



LOUTH COUNTY COUNCIL

APPROPRIATE ASSESSMENT SCREENING REPORT

FOR

PROPOSED PLAYGROUND,

BALTRAY ROAD, TERMONFECKIN, CO. LOUTH

VOLUME I. REPORT

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2	<i>NPWS. (2013). Conservation Objectives: Boyne Estuary SPA [004080]. Version 1. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht.</i> <i>NPWS. (2013). Site Synopsis: Northwest Irish Sea cSPA [004236]. Version 1. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht.</i>

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1 INTRODUCTION

1.1 Project Background

It is understood that Louth County Council wish to install a new playground on a small site (555m²) located to the southwest of Scoill Naoimh Feichin Primary School, Termonfeckin, County Louth. The site currently has a disused public water abstraction borehole and associated pump system on its northern end and a 11m high disused concrete reservoir tower with a capacity of 160m³ in the middle of the site. Water was pumped from the well and into the 11m high reservoir which was used to store the abstracted groundwater water. Groundwater was then fed via gravity to a water treatment plant located approximately 200m to the north of the site where the water was treated prior to being distributed into the potable water system in Termonfeckin. The site is currently moderately overgrown with vegetation (see Plate 1 below).



Plate 1. UAV Aerial photograph of site taken at 40m elevation over the school to the north of the site facing in a southerly direction

The site is located on the southern side of Termonfeckin (i.e., approximately 300m south of Termonfeckin village centre) and on the eastern side of the R167 regional road (i.e., the Baltray Road) (see site location maps, Figures 1 to 6). It is understood that this development is being applied for under Part 8 of the *Planning and Development Regulations 2001*, and that an Appropriate Assessment screening assessment is required. Mulroy Environmental Ltd. were appointed by Louth County Council to carry out screening for appropriate assessment for the afore-mentioned playground development.

The proposed works area for Termonfeckin is approximately 555m² in footprint and is proposed for the middle of the site (see Figure 7. Site Location and Surrounding Property).

1.2 Proposed Demolition of Disused Reservoir & Decommissioning of Former Water Abstraction Well

In order to facilitate the development of the playground and to protect the underlying groundwater aquifer, the former water abstraction borehole on site will need to be decommissioned to prevent any surface contamination entering the well at the well head. The existing water abstraction pump and aboveground electrics will be removed. Following this, the interior of the well will be grouted up by a specialist contractor using a prescribed cement mix which will be pumped into the well using a tremmie pipe and aboveground grouting pump. After 48 hours to allow the grout to set, the pump chamber at the well head will be concrete filled thus preventing any contamination from entering the overburden along the well casing/overburden interface.

To facilitate the construction of the playground, the disused reservoir will require demolition by a specialist demolition contractor with the concrete and rebar generated removed offsite as construction and demolition waste. The removal of the water tower is not included in the development for which planning permission is being sought.

1.3 Proposed Playground Description

The works will be carried out within the site boundary as detailed in Figures 6 and 7. The playground will include a variety of play equipment such as a roundabout, swings and bucket swings.

A safety surface consisting of engineered woodchip will be installed as part of the works in the majority of the site's footprint. Tarmac pathways will provide accessible routes to the various apparatus and benches located within the site. Picnic benches, seating, bins and fencing will be provided on site. The development will require some limited use of concrete the installation of the play equipment and fencing.

The ground cover on the site will be free draining with rainwater falling on the site dissipating to ground via an appropriate designed drainage layer. As such, stormwater pipework will not be necessary for the development.

1.4 Site Description

The proposed development, which is approximately 555m², will make use of the full site (see Plate 2 below). It is proposed to demolish the existing concrete reservoir (see Plate 2 following). The site, which is covered by a mixture of gravel and soil, is currently disused (see Figures 6 & 7).



Plate 2. Photograph of site taken from the R167 to the southwest of the site facing in a north-easterly direction (note reservoir to be demolished)

The R167 Regional Road (known locally as the Baltray Road) is located to the west of the site. To the north and northeast of the site is located the Scoil Naomh Feichin Primary School. A detached residence and its grounds are located to the west of the R167 and 60m to the northwest of the site. A church, The Church of the Immaculate Conception and its Parochial House is located to the north of this residence and 90m to the northwest of the site (see Figures 6 & 7 and following Plate 3).



Plate 3. UAV Aerial photograph (50m elevation) at a location to the south of the site over the woodland facing in a northerly direction (note position of the reservoir on the bottom right-hand side shown approximately with red outline)

A sprawling mature planted woodland area is located to the south, east and northeast of the site. It is understood that this woodland, which has existed for over possibly 200 years is owned by the An Grianan (i.e., Irish Countrywomen’s Association) (see following Plates 4, 5 & 6). A smaller wood is located to the west of the R167 and to the southwest of the site.



Plate 4. UAV Aerial photograph (50m elevation) at a location to the north of the site over the Parochial House facing in a northerly direction



Plate 5. UAV Aerial photograph (50m elevation) at a location approximately 110m to the south of the site over the woodland facing in a northerly direction (note position of reservoir)



Plate 6. UAV Aerial photograph (50m elevation) at a location over Scoill Naomh Feichin to the north of the site facing in a north-westerly direction showing Church and residential estate (note position of Ballywater River (also referred to as Termonfeckin River by EPA) with vehicular and pedestrian bridges crossing to the northwest of the site)

1.5 Planning Background

A review of the Louth County Development Plan 2021-2027 Zoning Map for Termonfeckin indicates that the site has a ‘J2 Public Infrastructure and Utilities’ Land Use Category. The woodland located to the west, south and east of the site with the An Grianan centre are recognised as ‘Trees & Woodland of Special Amenity Value’ (see Plate 7 below). Policy Objective TER 20 which refers to the Natural and Built Heritage for Termonfeckin, has the following objective:

‘To promote the preservation of significant trees and hedgerows including those identified on the composite map and to manage these trees in line with arboricultural best practice.’

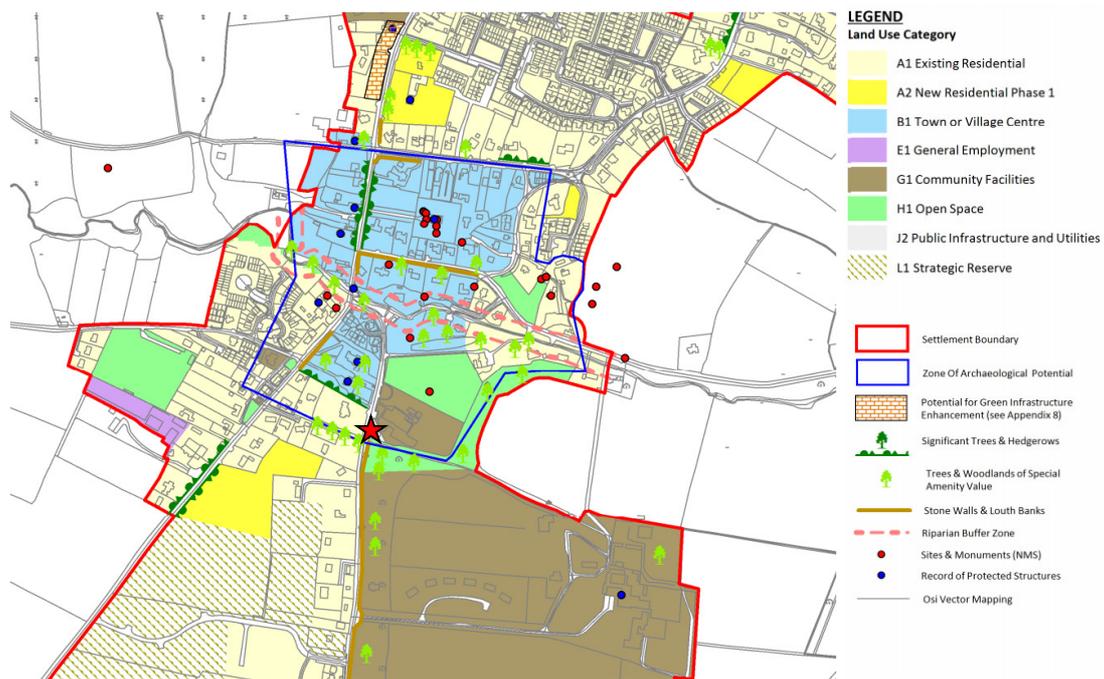


Plate 7. Termonfeckin Zoning Map (note red star indicates the location of the proposed playground site)

1.6 Appropriate Assessment Screening Report

The site is approximately 1.57km to the west of the Boyne Coast and Estuary Special Area of Conservation (SAC) (No. 001957) and 1.57km to the west of the Northwest Irish Sea Candidate Protected Area (SPA) (No. 004236) (see Figures 1 to 5, Table 1 & Plate 8 below).

