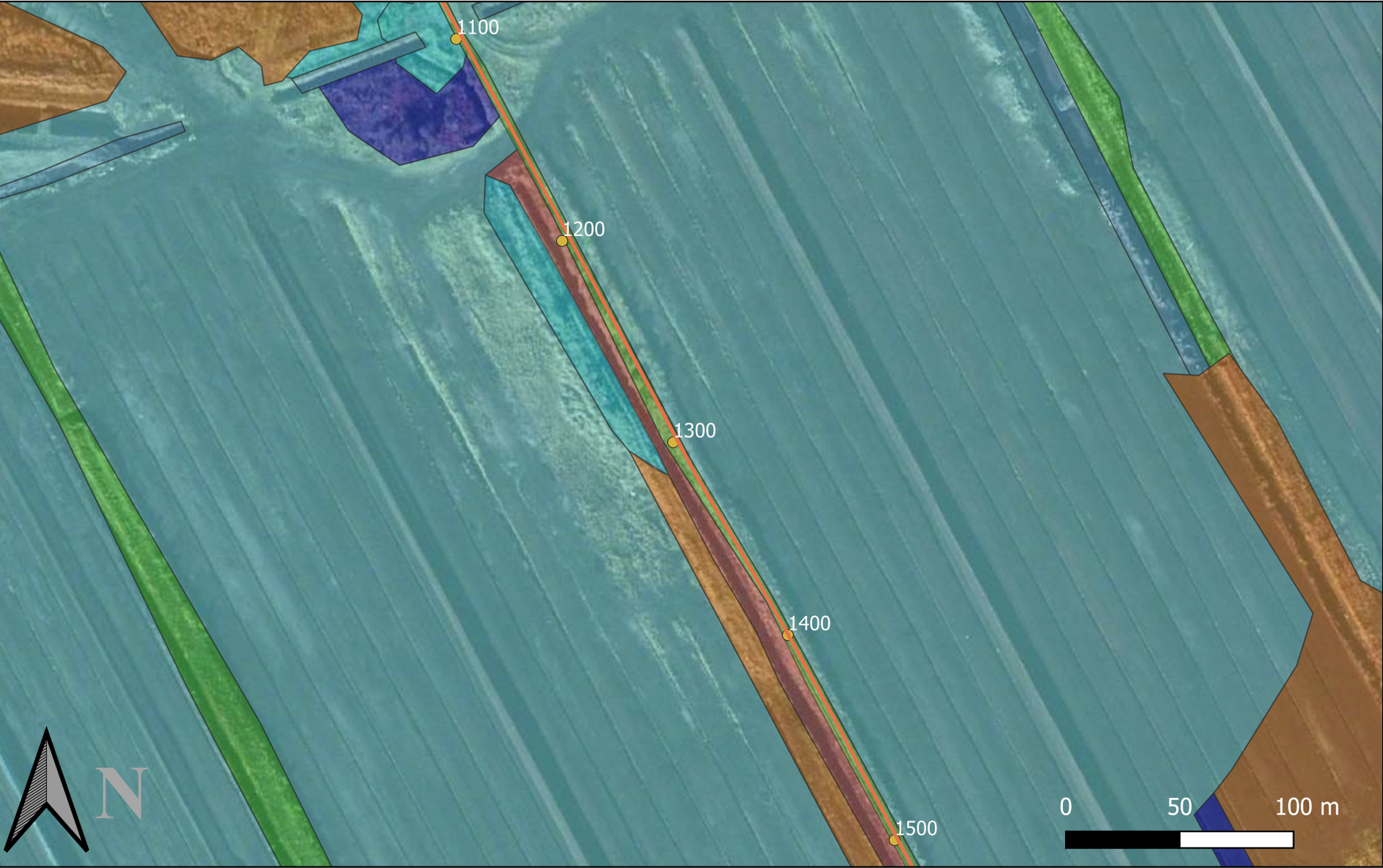
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Job:
MSWP Greenway