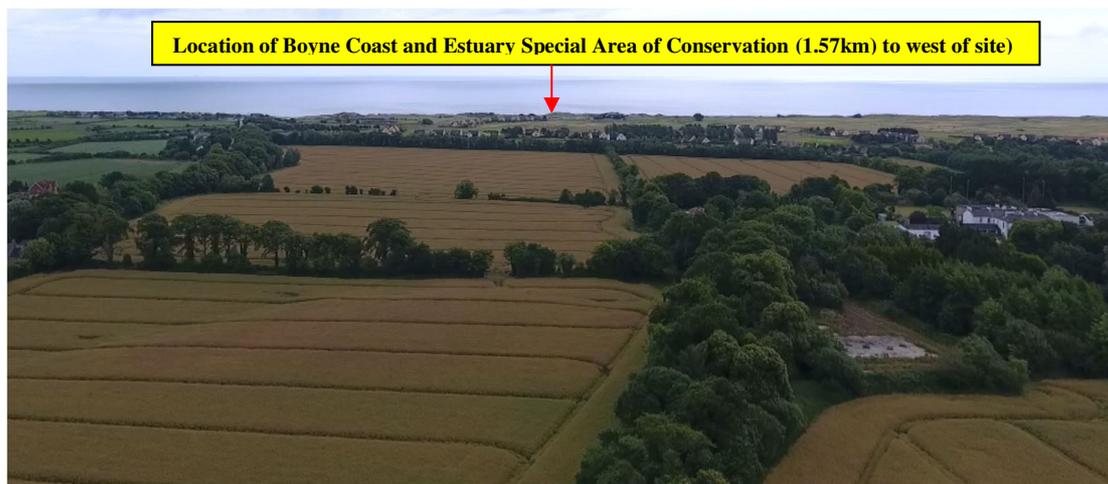


Plate 8. UAV Aerial photograph (X0m elevation) over woodland to the east of the site facing in an easterly direction towards Boyne Coast and Estuary Special Area of Conservation (SAC) and Northwest Irish Sea Candidate Protected Area (SPA)

A screening report for Appropriate Assessment was processed in order to determine if the aforementioned elements of this planning application (as laid out in Section 1.2), or in combination with other plans or projects, would be likely to have a significant effect on the designated Natura 2000 site(s) or any other European site, in view of the site's Conservation Objectives. This screening report for Appropriate Assessment was processed in order to determine the likelihood of any significant adverse effects on the integrity of the aforementioned European sites.

The site's stormwater and drainage system along with the hydrology and hydrogeology of the site were assessed with the purpose of identifying any potential pathways to nearest Natura 2000 site(s).

The following is an Appropriate Assessment Screening report to address the afore mentioned.

2 METHODOLOGY

2.1 Desk Study

A comprehensive GIS mapping and data review was carried out to identify all statutory protected areas and other non-statutory areas within 15km of the site. This involved a review of inland freshwater water ecosystems. All ecological, biological/Q-Index and hydrological/chemical monitoring data available from the websites of NPWS, National Biodiversity Data Centre, Bat Conservation Ireland, Louth C.C., EPA, GSI, OPW and WFD were reviewed. Information on protected species of fauna and flora listed for protection under Annex II of the EU Habitats Directive (92/43/EEC), Annex I of the Birds Directive (79/409/EEC) and the Wildlife (Amendment) Act (2000) will be sought from NPWS, the National Biodiversity Data Centre and published sources were reviewed. The National Parks and Wildlife Service (NPWS) of the Department of Arts, Heritage, Regional Rural and Gaeltacht Affairs database of designated conservation areas and NPWS records of rare and protected plant species were checked with regard to the location of the lands at Cavan Hill.

The online database hosted by the Irish National Biodiversity Data Centre (NBDC) (www.biodiversityireland.ie) was also utilised to assess the importance of the study area for mammals and bats. Other sources accessed to gather information on bats in the study area included The Bat Conservation Trust's report '*Distribution Atlas of Bats in Britain and Ireland 1980-1999*' (Richardson, 2000). The '*Irish Red Data Book 2: Vertebrates - Threatened Mammals, Birds, Amphibians and Fish in Ireland*' (Whilde, 1993) and the updated '*Irish Red List No.3: Terrestrial Mammals*' (Marnell *et al.* 2009) were also reviewed.

Recent, high resolution, colour aerial photographs were used to identify habitats of conservation value. Relevant mapping was prepared for the EcIA through a combination of Autocad Map 2017 and ArcGIS Pro. Ornithological data submitted as part of previous EcIAs, NISs and AA screening reports for developments within the vicinity of site were reviewed.

2.2 Unmanned Aerial Vehicle (Drone) Photogrammetry Survey & Video Survey

Mulroy Environmental Ltd. carried out 4K photogrammetric drone surveys on the 29th June, 2023 and a 4K video survey of the site and the surrounding area on the 4th July 2023. The canopy of the trees within the site and the adjacent woodland was at its maximum footprint.

Mulroy Environmental are licensed SOP holders with the Irish Aviation Authority/EASA and have drone specific insurance in addition to our normal Public and Employers Liability Insurance. The site is not in an IAA restricted flight zone and did not require SOP permission from the IAA. The purposes of the drone surveys were to familiarise Mulroy Environmental with the topography and vegetation of the site and to help in the production of drawings for report. Two dimensional orthomosaics were generated for each survey which were used in the production of detailed drawings for the site and in the accurate calculation of habitat area through their use in ArcGIS Survey 123. In addition, a 3D model of the site was produced which assisted in and in the mapping of habitats within the site.

TABLE 1. NATURE CONSERVATION SITES WITHIN 15 KM OF TERMONFECKIN PLAYGROUND SITE, BALTRAY ROAD, TERMONFECKIN, CO. LOUTH, (INFORMATION OBTAINED FROM WWW.NPWS.IE IN AUGUST 2023)

SITE NAME, SITE CODE, DISTANCE AND DIRECTION FROM SITE	SITE OR ORGANISM NAME AND/OR CODE GIVEN ACCORDING TO INTERPRETATION MANUAL OF EUROPEAN UNION HABITATS	THE POTENTIAL SOURCE-PATHWAY-RECEPTOR LINKS BETWEEN COLLON PLAYGROUND SITE AND THE ECOLOGICALLY DESIGNATED SITE
Special Protection Areas (SPA)		
<p>Northwest Irish Sea cSPA [004236] 1.57km (E)</p>	<p>The site is a Special Protection Area (SPA) under the E.U. Birds Directive, of special conservation interest for the following species:</p> <ul style="list-style-type: none"> • Common Scoter; • Red-throated Diver; • Great Northern Diver; • Fulmar; • Manx Shearwater; • Shag, Cormorant; • Little Gull, Kittiwake; • Black-headed Gull; • Common Gull; • Lesser Black-backed Gull; • Herring Gull; • Great Black-backed Gull; • Little Tern; • Roseate Tern; • Common Tern; • Arctic Tern; • Puffin; • Razorbill; and • Guillemot. <p>Source: NPWS. (2013). <i>Site Synopsis: Northwest Irish Sea cSPA [004236]</i>. Version 1. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht.</p>	<p>There will be no contaminated stormwater generated during the construction phase or the operational phase of the development and there are no proposals to generate a point discharge from the site. The material used for the ground covering will not generate leachate. As such, there is effectively no source of contamination which can migrate off site.</p> <p>The ground covering will facilitate the percolation of rainfall through the material into the underlying subsoil. As such, any stormwater generated on site will be free of contamination and will discharge to ground. Based on GSI records, there is significant depth of overburden on site, and as such there is significant attenuation capacity within the overburden.</p> <p>There are no surface water bodies within the vicinity of the site nor is there any existing discharge from the site to the municipal stormwater system. As such, there is no viable pathway for possible contamination to exit the site and enter the Ballywater River catchment and ultimately flow into the Irish Sea</p>
<p>Boyne Estuary SPA [004080] 1.94km (SE)</p>	<ul style="list-style-type: none"> ▪ Shelduck (<i>Tadorna tadorna</i>)* ▪ Oystercatcher (<i>Haematopus ostralegus</i>)* ▪ Golden Plover (<i>Pluvialis apricaria</i>)* ▪ Grey Plover (<i>Pluvialis squatarola</i>)* ▪ Lapwing (<i>Vanellus vanellus</i>)* ▪ Knot (<i>Calidris canutus</i>)* ▪ Sanderling (<i>Calidris alba</i>)* ▪ Black-tailed Godwit (<i>Limosa limosa</i>)* ▪ Redshank (<i>Tringa totanus</i>)* ▪ Turnstone (<i>Arenaria interpres</i>)* ▪ Little Tern (<i>Sterna albifrons</i>)** ▪ Wetland and Waterbirds [A999] <p>* denotes wintering birds at Boyne Estuary. ** denotes breeding birds at Boyne Estuary.</p> <p>Source: NPWS. (2013). <i>Conservation Objectives: Boyne Estuary SPA [004080]</i>. Version 1. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht.</p>	<p>Due to distance and the absence of any hydrological or other potential impact pathways between the proposed development and the European site, there are no potential ecological impacts.</p>

TABLE 1. NATURE CONSERVATION SITES WITHIN 15 KM OF TERMONFECKIN PLAYGROUND SITE, BALTRAY ROAD, TERMONFECKIN, CO. LOUTH, (INFORMATION OBTAINED FROM WWW.NPWS.IE IN AUGUST 2023)

SITE NAME, SITE CODE, DISTANCE AND DIRECTION FROM SITE	SITE OR ORGANISM NAME AND/OR CODE GIVEN ACCORDING TO INTERPRETATION MANUAL OF EUROPEAN UNION HABITATS	THE POTENTIAL SOURCE-PATHWAY-RECEPTOR LINKS BETWEEN COLLON PLAYGROUND SITE AND THE ECOLOGICALLY DESIGNATED SITE
Special Protection Areas (SPA)		
River Nanny Estuary & Shore SPA [004458] 8.1km (S)	<ul style="list-style-type: none"> ▪ Oystercatcher <i>Haematopus ostralegus</i> wintering ▪ Ringed Plover <i>Charadrius hiaticula</i> wintering ▪ Golden Plover <i>Pluvialis apricaria</i> wintering ▪ Knot <i>Calidris canutus</i> wintering ▪ Sanderling <i>Calidris alba</i> wintering ▪ Herring Gull <i>Larus argentatus</i> wintering ▪ Wetlands <p>Source: NPWS. (2022). <i>Conservation Objectives: River Nanny Estuary & Shore SPA [004458]</i>. Version 1.0. National Parks and Wildlife Service, Department of Housing, Local Government and Heritage.</p>	Due to distance and the absence of any hydrological or other potential impact pathways between the proposed development and the European site, there are no potential ecological impacts.
River Boyne and River Blackwater SPA [004232] 9.5km (SW)	<ul style="list-style-type: none"> ▪ Kingfisher (<i>Alcedo atthis</i>)** <p>** denotes breeding birds at River Boyne and River Blackwater.</p> <p>Source: NPWS. (2022). <i>Conservation Objectives for River Boyne and River Blackwater SPA [004232]</i>. First Order Site-specific Conservation Objectives Version 1.0. Department of Housing, Local Government and Heritage.</p>	Due to distance and the absence of any hydrological or other potential impact pathways between the proposed development and the European site, there are no potential ecological impacts.

TABLE 1. NATURE CONSERVATION SITES WITHIN 15 KM OF TERMONFECKIN PLAYGROUND SITE, BALTRAY ROAD, TERMONFECKIN, CO. LOUTH, (INFORMATION OBTAINED FROM WWW.NPWS.IE IN AUGUST 2023) (CONTINUED)

SITE NAME, SITE CODE, DISTANCE AND DIRECTION FROM SITE	SITE OR ORGANISM NAME AND/OR CODE GIVEN ACCORDING TO INTERPRETATION MANUAL OF EUROPEAN UNION HABITATS	THE POTENTIAL SOURCE-PATHWAY-RECEPTOR LINKS BETWEEN COLLON PLAYGROUND SITE AND THE ECOLOGICALLY DESIGNATED SITE
Special Protection Areas (SPA)		
<p>Dundalk Bay SPA [004026] 11.95km (N)</p>	<ul style="list-style-type: none"> ▪ Curlew (<i>Numenius arquata</i>)* ▪ Redshank (<i>Tringa totanus</i>)* ▪ Black-Headed Gull (<i>Chroicocephalus ridibundus</i>)* ▪ Common Gull (<i>Larus canus</i>)* ▪ Herring Gull (<i>Larus argentatus</i>)* ▪ Great Crested Grebe (<i>Podiceps cristatus</i>)* ▪ Greylag Goose (<i>Anser anser</i>)* ▪ Light-Bellied Brent Goose (<i>Branta berniclahrota</i>)* ▪ Pintail (<i>Anas acuta</i>)* ▪ Common Scoter (<i>Melanitta nigra</i>)* ▪ Red-Breasted Merganser (<i>Mergus serrator</i>)* ▪ Oystercatcher (<i>Haematopus ostralegus</i>)* ▪ Ringed Plover (<i>Charadrius hiaticula</i>)* ▪ Golden Plover (<i>Pluvialis apricaria</i>)* ▪ Grey Plover (<i>Pluvialis squatarola</i>)* ▪ Lapwing (<i>Vanellus vanellus</i>)* ▪ Knot (<i>Calidris canutus</i>)* ▪ Dunlin (<i>Calidris alpina</i>)* ▪ Black-Tailed Godwit (<i>Limosa limosa</i>)* ▪ Bar-Tailed Godwit (<i>Limosa lapponica</i>)* ▪ Shelduck (<i>Tadorna tadorna</i>)* ▪ Teal (<i>Anas crecca</i>)* ▪ Mallard (<i>Anas platyrhynchos</i>)* ▪ Wetlands & Waterbirds [A999] <p>* denotes wintering birds at Dundalk Bay.</p> <p>Source: NPWS. (2011). <i>Conservation Objectives: Dundalk Bay SPA [004026]</i>. Version 1.0. Department of Culture, Heritage and the Gaeltacht.</p>	<p>Due to distance and the absence of any hydrological or other potential impact pathways between the proposed development and the European site, there are no potential ecological impacts.</p>

TABLE 1. NATURE CONSERVATION SITES WITHIN 15 KM OF TERMONFECKIN PLAYGROUND SITE, BALTRAY ROAD, TERMONFECKIN, CO. LOUTH, (INFORMATION OBTAINED FROM WWW.NPWS.IE IN AUGUST 2023)

SITE NAME, SITE CODE, DISTANCE AND DIRECTION FROM SITE	SITE OR ORGANISM NAME AND/OR CODE GIVEN ACCORDING TO INTERPRETATION MANUAL OF EUROPEAN UNION HABITATS	THE POTENTIAL SOURCE-PATHWAY-RECEPTOR LINKS BETWEEN THE PROPOSED WAREHOUSE AND THE ECOLOGICALLY DESIGNATED SITE
Special Areas of Conservation (SAC)		
<p>Boyne Coast and Estuary SAC [001957] 1.57km (E)</p>	<ul style="list-style-type: none"> ▪ [1130] Estuaries ▪ [1140] Mudflats and sandflats not covered by seawater at low tide ▪ [1310] Salicornia and other annuals colonizing mud and sand ▪ [1330] Atlantic salt meadows (<i>Glauco-Puccinellietalia maritima</i>) ▪ [1410] Mediterranean salt meadows (<i>Juncetalia maritimi</i>) ▪ [2110] Embryonic shifting dunes ▪ [2120] Shifting dunes along the shoreline with <i>Ammophila arenaria</i> ('white dunes') ▪ [2130] Fixed coastal dunes with herbaceous vegetation ('grey dunes')* <p>* denotes a priority habitat under the Habitats Directive.</p> <p>Source: NPWS. (2021). <i>Conservation Objectives: River Boyne and River Blackwater SAC [002299]</i>. Version 1.0. National Parks and Wildlife Service, Department of Housing, Local Government and Heritage.</p>	<p>There will be no contaminated stormwater generated during the construction phase or the operational phase of the development and there are no proposals to generate a point discharge from the site. The material used for the ground covering will not generate leachate. As such, there is effectively no source of contamination which can migrate off site.</p> <p>The ground covering will facilitate the percolation of rainfall through the material into the underlying subsoil. As such, any stormwater generated on site will be free of contamination and will discharge to ground. Based on GSI records, there is significant depth of overburden on site, and as such there is significant attenuation capacity within the overburden.</p> <p>There are no surface water bodies within the vicinity of the site nor is there any existing discharge from the site to the municipal stormwater system. As such, there is no viable pathway for possible contamination to exit the site and enter the Ballywater River catchment and ultimately flow into the Irish Sea</p>
<p>Clogherhead SAC [001459] 4.2km (E)</p>	<ul style="list-style-type: none"> ▪ [1230] Vegetated sea cliffs of the Atlantic and Baltic coasts ▪ [4030] European dry heaths <p>Source: NPWS. (2017). <i>Conservation Objectives: Clogherhead SAC [001459]</i>. Version 1.0. National Parks and Wildlife Service, Department of Housing, Local Government and Heritage.</p>	<p>Due to distance and the absence of any hydrological or other potential impact pathways between the proposed development and the European site, there are no potential ecological impacts.</p>
<p>River Boyne and River Blackwater SAC [002299] 4.75km (SE)</p>	<ul style="list-style-type: none"> ▪ [1099] River Lamprey (<i>Lampetra fluviatilis</i>) ▪ [1106] Salmon (<i>Salmo salar</i>) ▪ [1355] Otter (<i>Lutra lutra</i>) ▪ [7230] Alkaline fens ▪ [91E0] Alluvial forests with <i>Alnus glutinosa</i> and <i>Fraxinus excelsior</i> (<i>Alno-Padion</i>, <i>Alnion incanae</i>, <i>Salicion albae</i>)* <p>* denotes a priority habitat under the Habitats Directive.</p> <p>Source: NPWS. (2021). <i>Conservation Objectives: River Boyne and River Blackwater SAC [002299]</i>. Version 1.0. National Parks and Wildlife Service, Department of Housing, Local Government and Heritage.</p>	<p>Due to distance and the absence of any hydrological or other potential impact pathways between the proposed development and the European site, there are no potential ecological impacts.</p>