Base Map:
Bing Maps Aerial
2019

Client: Clandillon
Civil Consulting

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Legend

- Mosstown to Gorteenalreen Route

Mosstown to Gorteenalreen chainage

Conifer plantation

Cutover bog/Bare peat

Drainage ditches

Emerging woodland on cutover bog

Emerging woodland on cutover bog/Scrub

Heath

Recolonising bare ground/Buildings and artificial surfaces



Prepared by:
Ian Douglas

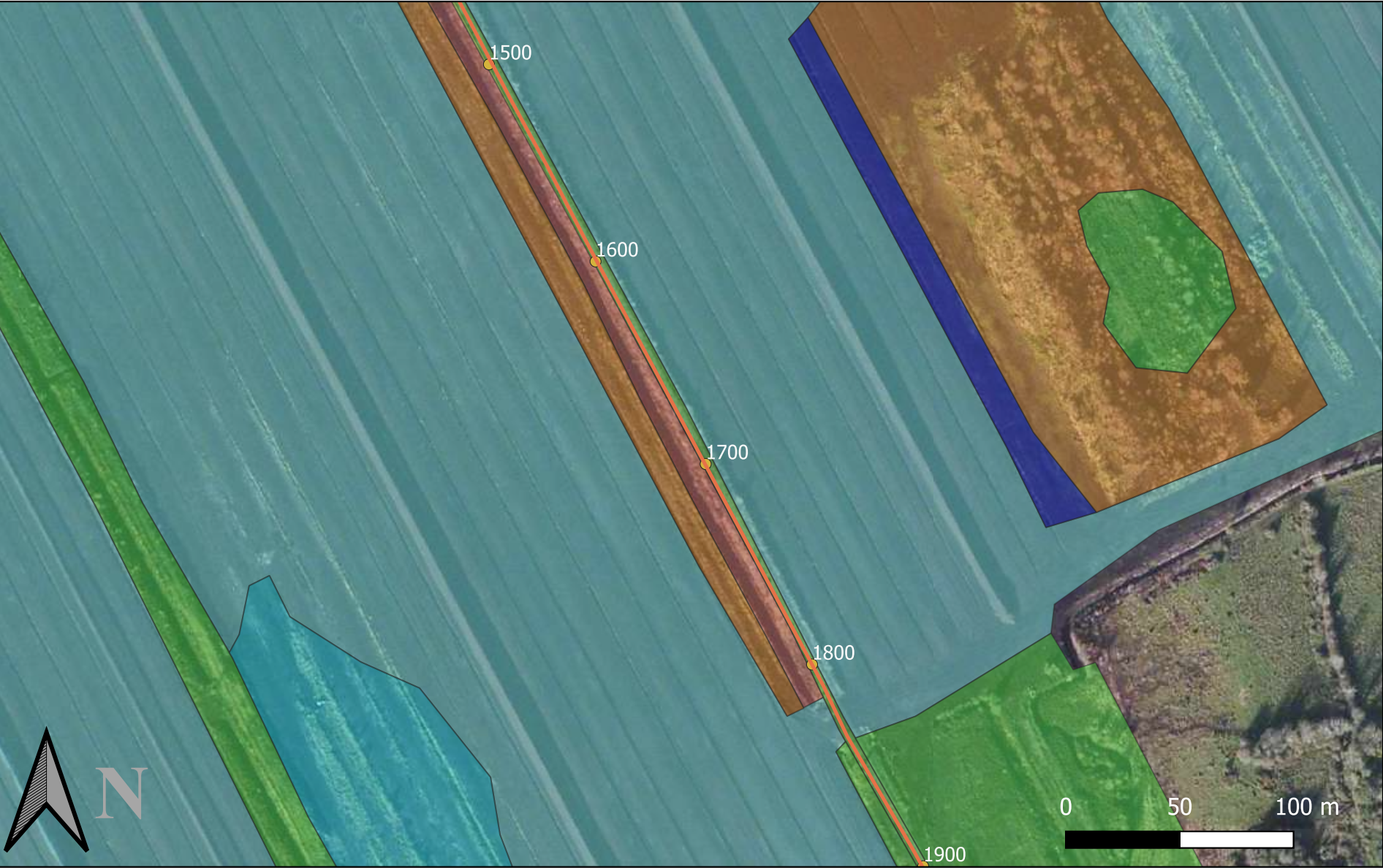
Date:
12/11/20

Job:
MSWP Greenway

Base Map:
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Client: Clandillon
Civil Consulting

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Legend

- | | | |
|--------------------------------------|--|--|
| — Mosstown to Gorteenalreen Route | □ Cutover bog/Bare peat | □ Recolonising bare ground/Buildings and artificial surfaces |
| ● Mosstown to Gorteenalreen chainage | □ Emerging woodland on cutover bog | |
| Habitat Types | □ Emerging woodland on cutover bog/Scrub | |
| □ Conifer plantation | □ Heath | |



Prepared by:
Ian Douglas

Date:
12/11/20

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Legend

- | | | |
|--------------------------------------|--|-----------------|
| — Mosstown to Gorteenalreen Route | ■ Buildings and artificial surfaces | ■ Wet grassland |
| ● Mosstown to Gorteenalreen chainage | ■ Cutover bog/Bare peat | |
| Habitat Types | ■ Emerging woodland on cutover bog | |
| ■ Bog woodland/Scrub | ■ Heath | |
| | ■ Recolonising bare ground/Buildings and artificial surfaces | |



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Legend

- | | | |
|--------------------------------------|--|-----------------|
| — Mosstown to Gorteenalreen Route | ■ Buildings and artificial surfaces | ■ Wet grassland |
| ● Mosstown to Gorteenalreen chainage | ■ Cutover bog/Bare peat | |
| Habitat Types | ■ Emerging woodland on cutover bog | |
| ■ Bog woodland/Scrub | ■ Heath | |
| | ■ Recolonising bare ground/Buildings and artificial surfaces | |



Prepared by:
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Legend

- Mosstown to Gorteenalreen Route

Mosstown to Gorteenalreen chainage
- Emerging woodland on cutover bog
- Recolonising bare ground/Buildings and artificial surfaces
- Wet grassland
- Ecologically Sensitive Areas
- Cutover bog/Bare peat

Habitat Types

Cutover bog/Bare peat



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Legend

- Mosstown to Gorteenalreen Route

Mosstown to Gorteenalreen chainage

Bog woodland & wetland mosaic

Cutover bog/Bare peat
- Drainage ditches/Eroding rivers

Emerging woodland on cutover bog

Emerging woodland on cutover bog/Scrub

Heath

Improved agricultural grassland/Wet grassland

Remnant Raised Bog
- Remnant Raised Bog/Bog woodland

Recolonising bare ground/Buildings and artificial surfaces

Wet grassland

Ecologically Sensitive Areas

Water Course



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Date:
12/11/20

Job:
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Civil Consulting

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Legend

- | | | |
|--------------------------------------|---|--|
| — Mosstown to Gorteenalreen Route | □ Cutover bog/Bare peat | □ Remnant Raised Bog/Bog woodland |
| ● Mosstown to Gorteenalreen chainage | □ Drainage ditches/Eroding rivers | □ Recolonising bare ground/Buildings and artificial surfaces |
| Habitat Types | □ Emerging woodland on cutover bog/Scrub | □ Ecologically Sensitive Areas |
| □ Bog woodland & wetland mosaic | □ Heath | — Water Course |
| | □ Improved agricultural grassland/Wet grassland | |



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Legend

- Mosstown to Gorteenalreen Route

Mosstown to Gorteenalreen chainage
- Drainage ditches/Eroding rivers
- Improved agricultural grassland/Wet grassland
- Recolonising bare ground/Buildings and artificial surfaces
- Cutover bog/Bare peat
- Water Course



Prepared by:
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Civil Consulting

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Legend

- Mosstown to Gorteenalreen Route
- Mosstown to Gorteenalreen chainage

Habitat Types

- Bog woodland/Mixed broadleaved woodland

- Cutover bog/Bare peat
- Drainage ditches/Eroding rivers
- Improved agricultural grassland/Wet grassland
- Recolonising bare ground/Buildings and artificial surfaces

Ecological Constraints

- Notes
- Water Course



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Legend

- Mosstown to Gorteenalreen Route

Mosstown to Gorteenalreen chainage

Cutover bog/Bare peat

Drainage ditches/Eroding rivers

Recolonising bare ground/Buildings and artificial surfaces

Bog woodland/Mixed broadleaved woodland

Ecological Constraints

Notes

Water Course



Prepared by:
Ian Douglas

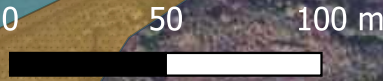
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Legend

- Mosstown to Gorteenalreen Route
- Mosstown to Gorteenalreen chainage
- Remnant Raised Bog
- Recolonising bare ground/Buildings and artificial surfaces
- Ecologically Sensitive Areas

Habitat Types

- Cutover bog/Bare peat



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Legend

- Mosstown to Gorteenalreen Route

Mosstown to Gorteenalreen chainage
- Emerging woodland on cutover bog/Scrub
- Remnant Raised Bog
- Recolonising bare ground/Buildings and artificial surfaces
- Wet grassland
- Ecologically Sensitive Areas