TABLE 1. NATURE CONSERVATION SITES WITHIN 15 KM OF COLLON PLAYGROUND SITE, ARDEE STREET, COLLON, DROGHEDA, CO. LOUTH, (INFORMATION OBTAINED FROM WWW.NPWS.IE IN JULY 2023) (CONTINUED)

SITE NAME, SITE CODE, DISTANCE AND DIRECTION FROM SITE	SITE OR ORGANISM NAME AND/OR CODE GIVEN ACCORDING TO INTERPRETATION MANUAL OF EUROPEAN UNION HABITATS	THE POTENTIAL SOURCE-PATHWAY-RECEPTOR LINKS BETWEEN THE PROPOSED WAREHOUSE AND THE ECOLOGICALLY DESIGNATED SITE
Special Areas of Conservation (SAC)		
<p>Dundalk Bay SAC [000455] 11.95km (NE)</p>	<ul style="list-style-type: none"> ▪ [1130] Estuaries ▪ [1220] Perennial vegetation of stony banks ▪ [1410] Mediterranean salt meadows (<i>Juncetalia maritimi</i>) ▪ [1310] <i>Salicornia</i> and other annuals colonizing mud and sand ▪ [1140] Mudflats and sandflats not covered by seawater at low tide ▪ [1330] Atlantic salt meadows (<i>Glauco-Puccinellietalia maritimae</i>) <p>Source: NPWS. (2011). <i>Conservation Objectives: Dundalk Bay SAC [000455]</i>. Version 1.0. Department of Culture, Heritage and the Gaeltacht.</p>	<p>Due to distance and the absence of any hydrological or other potential impact pathways between the proposed development and the European site, there are no potential ecological impacts.</p>

2.3 ArcGIS Pro & Autocad Mapping

GIS maps of different scales were produced using the ArcGIS Pro computer programme. These maps were used to identify the proximity of the site to Special Areas of Conservation (SACs) and Special Protected Areas (SPAs), and to surrounding surface waters. SAC and SPA data was imported from NPWS and added as a layer (NPWS, 2023). Orthomosaics developed through drone photogrammetric surveys were imported into ArcGIS Pro and Autocad 2017 added as a map surface layer. The site boundary was identified and outlined within this map. A 15km buffer was created around a centre point within the site boundary.

2.4 Reservoir, Tree Survey & Habitat Survey

2.4.1 Disused Reservoir Inspection

The reservoir's dimensions are as follows, width 8m, length 8m and height 2.5m (see Plate 9 below). It is estimated to have a volume of approximately 160m³. It is supported by 6 concrete columns. It is understood that the reservoir is now empty and as such, the reservoir presents a suitable bat roost provided suitable openings exist to its interior. A comprehensive inspection was carried out on the on-site water reservoir to identify any apertures or openings where bats could enter. The bottom and side walls of the reservoir were photographed with a zoom camera and the ground directly under the reservoir was inspected to determine if there was any evidence of bats (e.g., bat droppings, urine staining, grease marks (oily secretions from glands present on stonework), bat pupae and claw marks, etc.).



Plate 9. Ground photograph taken during the inspection of the underside and side walls of reservoir for evidence of bats

2.4.2 Tree Survey

A comprehensive survey of all trees in the site was carried out using ArcGIS Survey123 software installed on a GPS enabled Samsung Galaxy Tab Active 3 All Weather tablet. One of the primary objectives of the tree survey was to determine the suitability of the trees within the site as bat roosts. This process involved the logging of each of the 29 trees within the site with each tree assigned a unique identification number. It involved the digital photographing and geotagging of each tree, the recording of tree species, height (m), tree condition, ivy infestation, ash dieback if the tree species was ash and other relevant information (e.g., presence of dead wood, suitable cavities within dead wood for bat roosts, etc). The results of the tree survey provided a foundation for conducting bird and bat surveys. It allowed the identification of possible trees of high importance for wildlife that could potentially be impacted by the development of the proposed playground.

The first phase of the tree survey involved mapping each of the individual trees on the ground aided by field sheets prepared from orthomosaics derived from the drone survey. This facilitated the counting and positioning of each tree within the site. The results of the tree survey are presented and discussed in the following section, Section 3.8.

2.4.3 Habitat Survey

A site-based habitat assessment was carried out on the 6th July, 2023. The habitat survey was carried out following the Heritage Council’s *Best Practice Guidance (Smith et al., 2011)*. Habitats were classified to Level 3 of the Heritage Council’s classification (*Fossitt, 2000*), and also according to the *Habitats Directive types (European Commission, 2013)* where appropriate. In addition to habitat mapping, notes on plant species composition, structure and management were collected. Plant species were assigned a DAFOR abundance rating within each habitat. The DAFOR scale is presented in the following table, Table 2 which was modified from *Smith et al. (2011) Habitat Mapping Guidelines*.

Table 2. DAFOR Abundance Rating

RATING	DESCRIPTION
Dominant (D)	A Dominant species generally covers more than two-thirds of the habitat.
Abundant (A)	Abundant species typically cover between one-third and two-thirds of the habitat. A rule of thumb for evaluating Abundant species is ‘everywhere you look you see lots’.
Frequent (F)	Commonly encountered species seen when walking through the habitat. ‘Everywhere you look you see some’.
Occasional (O)	Occasional species generally have relatively low frequency and low cover. However, they do not have to be searched for to be found.
Rare (R)	Rare species are those that are only found once or a very few times during the survey, depending on the size of the habitat. Species cover is also very low where Rare species are found.
Locally Abundant (LA)	Used where overall occurrence of species is either occasional or rare, but species is abundant over a small area.

Plant nomenclature follows Stace (2010). Plant species identification was assisted by the PictureThis plant identification application with 98% accuracy (PictureThis, 2023). The identification and classification of these plants was also assisted by databases provided by the NBDC, the EPA, Teagasc, Biodiversity Ireland and the NPWS.

2.4.4 Mammal Survey

A dedicated large mammal survey was carried out during the site visits using the techniques as prescribed in *Ecological Survey Techniques for Protected Flora and Fauna (NRA, 2008)*. This entailed searching for and identification of signs, tracks, and droppings of various mammals (including otter, badger, pine marten, Irish stoat, Irish hare, red squirrel, hedgehog and pygmy shrew along with non-native species such as, American mink, grey squirrel and rabbit) within the site. Badger setts, trails and foraging areas will be looked for along earthen banks, hedgerows, etc within the property.

2.4.5 Bat Survey

The general aims of a bat survey are as follows:

- Collect robust data following good practice guidelines to allow an assessment of the potential impacts of the proposed project on local bat populations, both on and off-site (where possible);
- Facilitate the design of mitigation, enhancement and monitoring strategies for local bat populations recorded;
- Provide baseline information with which the results of post-construction monitoring surveys can be compared to, where appropriate;
- Provide information to enable NPWS and planning authorities to reach robust decisions with definitive required outcomes;
- Assist clients in meeting their statutory obligations; and
- Facilitate the conservation of local bat populations.

As stated previously, during the tree survey, the conditions and characteristics of each tree was recorded, and each tree was evaluated in respect to habitat suitability for bat roosts. Potential bat roost features (PRFs) include rot/knot/woodpecker holes, cracks and splits in stems and branches, cavities from branch tearing, detached bark, ivy growth, gaps between overlapping stems or branches and other hollows. Trees identified as Potential Bat Roosts (PBRs) were inspected during the daytime, where possible, for evidence of bat usage. Evidence of bat usage is in the form of actual bats (visible or audible), bat droppings, urine staining, grease marks (oily secretions from glands present on stonework), bat pupae and claw marks.

Other potential roosts such as built structures, potential foraging habitat and commuting habitat on or surrounding the site were also noted. The bat survey consisted of three elements – a desktop review and consultation with Bat Conservation Ireland, an inspection of trees within the site (previously discussed) and a bat activity detector survey.

Surveys are comprised of many different types and may differ from site to site depending on the goals of the survey. Given the nature of the woodland, it was concluded that an ‘*Emergence (Dusk) Survey*’ followed by a ‘*Walking Transect Survey*’ would be the best method to determine if bat roosts were present within the woodland. This would be followed up at a later date by a ‘*Emergence/Dawn Bat Survey*’. A Dusk Emergence and Walking Transect Surveys was carried out 10 minutes before sunset and 90 minutes afterwards, while a Dawn Survey was completed 90 minutes prior to sunrise and 10 minutes post. A preliminary bat survey was carried out to determine the route and design for the subsequent more detailed surveys. Bad weather conditions may deter bats from emerging from roosts at all, or it may cause them to emerge later for shorter periods and/or utilise alternate commuting routes and foraging areas. Therefore, for accurate and comparable results as outlined by Bat Conservation Trust, bat surveys should be carried out at optimal weather conditions; when there is no precipitation, no strong winds above 5.4 m/s, and when the temperature is at or above 10°C. The following table, Table 3 details the weather conditions for each bat survey.

3.4.4.1 Dusk Emergence & Walking Transect Surveys

Following a weather forecast for dry calm weather over 10°C, on the 11th July, 2023, the site was visited at 21:45pm by Leanne Tuohy, Project Ecologist and Padraic Mulroy, Managing Director of Mulroy Environmental Ltd. A dusk emergence survey was first carried out to identify and record bats leaving their possible roosts. This bat survey was carried out using a *Wildlife Acoustics Echo Meter Touch2 Pro* (Android) ultrasonic module connected to a Samsung Galaxy Tab Active 3 tablet, on which the Echo Meter Touch2 software produced by Wildlife Acoustics was downloaded. Prior to the commencement of recording, the surveyors positioned themselves directly under the disused reservoir. Although no suitable openings for bats were identified, the reservoir has a high level of suitability as a bat roost. Of the 6 concrete supporting columns, 2 were found to have significant growths of ivy which may provide suitable cavities for bats.

In addition, a number of the trees along the boundaries of the site were found to have ivy infestations and were deemed to be suitable as a bat roosts.

Recording commenced at approximately 21:45pm with sunset occurring at 21:52pm. Following a period of approximately 30 minutes on site and following sunset, the recording continued into a ‘*Walking Transect*’ and the surveyors exited the site and walked along the eastern side of the R167 Regional Road in a southerly direction for approximately 180m. The purpose of this survey was to identify possible bat foraging habitats or commuting routes. The route of this Walking Transect had been pre-determined.

The surveyors then crossed the R167 and entered the woodland to the south of the site and proceeded to walk through the forest in a northerly direction back towards the site. Having reached the woodland immediately to the south of the site and surveyed there for approximately 30 minutes, the surveyors proceeded in an easterly direction. The surveyors then proceeded to re-trace their steps back to the southwestern boundary of the woodland following which they exited the site.

Table 3. Weather Conditions during Dusk/Emergency Bat Monitoring Survey on the 11th July, 2023 and Dawn Bat Monitoring Survey on the 13th July 2023

Date	Sunset/rise (IST)	Start time (IST)	Precipitation	Min Temperature (°C)	Max Temperature (°C)	Mean Wind (m/s)
11/07/2023	21:52	21:40	None	13	20	4.2
13/07/2023	05:11	04:30	None	13	19	2.8

Having exited the woodland, the surveyors proceeded to retrace their steps back along the R167 towards the site and then to the Church of the Immaculate Conception where the woods to the west of the church were surveyed (which are approximately 110m to the north of the site) for approximately 10 minutes.

Following this the surveyors proceeded along the R167 passing the Termon River housing estate on the western side of the R167 until they reached an entrance to a residence located on the northern side of the Ballywater River. This property is accessed by a small bridge crossing over the Ballywater River. The surveyors surveyed at this bridge for approximately 10 minutes.

Following this, the surveyors proceeded to the R167/R166 traffic junction where the surveyors turned left and north towards the Termonfeckin Bridge and a smaller pedestrian bridge to the east of the main bridge. These bridges traverse the Ballywater River which runs west to east towards the Boye Coast and Estuary SAC located approximately 1.5km to the east of the site. For health and safety reasons, the pedestrian bridge was deemed safer for surveying purposes. The surveyors surveyed at this bridge for approximately 30 minutes.

Following this, the surveyors proceeded back towards the site on the western side of the R167 until they reached the Church of the Immaculate Conception. This survey was completed at 11:45pm and the duration of the recording was approximately 146 minutes long. The transect route can be seen in Figure 12.

The Echo Meter Touch2 Pro was set to continual recording for the entire survey. During the recording, the route of the transect is accurately recorded and traced with GPS software and sound files are recorded continually, while the automatic identification is set to detect Ireland's known bat species. At each location where an echolocation call was identified, the Echo Meter Touch2 would identify the number of sound pulses that are recorded which match it. In some cases, a secondary species with identical calls would be identified and matched with a portion of these pulses. The species identified, the GPS location, and the time was recorded during these surveys. A KML file containing this data, along with each bat vocalisation recording was downloaded and mapped within Google Earth and ArcGIS Pro. Any visual indicators or sightings of bats were noted throughout the survey,

3.4.4.2 Dawn Walking Transect Surveys

A follow up 'Dawn Bat Survey' was undertaken on the 13th July 2023. Although no bat roosts were determined during the original dusk survey, either within the disused reservoir or in the trees within the site, for reasons of thoroughness, the reservoir and those trees that were deemed to be 'Potential Bat Roosts' were inspected again at dawn to determine if bats were returning to them after bouts of foraging. The Echo Meter Touch2 Pro was utilised to detect bat species via their echolocation calls or chattering noises. The bat species identified, the location and time were recorded during the survey. Any visual indicators or sightings of bats was also noted. Bats usually return to their roosts c. 90 minutes prior to sunrise and 10 minutes post sunrise. The survey began at approximately 04:30am and

was completed at 5:30am. Sunrise commenced at 05:11am. The conditions were optimal for this survey, as there was no precipitation, little to no cloud cover, and light winds as detailed in Table 3. The duration of the recording was approximately 80 minutes long. The survey began within the site underneath the reservoir water tank, and a transect survey was completed within the site boundary. The transect then continued northwards along the R167 to the Termonfeckin bridge, and then south-east along the R166 road past the Termon River estate. The surveyors continued through the adjacent pedestrian church gate and completed the survey at the woods to the west of the church.

3.4.5 Bird Survey

A dawn bird song survey was carried out on the hedgerows and trees located along a transect duplicated from previous bat survey transects on the 13th July 2023. This recording began at 04:30am and had a duration of 30 minutes. This survey was carried out using Cornell Lab Merlin Bird ID software application installed on a Samsung Galaxy Tab Active 3 tablet.

3 SCREENING

Screening involves the following:

1. Description of the surrounding area, plan showing the elements of retention and proposed structures, the local site or plan area characteristics and its existing/proposed effluent discharge(s);
2. Identification of relevant Natura 2000 sites, and compilation of information on their qualifying interests and conservation objectives;
3. Assessment of likely effects (direct, indirect and cumulative) through the completion of a desk study or field survey; and
4. Screening statement including conclusions

3.1 Site History

A review of 6-inch historical Ordnance Survey mapping indicates that the site was located on the southwestern corner of an agricultural field which was the site of a former monastery. The present woodland is evident on the mapping and appears to have been part of the Newtown House Demense which was originally constructed around 1780 (see Plate 10 below).