Habitat Types

Cutover bog/Bare peat



Prepared by:
Ian Douglas

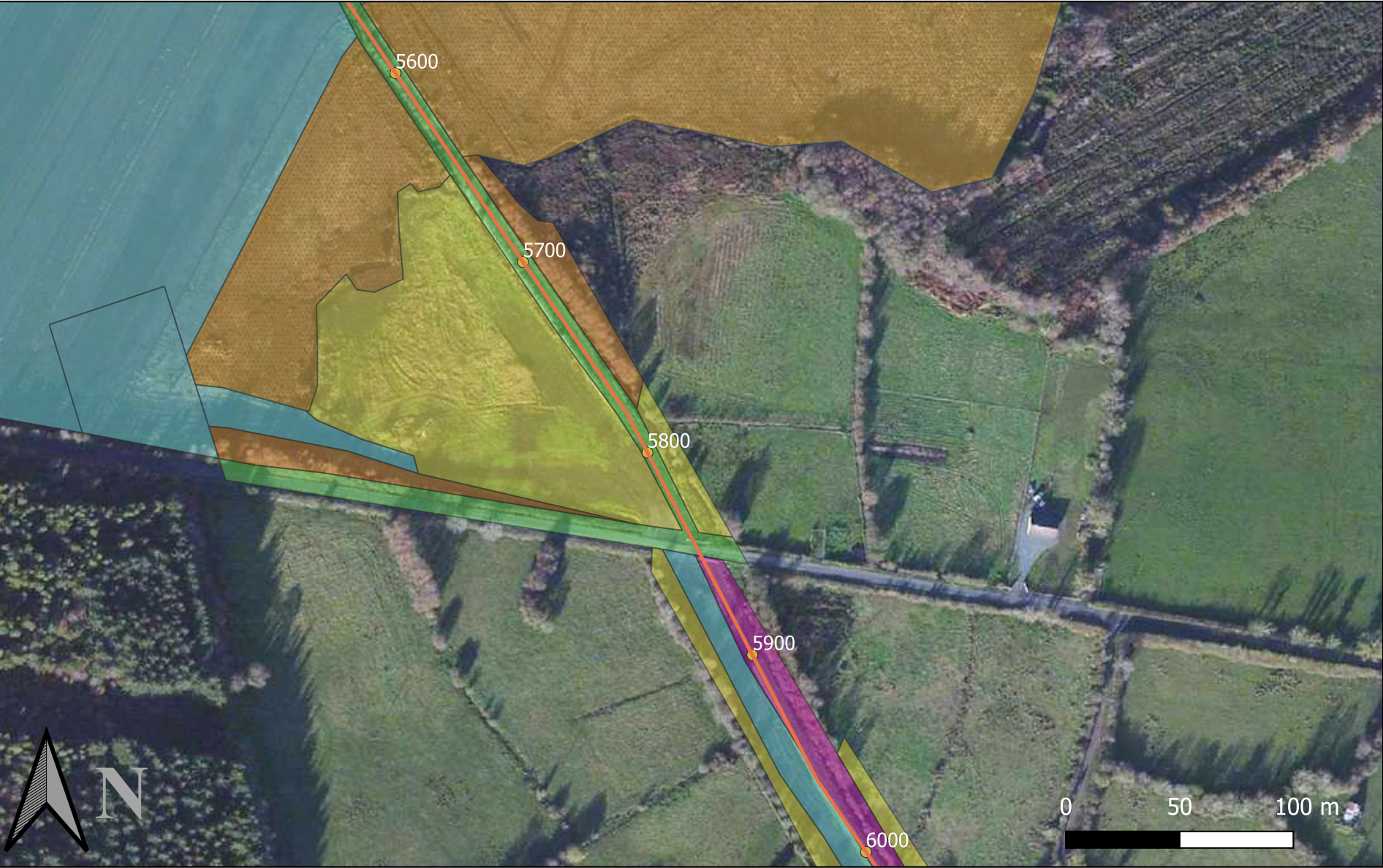
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Legend

- Mosstown to Gorteenalreen Route

Mosstown to Gorteenalreen chainage
- Habitat Types**

Bog woodland & wetland mosaic
- Cutover bog/Bare peat

Emerging woodland on cutover bog/Scrub

Remnant Raised Bog

Recolonising bare ground/Buildings and artificial surfaces

Wet grassland
- Ecologically Sensitive Areas



Prepared by:
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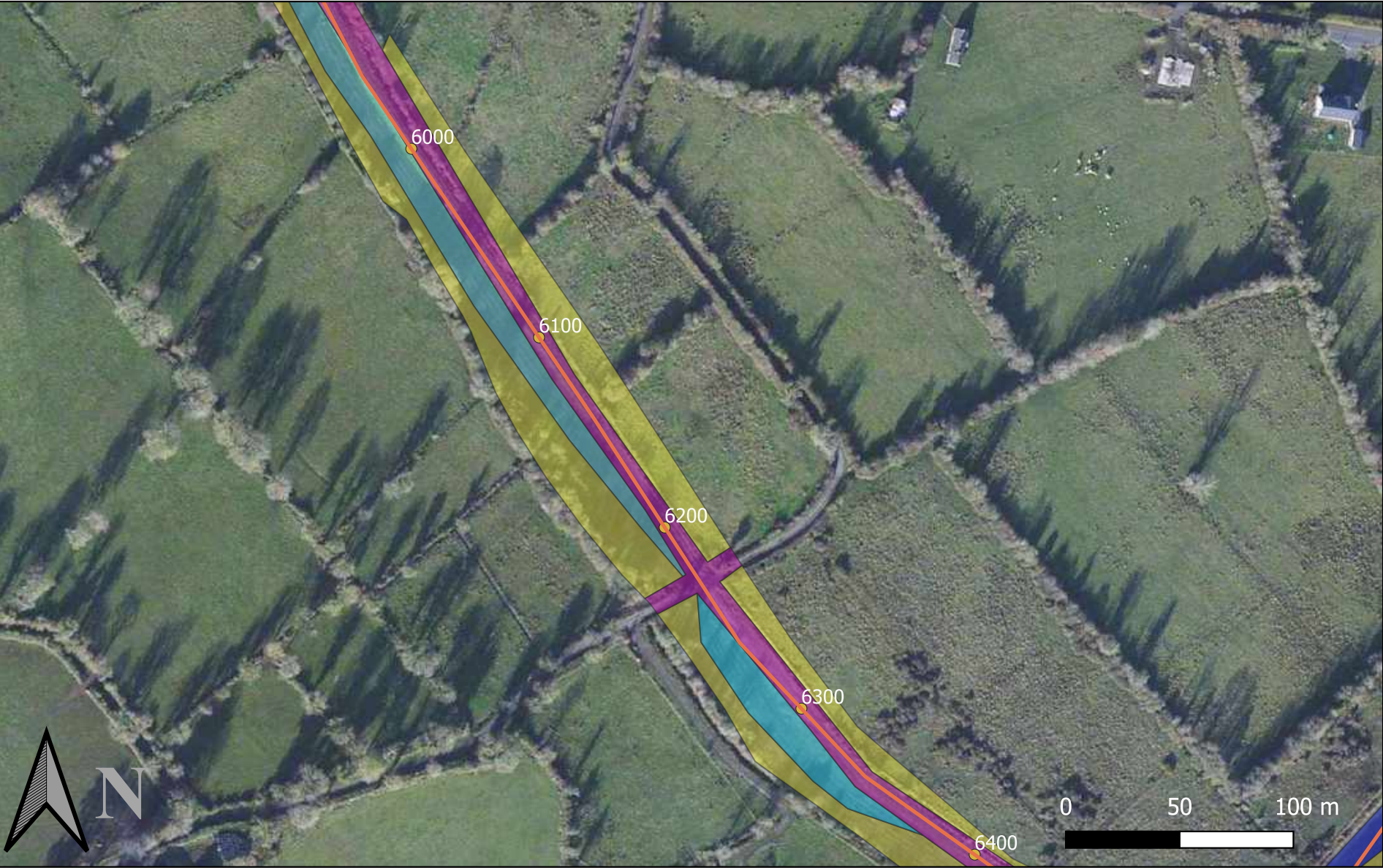
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Legend

- Mosstown to Gorteenalreen Route

Mosstown to Gorteenalreen chainage
- Cutover bog/Bare peat

Emerging woodland on cutover bog
- Wet grassland

Habitat Types

Bog woodland & wetland mosaic



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Legend

- Mosstown to Gorteenalreen Route

Mosstown to Gorteenalreen chainage
- Bog woodland & wetland mosaic

Bog woodland/Mixed broadleaved woodland

Cutover bog/Bare peat

Emerging woodland on cutover bog

Emerging woodland on cutover bog/Scrub
- Wet grassland



Prepared by:
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Legend

- Mosstown to Gorteenalreen Route
- Mosstown to Gorteenalreen chainage
- Bog woodland/Mixed broadleaved woodland
- Heath

Habitat Types

- Bog woodland & wetland mosaic



Prepared by:
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Legend

- Mosstown to Gorteenalreen Route

Mosstown to Gorteenalreen chainage
- Bog woodland & wetland mosaic
- Bog woodland/Mixed broadleaved woodland
- Drainage ditches
- Heath
- Improved agricultural grassland
- Water Course



Prepared by:
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Legend

- | | | |
|--------------------------------------|---|--------------------------------|
| — Mosstown to Gorteenalreen Route | ■ Bog woodland/Mixed broadleaved woodland | ■ Scrub |
| ● Mosstown to Gorteenalreen chainage | ■ Cutover bog/Bare peat | ■ Wet grassland |
| Habitat Types | ■ Drainage ditches | ■ Ecologically Sensitive Areas |
| ■ Bog woodland & wetland mosaic | ■ Heath | — Water Course |
| | ■ Improved agricultural grassland | |



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Legend

- | | | |
|--------------------------------------|--|--------------------------------|
| — Mosstown to Gorteenalreen Route | — Cutover bog/Bare peat | — Scrub |
| ● Mosstown to Gorteenalreen chainage | — Drainage ditches | — Wet grassland |
| Habitat Types | — Heath | — Ecologically Sensitive Areas |
| — Bog woodland & wetland mosaic | — Improved agricultural grassland/Wet grassland | — Water Course |
| | — Recolonising bare ground/Buildings and artificial surfaces | |



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Legend

- Mosstown to Gorteenalreen Route
- Remnant Raised Bog
- Ecologically Sensitive Areas
- Mosstown to Gorteenalreen chainage

Habitat Types

- Cutover bog/Bare peat



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Legend

- Mosstown to Gorteenalreen Route

Mosstown to Gorteenalreen chainage
- Emerging woodland on cutover bog/Scrub

Mixed conifer woodland

Remnant Raised Bog

Wet grassland/Scrub
- Ecologically Sensitive Areas
- Drainage ditches

Habitat Types



Prepared by:
Ian Douglas

Date:
12/11/20

Job:
MSWP Greenway

Base Map:
Bing Maps Aerial
2019

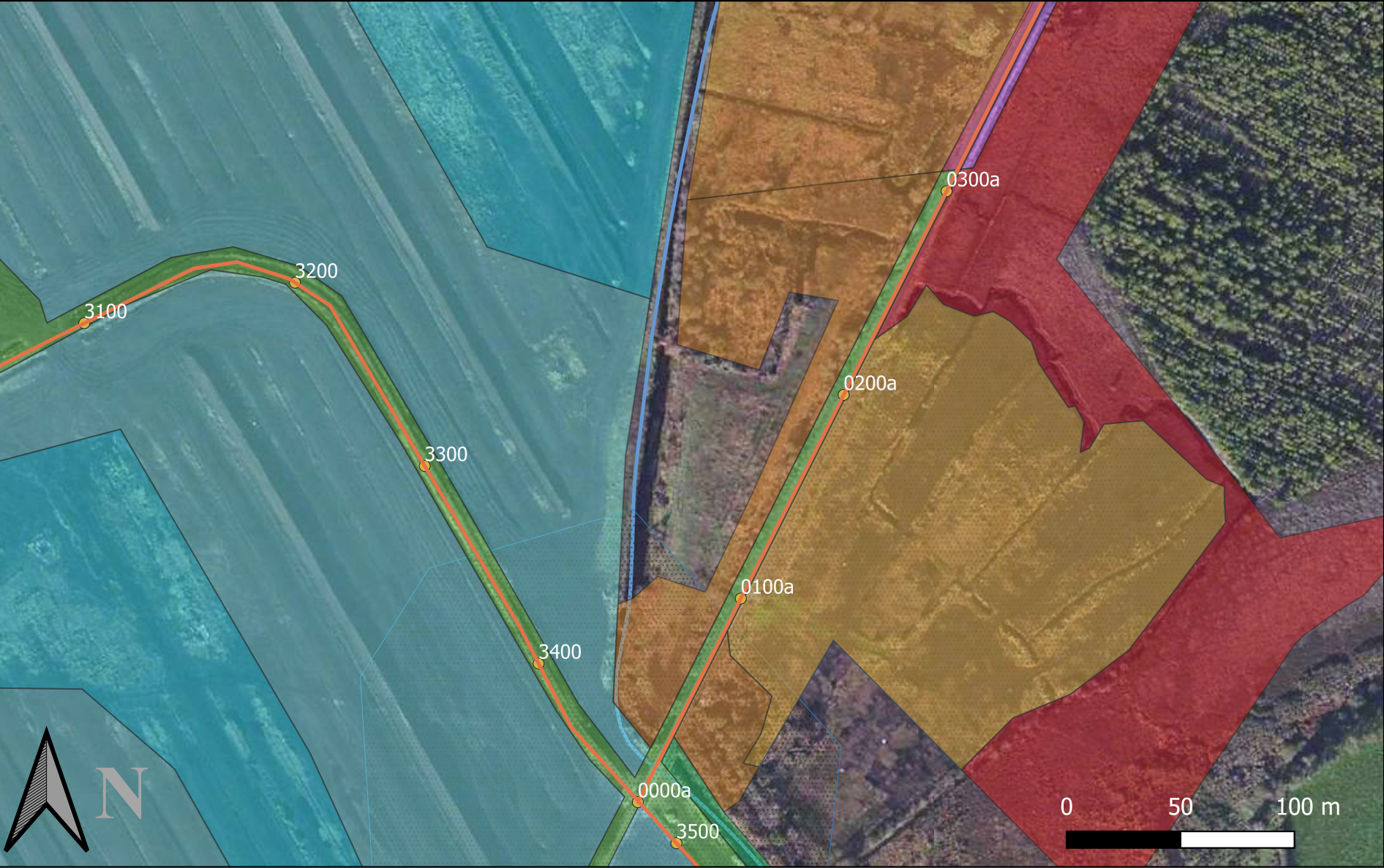
Client: Clandillon
Civil Consulting

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Legend

- | | | |
|------------------------------------|--|------------------------------|
| Mosstown to Gorteenalreen Route | Drainage ditches | Remnant Raised Bog |
| Mosstown to Gorteenalreen chainage | Emerging woodland on cutover bog/Scrub | Treelines |
| Habitat Types | Hedgerows | Wet grassland/Scrub |
| Buildings and artificial surfaces | Improved agricultural grassland | Ecologically Sensitive Areas |
| | Mixed conifer woodland | |