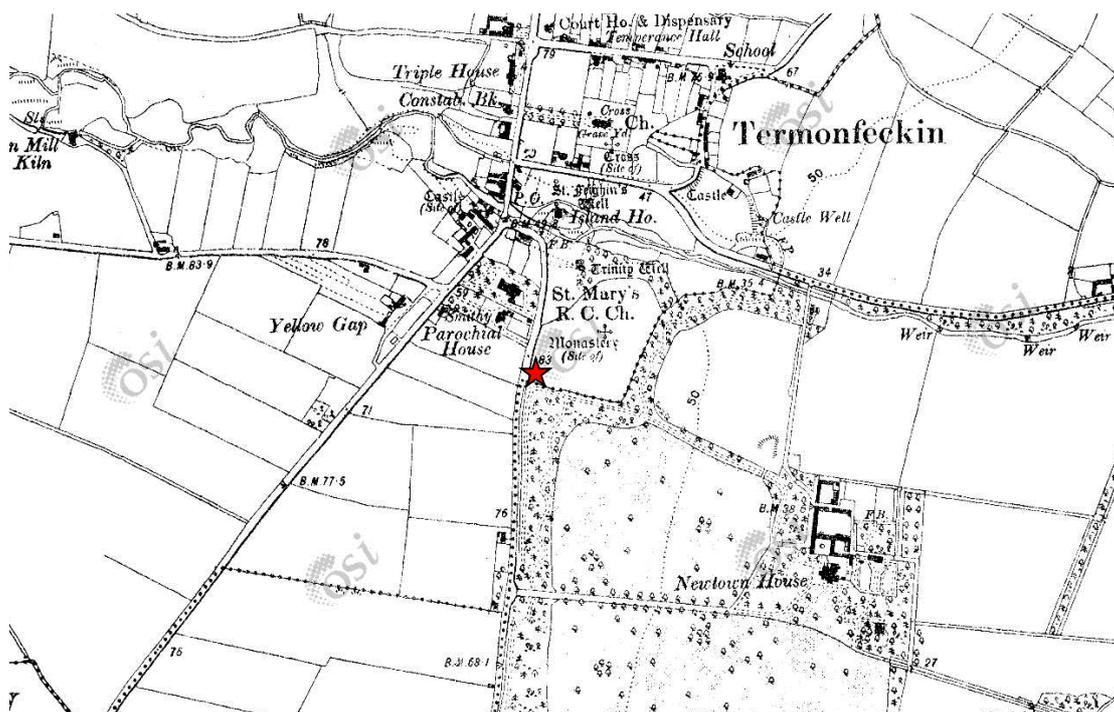


Plate 10. Extract of last Edition of 6-inch historical OS Mapping showing historical brick works to the northwest of the site (note red star indicates the approximate location of the site)

A review of 25-inch historical Ordnance Survey mapping indicates that the site remained unaltered. An inspection of the mapping for the woodland to the south and east of the site indicates the presence of various pathways indicating that it was used by the estate for walking and leisure (see following Plate 11).

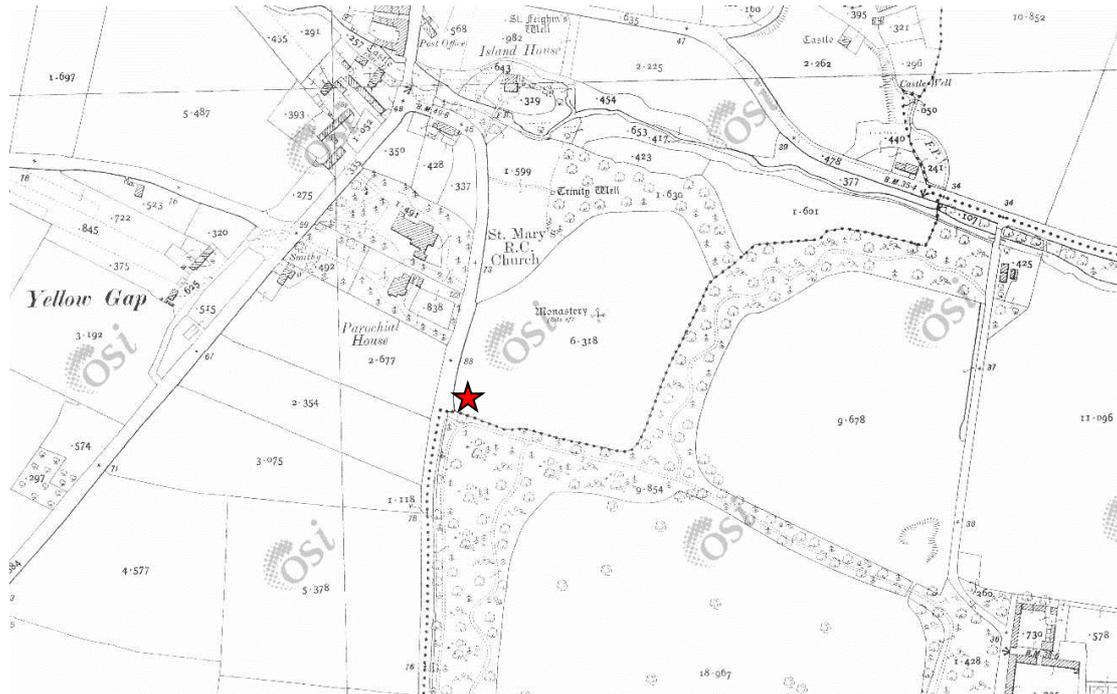


Plate 11. Extract of last Edition of 25-inch historical OS Mapping (note red star indicates the approximate location of the site)

It is understood that the reservoir was built on the site during the 1950s.

3.2 Closest Designated Protected Sites

As stated previously, the site is approximately 1.57km to the west of the Boyne Coast and Estuary Special Area of Conservation (SAC) (No. 001957) and 1.57km to the west of the Northwest Irish Sea Candidate Protected Area (SPA) (No. 004236) (see Figures 1 to 5, Table 1 & Plate 8 following).

3.3 Topography

The topography of the ground within the site is relatively level with an approximately elevation of 23mAOD. The elevation of the top (i.e., the roof) of the reservoir appears to be approximately 34.27mAOD. The elevation of the ground beneath the reservoir is approximately 23mAOD. Therefore, the reservoir appears to have a height of approximately 11m (see following Plate 12).

3.4 Existing Municipal Foulwater & Stormwater Drainage

A foulwater and stormwater drainage scheme which serves Termonfeckin are located on the R167 Regional Road (known locally as the Baltray Road) to the west of the site.

There is no existing stormwater discharge from the site with the existing gravel and soil surface allowing stormwater to dissipate through the overburden. As stated in Section 1.2 of this report, there are no requirements to discharge stormwater from the proposed playground to the existing municipal stormwater network.

It should be noted that there are no surface water bodies or land drains within the site or along the perimeter of the site. As such, there are no stormwater ‘point’ discharges from the site to a surface water catchment.

3.5 Disused Well & Reservoir

A disused water abstraction well is located on the northern boundary of the site. The borehole and rising main are located in a 1m², concrete block lined chamber approximately 0.9 m deep (see Plate 12 below and Figure 10). The top of the chamber is flush with ground level and is covered by a securely-fitting and bolted metal cover.



Plate 12. Photograph extract from report, *Groundwater Protection Establishment of Groundwater Source Protection Zones Termonfeckin Water Supply Scheme Termonfeckin Borehole Groundwater Source Protection Zones November 2011 Revision: E*

The reservoir’s dimensions appear to be approximately 8m x 8m x 2.5m (i.e., a volume of 160m³). The elevation of the top (i.e., the roof) of the reservoir appears to be approximately 34.27mAOD. The elevation of the ground beneath the reservoir is approximately 23mAOD. Therefore, the reservoir appears to have a height of approximately 11m (see Plate 13 following).

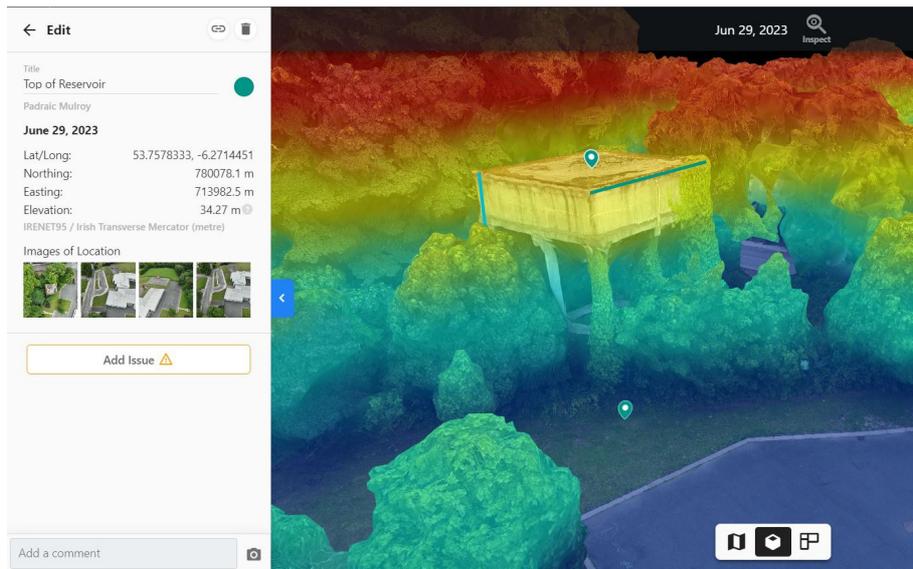


Plate 13. Extract of Dronedeploy 3D Model of Reservoir showing elevation of roof of reservoir

The site is enclosed by a 1.5m high post and wire-mesh fence with a gate onto the R167. The ground surface within the compound comprises hardcore at the borehole, with grass and sycamore saplings beyond.

3.6 Site Hydrology

3.6.1 Regional Hydrology

The Termonfeckin River, which is known locally as the Ballywater River, is located approximately 245m to the north of the site (see Figures 5 & 6).

The site is located within the Newry, Fane, Glyde and Dee Water Framework Directive (WFD) River Basin District (RBD). In Ireland, each RBD is sub-divided into a number of Water Management Units (WMU) (see Appendix 1). The site is in the WFD Subcatchment Burren_SC_010. Beneath this Subcatchment the site is located within WFD River Sub Basin Termonfeckin_020 (see Appendix 1 for hydrological desk study information).

3.6.2 Local Hydrology

Following a comprehensive desk study of historical and current hydrological mapping and on-site and surrounding area inspections, it was concluded that there are no surface water bodies and/or land drains in the vicinity of the site (see Appendix 1). Rainwater currently falling on the site appears to dissipate into the overburden.

No evidence of surface water ponding was observed onsite during an inspection by Mulroy Environmental.

The land surrounding the site is generally low-lying, ranging between 0-30 mAOD. The ground elevation decreases from west to east, with the coastal highwater mark located 1.5 km to the east. Higher ground (up to 90 mAOD) is found to the north and northwest of the site in the Almondstown area.

Drainage is generally towards the sea to the east. The Ballywater River flows west to east approximately 200m north of the source, and occupies a steep-sided, flat-bottomed valley. To the southwest of the source, streams and field drains drain south-eastwards towards Baltray, and to its east they drain northwards into the Ballywater River.

3.7 Site Geology

3.7.1 Introduction

This section addresses the soil and geology aspects of the environment and assesses the impacts of the proposed development on the existing soil, subsoil and bedrock environments. This section was prepared following a site audit and desk study work. Relevant documents that were accessed comprised geological maps and publications by the National Soil Survey of Ireland and the Geological Survey of Ireland (GSI).

3.7.2 Soil

3.7.2.1 Soil (Top Horizon)

The formation of topsoil is known as the ‘pedogenic’ process. Reference to the General Soil Map of Ireland, published by An Foras Talúntais (1980) indicates that the predominant or principal soil type in the vicinity of the site is Soil Association No. 11, *Gleys* (90%) with secondary soils as and *Brown Earth* (10%).

A National Soil Mapping Project carried out jointly by the EPA and Teagasc have identified a number of soil types within the footprint of the site. Soil type *AminPD - Mineral poorly drained (Mainly acidic)* (which is part of the *Surface water Gleys, Ground water Gleys* soil group) was identified in the under the full footprint of the site (see Plate 14 below). A linear strip of *A – Alluvium* is located running along the route of the Ballywater River to the north of the site.

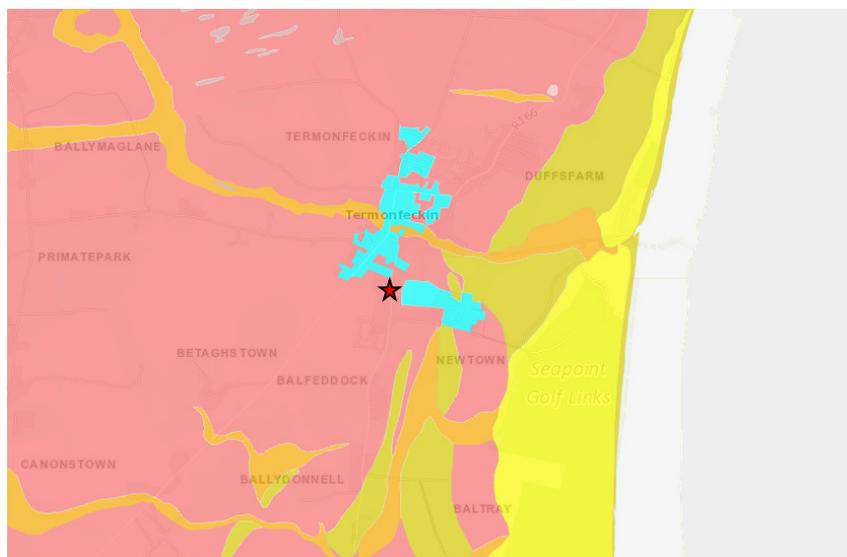


Plate 14. Extract of GSI Mapping showing soil types identified within the vicinity of the site

The land to the north and east of the site are as expected classed as *URBAN* which is made ground. Based on Mulroy Environmental’s local knowledge of the area, the general classification for the area is considered appropriate for the site (see Appendix 1).

3.7.2.2 Subsoil (Quaternary) Geology

The origin of the subsoil material in this region is associated with the movement and deposition from glaciers during the last Ice Age. The ice sheets ground down the underlying bedrock, breaking the rock and grinding it to small sizes ranging from clays to boulders. The powerful erosive force of these ice sheets are considered to have moulded/sculpted the landscape in the area, with glacial features evident in the area. Glacial deposits in the area consist of tills, which were deposited at the base of moving glaciers, and to a lesser extent fluvio-glacial sand and gravels, which were deposited by glacial meltwaters.

The National Soil Mapping Project carried out jointly by the EPA, GSI and Teagasc have identified several subsoil types in the vicinity of the site. These include *raised beach sands and gravels (MGs)*, *tills (IrSTLPSsS, TLPSsS)*, *alluvium (A)*, *beach sands (Mbs)* and *windblown sands (Ws)*. A significant area of built ground (MADE) also occurs to the north of the source. The main subsoil type on the footprint of the site is *MGs - raised beach sands and gravels* (see Plate 15 below).

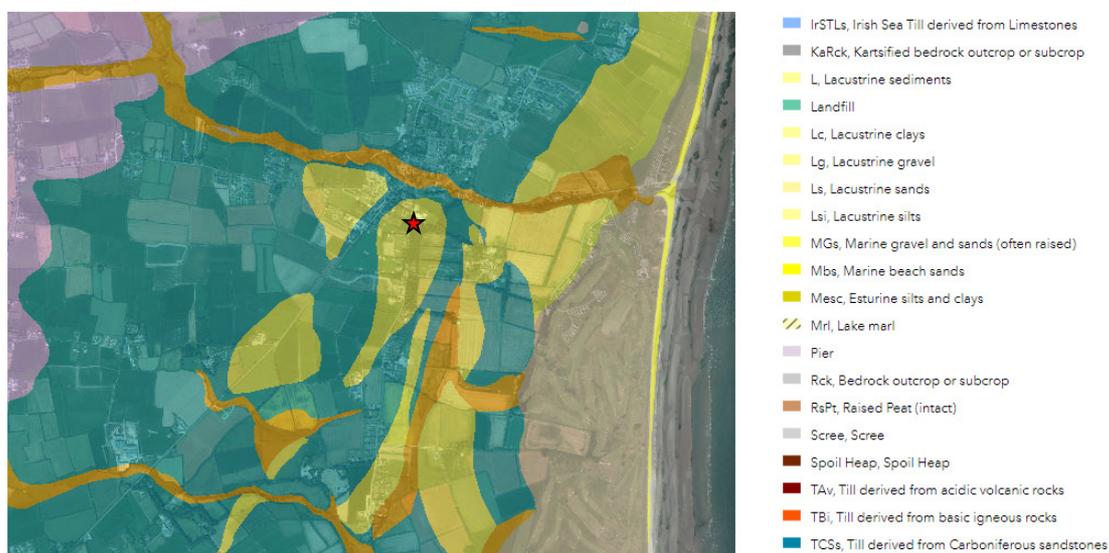


Plate 15. Extract of GSI Mapping showing subsoil types identified within the vicinity of the site

3.7.2.3 Site Specific Soil & Subsoil Detail

No site-specific information is available on the site's soil and/or subsoil.

3.7.3 Geology

3.7.3.1 Regional Bedrock Geology

Based on the Geological Survey of Ireland (GSI Bedrock 1:100,000 scale digital geological map series) the bedrock formation for the site is described as the Tullyallen Formation which is comprised of Dinantian upper impure limestones (DUIL) (see Appendix 1).

3.7.3.2 On-site Bedrock Geology

A review of GSI online records, indicates that there are a number GSI borehole records within the vicinity of the site with depth to bedrock information. A review of the borehole log for on-site water abstraction well indicates that a 6m thick surface cover of “clay and stones” is underlain by 9.8m of GRAVEL and SAND subsoil. The GRAVEL and SAND is likely to be of raised beach origin. The GRAVEL and SAND deposit is underlain by 22.8m of subsoil which is predominantly “clay and stone” and has a 5.5 m thick gravel lens close to the base. The “clay and stones” material is likely to be moderate to low permeability (possibly till). This suggests that the high permeability raised beach GRAVEL is underlain by greater than 10 m thickness of moderate to low permeability material.

3.7.4 Hydrogeology

3.7.4.1 General Hydrogeological Classification

The GSI have classified the bedrock aquifer underlying the site as *Rkd - Regionally Important Aquifer - Karstified (diffuse)* (see Appendix 1). Regionally Important Karst Aquifers would generally have ‘high’ or ‘moderate’ well yields.