Prepared by:
Ian Douglas

Date:
12/11/20

Job:
MSWP Greenway

Base Map:
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2019

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Civil Consulting

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Legend

- Mosstown to Gorteenalreen Route

Mosstown to Gorteenalreen chainage

Buildings and artificial surfaces

Cutover bog/Bare peat
- Drainage ditches/Eroding rivers

Emerging woodland on cutover bog

Emerging woodland on cutover bog/Scrub

Hedgerows/Scrub

Remnant Raised Bog
- Remnant Raised Bog/Bog woodland

Recolonising bare ground/Buildings and artificial surfaces

Ecologically Sensitive Areas

Water Course



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Legend

- Mosstown to Gorteenalreen Route

Mosstown to Gorteenalreen chainage

Bog woodland

Buildings and artificial surfaces
- Emerging woodland on cutover bog

Emerging woodland on cutover bog/Scrub

Hedgerows/Scrub

Remnant Raised Bog/Bog woodland

Remnant Raised Bog/Heath
- Recolonising bare ground/Buildings and artificial surfaces

Ecological Constraints

To be retained where possible

Water Course



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Legend

- | | | |
|--------------------------------------|---|---|
| — Mosstown to Gorteenalreen Route | □ Bog woodland/Mixed broadleaved woodland | □ Emerging grassland and heath on cutover bog |
| ● Mosstown to Gorteenalreen chainage | □ Improved agricultural grassland/Wet grassland | □ Ecologically Sensitive Areas |
| Habitat Types | □ Remnant Raised Bog | |
| □ Bog woodland | □ Remnant Raised Bog/Bog woodland | |
| | □ Remnant Raised Bog/Heath | |



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Legend

- Mosstown to Gorteenalreen Route

Mosstown to Gorteenalreen chainage

Habitat Types

Bog woodland
- Bog woodland & wetland mosaic

Bog woodland/Scrub

Cutover bog/Bare peat

Emerging woodland on cutover bog

Improved agricultural grassland/Wet grassland
- Remnant Raised Bog

Recolonising bare ground/Buildings and artificial surfaces

Emerging grassland and heath on cutover bog

Ecologically Sensitive Areas



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Legend

- | | | |
|--------------------------------------|--|--|
| — Mosstown to Gorteenalreen Route | ■ Bog woodland & wetland mosaic | ■ Recolonising bare ground/Buildings and artificial surfaces |
| ● Mosstown to Gorteenalreen chainage | ■ Bog woodland/Scrub | ■ Ecologically Sensitive Areas |
| Habitat Types | ■ Cutover bog/Bare peat | |
| ■ Bog woodland | ■ Emerging woodland on cutover bog | |
| | ■ Emerging woodland on cutover bog/Scrub | |



Prepared by:
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Date:
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Base Map:
Bing Maps Aerial 2019

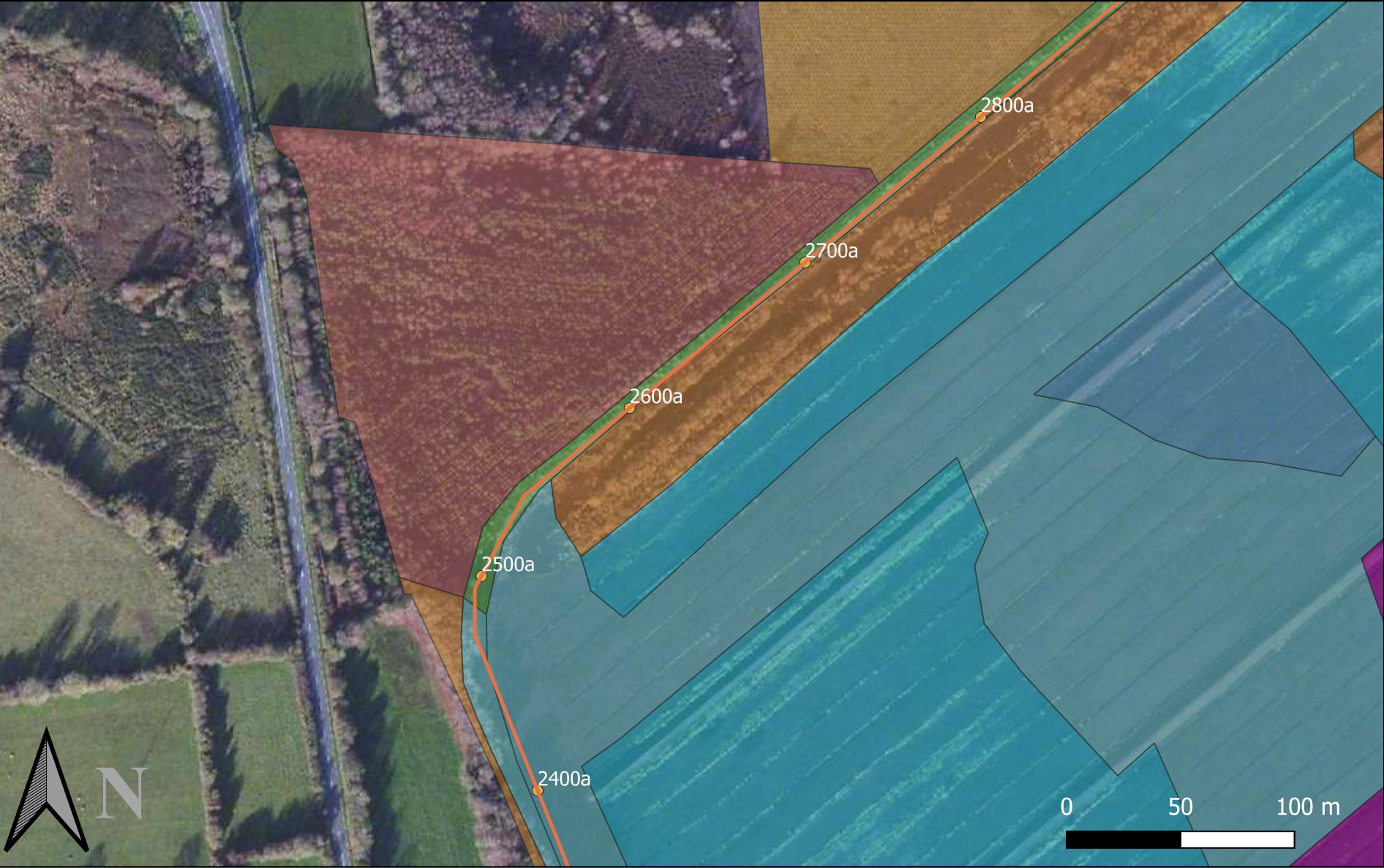
Client: Clandillon
Civil Consulting

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Legend

- | | | |
|--------------------------------------|------------------------------------|--|
| — Mosstown to Gorteenalreen Route | ■ Bog woodland & wetland mosaic | ■ Emerging woodland on cutover bog/Scrub |
| ● Mosstown to Gorteenalreen chainage | ■ Cutover bog/Bare peat | |
| Habitat Types | ■ Emerging woodland on cutover bog | |
| ■ Bog woodland | | |



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Legend

- | | | |
|------------------------------------|--|--|
| Mosstown to Gorteenalreen Route | Conifer plantation | Remnant Raised Bog |
| Mosstown to Gorteenalreen chainage | Cutover bog/Bare peat | Recolonising bare ground/Buildings and artificial surfaces |
| Habitat Types | Drainage ditches | Ecologically Sensitive Areas |
| Bog woodland & wetland mosaic | Emerging woodland on cutover bog | |
| | Emerging woodland on cutover bog/Scrub | |



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Legend

- Mosstown to Gorteenalreen Route

Mosstown to Gorteenalreen chainage

Habitat Types

Bog woodland/Mixed broadleaved woodland

Buildings and artificial surfaces/Dense bracken

Conifer plantation
- Cutover bog/Bare peat

Emerging woodland on cutover bog

Emerging woodland on cutover bog/Scrub

Heath/Scrub

Remnant Raised Bog

Recolonising bare ground/Buildings and artificial surfaces
- Ecologically Sensitive Areas



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Legend

- Mosstown to Gorteenalreen Route

Mosstown to Gorteenalreen chainage
- Bog woodland/Mixed broadleaved woodland

Buildings and artificial surfaces
- Cutover bog/Bare peat

Emerging woodland on cutover bog

Emerging woodland on cutover bog/Scrub

Heath

Heath/Scrub

Recolonising bare ground/Buildings and artificial surfaces



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Legend

- | | | |
|--------------------------------------|--|--------------------------------|
| — Mosstown to Gorteenalreen Route | □ Cutover bog/Bare peat | □ Heath/Scrub |
| ● Mosstown to Gorteenalreen chainage | □ Drainage ditches | □ Remnant Raised Bog |
| Habitat Types | □ Emerging woodland on cutover bog | □ Ecologically Sensitive Areas |
| □ Bog woodland & wetland mosaic | □ Emerging woodland on cutover bog/Scrub | □ Lakes |
| □ Buildings and artificial surfaces | □ Heath | |



Prepared by:
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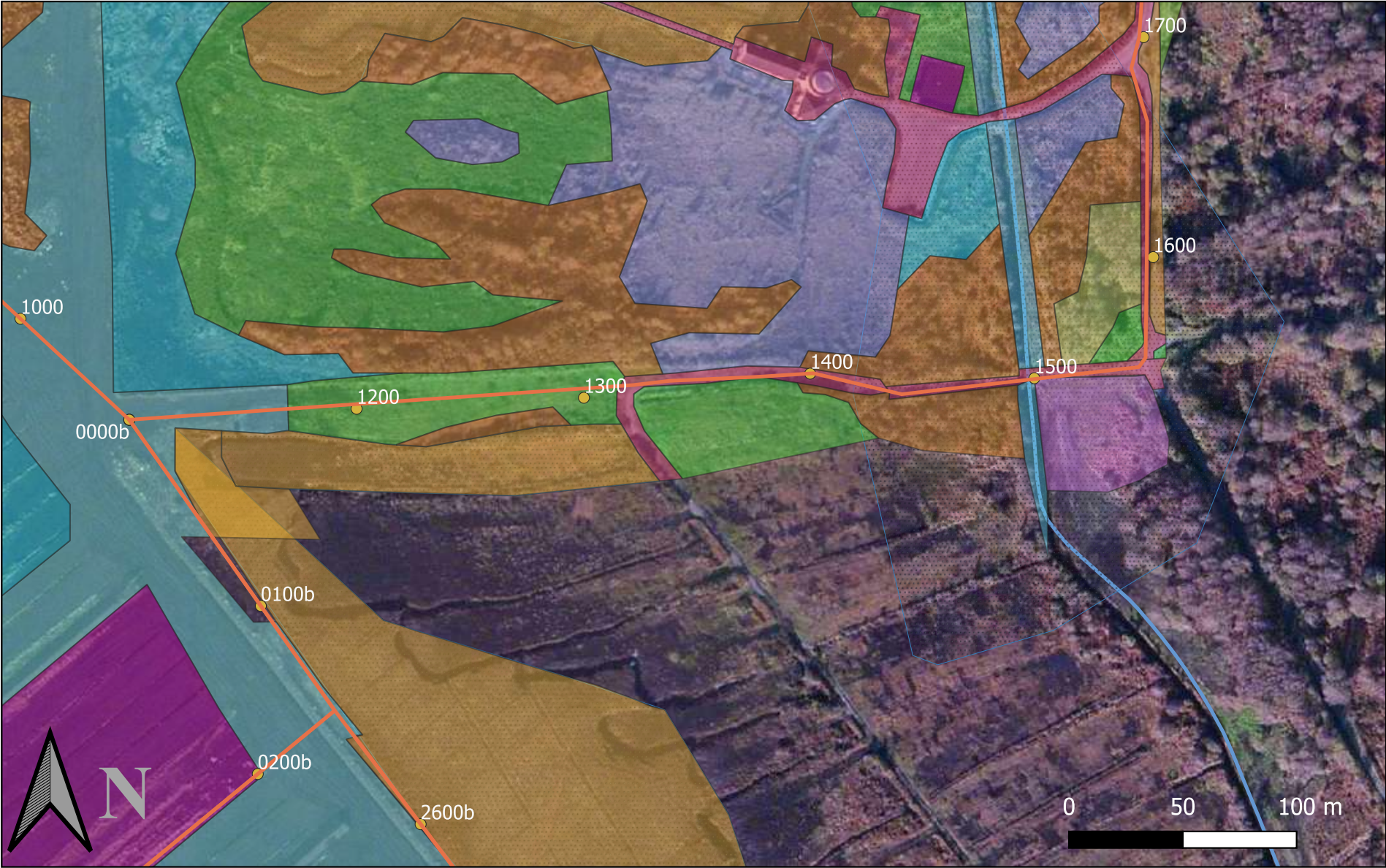
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Legend

- Mosstown to Gorteenalreen Route

Mosstown to Gorteenalreen chainage

Habitat Types

Bog woodland & wetland mosaic

Bog woodland/Mixed broadleaved woodland
- Bog woodland/Scrub

Buildings and artificial surfaces

Cutover bog/Bare peat

Drainage ditches

Emerging woodland on cutover bog

Emerging woodland on cutover bog/Scrub

Heath

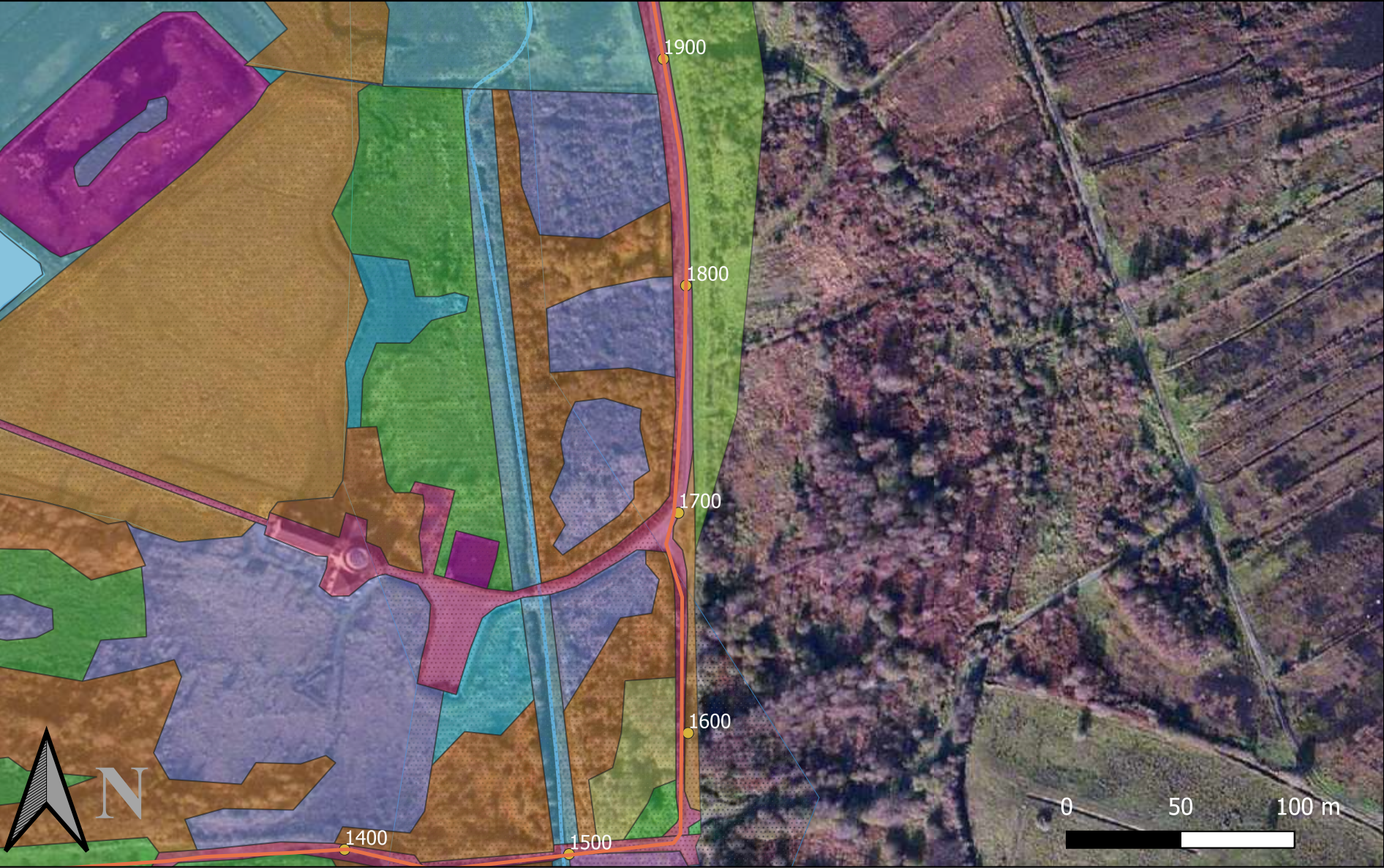
Heath/Scrub

Remnant Raised Bog

Scrub

Ecologically Sensitive Areas

Water Course



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Legend

- Mosstown to Gorteenalreen Route

Mosstown to Gorteenalreen chainage
- Buildings and artificial surfaces

Cutover bog/Bare peat

Drainage ditches

Emerging woodland on cutover bog

Emerging woodland on cutover bog/Scrub

Heath
- Heath/Scrub

Remnant Raised Bog

Scrub

Ecologically Sensitive Areas

Lakes

Water Course
- Bog woodland & wetland mosaic

Bog woodland/Mixed broadleaved woodland

Bog woodland/Scrub



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Legend

- Mosstown to Gorteenalreen Route

Mosstown to Gorteenalreen chainage

Bog woodland & wetland mosaic

Bog woodland/Scrub

Buildings and artificial surfaces
- Cutover bog/Bare peat

Drainage ditches

Emerging woodland on cutover bog

Emerging woodland on cutover bog/Scrub

Heath

Heath/Scrub
- Remnant Raised Bog

Ecological Constraints

Notes

Ecologically Sensitive Areas

Water Course



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Legend

- Mosstown to Gorteenalreen Route

● Mosstown to Gorteenalreen chainage

Habitat Types

 - Bog woodland & wetland mosaic
 - Bog woodland/Scrub

Buildings and artificial surfaces

Cutover bog/Bare peat

Emerging woodland on cutover bog

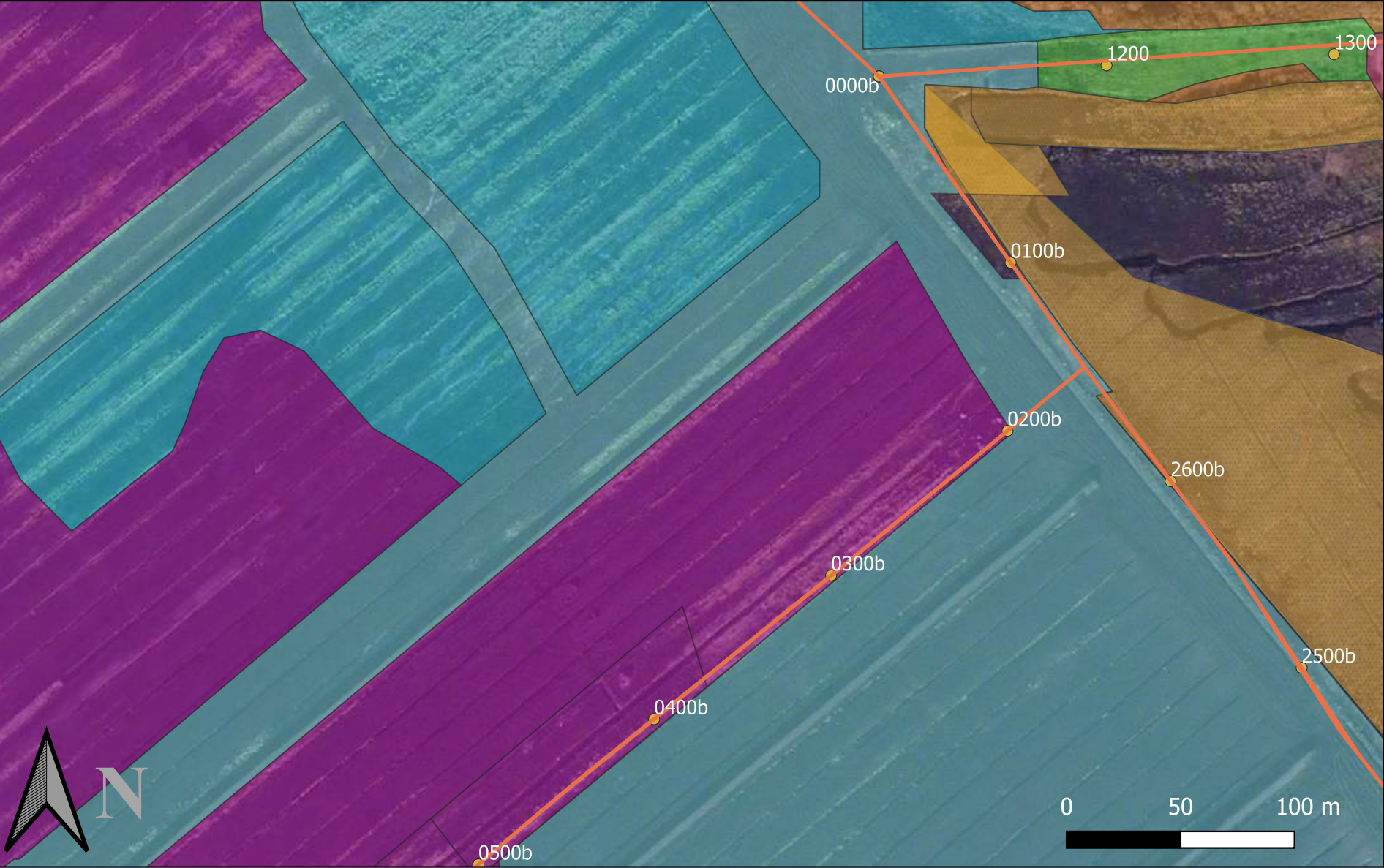
Emerging woodland on cutover bog/Scrub

Remnant Raised Bog

Recolonising bare ground/Buildings and artificial surfaces

Ecological Constraints

 - Notes
 - Ecologically Sensitive Areas
 - Water Course



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Legend

- Mosstown to Gorteenalreen Route

Mosstown to Gorteenalreen chainage
- Buildings and artificial surfaces
- Cutover bog/Bare peat
- Emerging woodland on cutover bog
- Emerging woodland on cutover bog/Scrub
- Heath
- Remnant Raised Bog
- Ecologically Sensitive Areas

Habitat Types

Bog woodland & wetland mosaic



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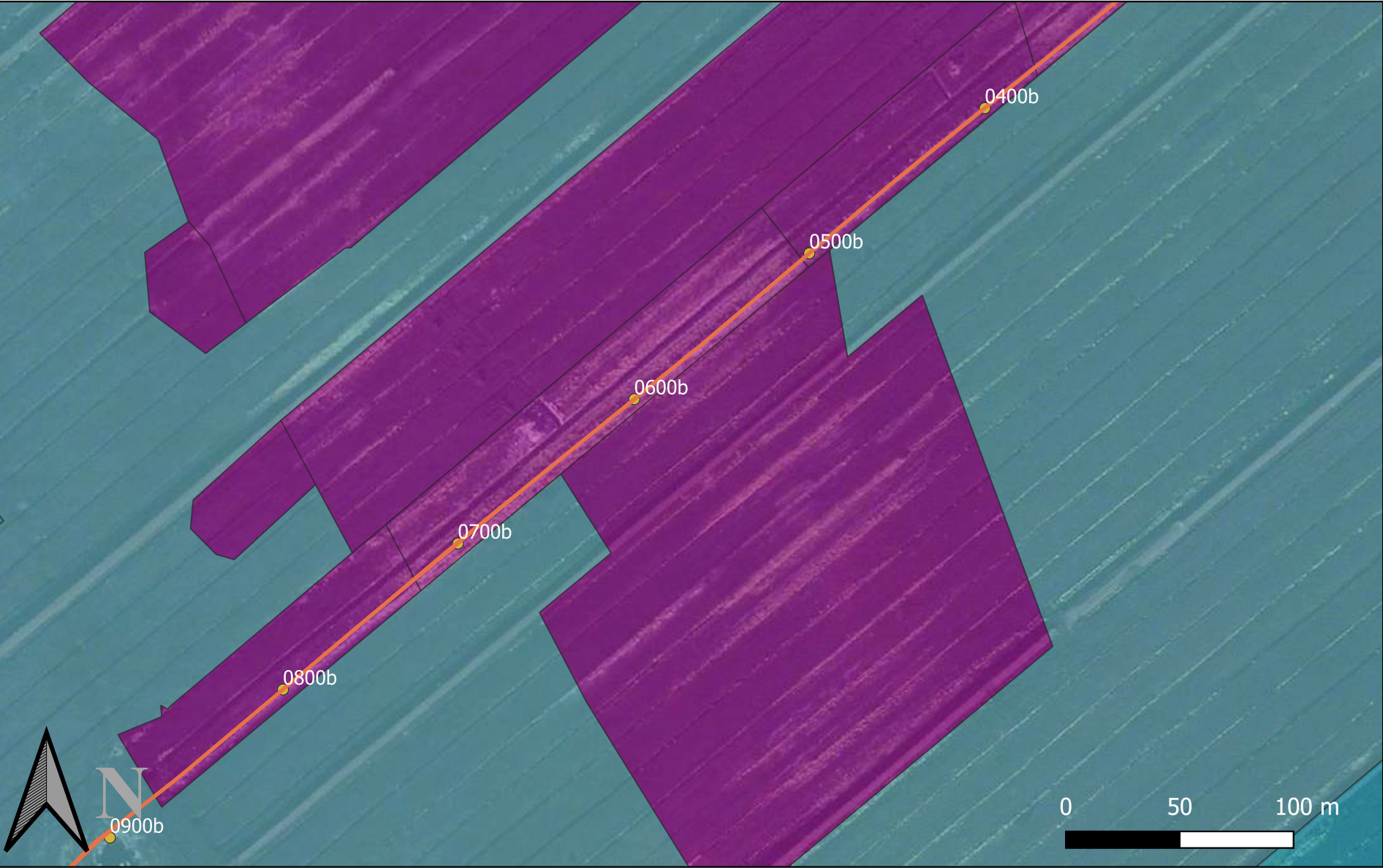
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Legend

- Mosstown to Gorteenalreen Route
- Mosstown to Gorteenalreen chainage
- Cutover bog/Bare peat
- Emerging woodland on cutover bog

Habitat Types

- Bog woodland & wetland mosaic



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Legend

- Mosstown to Gorteenalreen Route

Mosstown to Gorteenalreen chainage

Habitat Types

Bog woodland & wetland mosaic
- Bog woodland/Scrub

Cutover bog/Bare peat

Emerging woodland on cutover bog

Improved agricultural grassland/Wet grassland

Remnant Raised Bog
- Recolonising bare ground/Buildings and artificial surfaces

Emerging grassland and heath on cutover bog

Ecologically Sensitive Areas



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Legend

- Mosstown to Gorteenalreen Route

Mosstown to Gorteenalreen chainage
- Habitat Types**

Bog woodland/Scrub
- Cutover bog/Bare peat

Emerging woodland on cutover bog

Recolonising bare ground/Buildings and artificial surfaces
- Ecologically Sensitive Areas



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Legend

- Mosstown to Gorteenalreen Route

Mosstown to Gorteenalreen chainage
- Habitat Types**

Bog woodland & wetland mosaic
- Bog woodland/Scrub
- Cutover bog/Bare peat
- Emerging woodland on cutover bog
- Remnant Raised Bog
- Recolonising bare ground/Buildings and artificial surfaces
- Ecologically Sensitive Areas



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Legend

- Mosstown to Gorteenalreen Route

Mosstown to Gorteenalreen chainage
- Emerging woodland on cutover bog

Remnant Raised Bog

Ecologically Sensitive Areas
- Water Course

Habitat Types

Cutover bog/Bare peat



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Legend

- Mosstown to Gorteenalreen Route

Mosstown to Gorteenalreen chainage

Bog woodland & wetland mosaic

Buildings and artificial surfaces

Cutover bog/Bare peat

Drainage ditches

Emerging woodland on cutover bog

Emerging woodland on cutover bog/Scrub

Heath

Remnant Raised Bog

Scrub

Ecologically Sensitive Areas

Water Course