3.7.4.2 Groundwater Vulnerability

Groundwater vulnerability is a term used to represent the intrinsic geological and hydrogeological characteristics that determine the ease with which groundwater may be contaminated by human activities. The vulnerability category is based on the relative ease with which infiltrating water and potential contaminants may reach groundwater in a vertical or sub-vertical direction. The permeability and thickness of the subsoil, which influences the attenuation capacity, are important elements in determining the vulnerability of groundwater. The Irish GSI has produced guidelines on groundwater vulnerability mapping that aim to represent the intrinsic geological and hydrogeological characteristics that determine how easily groundwater may be contaminated by human activities. Vulnerability depends on the quantity of contaminants that can reach the groundwater, the time taken by water to infiltrate to the water table and the attenuating capacity of the geological deposits through which the water travels. These factors are controlled by the types of subsoils that overlie the groundwater, the way in which the contaminants recharge the geological deposits (whether point or diffuse) and the unsaturated thickness of geological deposits from the point of contaminant discharge. For vulnerability assessments with regard to bedrock aquifers the relevant geological layer is the subsoil between the release point of contaminants and the top of the bedrock. Any unsaturated bedrock layer is not considered as it is assumed that bedrock has little or no attenuation capacity due to its fissure flow

characteristics. The 2011 report, *Establishment of Groundwater Source Protection Zones Termonfeckin Water Supply Scheme Termonfeckin Borehole* indicates that the site is characterised by ‘High Vulnerability saturated gravels, over low to moderate permeability clay, linked to bedrock aquifer by preferential pathways’. As such the entirety of the site has been given an aquifer vulnerability category rating of High (H) by the GSI (see Table 4 and Plate 16 following and Appendix 1).

Table 4. Groundwater Vulnerability Mapping Guidelines

Vulnerability rating	High permeability (sand/gravel)	Moderate permeability (sandy till)	Low permeability (clayey subsoil)
Extreme	0 – 3.0m	0-3.0 m	0 – 3.0m
High	>3.0m	3.0-10.0m	3.0 – 5.0m
Moderate	N/A	>10m	5.0 – 10.0m
Low	N/A	N/A	>10.0m



Plate 16. EPA/Teagasc/GSI Aquifer Vulnerability Mapping in proximity of site (note red star is in the centre of the site)

In addition, average annual recharge rates from rainfall in the vicinity of the site indicate that soil permeabilities are classed as high (see Appendix 1).

3.7.4.3 Groundwater Source Protection

The DoE-LG, EPA and GSI guidelines for Groundwater Protection Schemes allow for the combination of aquifer classification and vulnerability rating giving classifications of groundwater protection zones.

The purpose of these zones is to place a control on the activities practised within a zone and thus provide protection to any underlying groundwater resources. Using DoE-LG, EPA and GSI criteria and the aquifer classification and vulnerability categories defined for the site, a vulnerability *Rkd/H* ('*H*– *High*') would be assigned for the site.

3.8 Site Ecology

3.8.1 On-site Ecology

3.8.1.1 Overview

The proposed site for the playground is located in Termonfeckin village, within a site which is owned by Louth County Council. The location of the reservoir in the interior of the site and the northern corner of the site has been developed with infrastructure and hardstanding (i.e., gravel and aggregate, etc). The site is in a triangular shape and has a chain link fence on all 3 boundaries. Treelines exist on all 3 sides (see Figures 8-11).

The site was located on the southwestern corner of a field located at a former monastery and was most likely used as pastureland. This field was bordered to the south by a large woodland which was associated with the demesne estate to the east of the site.

3.8.1.2 Methodology

A site-based habitat assessment was carried out on the 6th July, 2023 of the entire site, which is approximately 555m² in area. The habitat survey was carried out following the Heritage Council's *Best Practice Guidance (Smith et al., 2011)*. Habitats were classified to Level 3 of the Heritage Council's classification (*Fossitt, 2000*), and also according to the *Habitats Directive types (European Commission, 2013)* where appropriate.

Prior to field survey, a desk study was undertaken to identify habitats through 2D drone photogrammetric survey imagery (i.e., orthomosaics) and 3D mapping. Habitat types and data sets obtained from National Parks and Wildlife Service (NPWS), the National Biodiversity Data Centre (NBDC), the Environmental Protection Agency (EPA), and other sources were employed to assist in the drafting of a habitat map in preparation of the field survey.

In addition to habitat mapping, notes on plant species composition, structure and management were collected. As stated in Section 2 on Methodology, plant species were assigned a DAFOR abundance rating within each habitat. The DAFOR scale is presented in the previous table, Table 2 which was modified from *Smith et al. (2011) Habitat Mapping Guidelines*. Plant nomenclature follows *Stace (2010)*. Plant species identification was assisted by the PictureThis plant identification application with 98% accuracy (PictureThis, 2023). The identification and classification of these plants was also assisted by databases provided by the NBDC, the EPA, Teagasc, Biodiversity Ireland and the NPWS.

Six GIS maps of different scales were produced using the ArcGIS computer programme. These maps were used to identify the proximity of the site to Special Areas of Conservation (SACs) and Special Protected Areas (SPAs), and to surrounding surface waters. SAC and SPA data was imported from NPWS and added as a layer (NPWS, 2023). An orthomosaic developed through a drone photogrammetric survey was imported into ArcGIS Pro and added as a map surface layer. The site

boundary was identified and outlined within this map. A 15km buffer was created around a centre point within the site boundary.

It is general practice when screening a plan or project for compliance with the Habitats Directive, to identify all Natura 2000 sites (SPAs & SACs) within the functional area of the plan/project itself and within 15km of the boundaries of the area the plan/project applies to. This approach is currently recommended in the Department of the Environmental, Heritage and Local Government's document Guidance for Planning Authorities and as a precautionary measure, to ensure that all potentially affected Natura 2000 sites are included in the screening process.

3.8.1.3 Habitat Descriptions

Six habitat types were found in the vicinity of the area proposed for the playground (see Figures 8, 9 & 10). These habitats included: *Buildings and Artificial Surfaces (BL3)*, *Broadleaved Woodland (WD1)*, *Treelines (WL2)*, *Scrub (WS1)*, *Grassland (GA2)* and *Spoil & Bare Ground (ED2)*. The footprint for the proposed playground will use the entire extent of the site (i.e., 555m²). A wire mesh fence divides the site from the school (i.e., Scoil Naomh Feichin) to the north and northeast of the site. A wire mesh fence also forms the western boundary to the R167 road to the west, and the southern boundary alongside from the broadleaved woodland to the south. A narrow patch of unvegetated spoiled ground immediately to the west of the wire mesh fence separates the site boundary from the R167 road. Within the site boundary, 3 No. habitat types were identified, as follows: *Treelines (WL2)*, *Buildings and Artificial Surfaces (BL3)* and *Scrub (WS1)*.

Treelines (WL2)

Treelines include narrow strips or lines of trees, less than 4 meters wide, which are usually planted as property or field boundary outlines. Typically, each tree is proportionally spaced apart. Tree species are often made up of non-native species such as Beech (*Fagus sylvatica*), Horse Chestnut (*Aesculus hippocastanum*), Lime trees (*Tilia spp.*) or conifers, etc. Tree lines were recorded along each boundary of the site (see Figures 8, 9 & 10). The species recorded within this treeline have been listed in a detailed table, Table 4. Each tree species recorded within the site boundary was assigned a unique number and the physical characteristics of each tree was assessed. Both native and non-native trees were recorded, with the most common species including sycamore (*Acer pseudoplatanus*), common ash (*Fraxinus excelsior*) and goat willow (*Salix caprea*). The common ash treeline which borders the west of the site along the R167 road will likely be removed to facilitate the creation of a site entrance to the proposed playground (i.e., Tree Numbers 15-18). Ash trees are native Irish species. However, they are not protected, and it is clear that each of these trees are impacted by varying degrees of ash dieback.

Both sycamore (*Acer pseudoplatanus*) and cherry laurel (*Prunus laurocerasus*) are invasive species in Ireland. The invasiveness of sycamore species has not yet been assessed; however, they are predicted to have a medium invasive impact. Cherry laurel are high impact invasive species, with an invasive score of 18. This toxic species outcompetes native flora and forms dense thickets which block sunlight from

Table 5. Plant Species identified in WS1- Scrub Habitat at Proposed Site for Playground, Termonfeckin, County Louth

Common Name	Taxon Name	Native/Alien/Invasive	Irish Status	Invasive Impact Score	DAFOR
Common holly	<i>Ilex aquifolium</i>	Native	Not protected	N/A	A
European dewberry	<i>Rubus caesius</i>	Native	Not protected	N/A	O
Hart's-tongue fern	<i>Asplenium scolopendrium</i>				O
Common velvet grass	<i>Holcus lanatus</i>	Native		N/A	O
Giant horsetail	<i>Equisetum telmateia</i>				R
Slender false brome	<i>Brachypodium sylvaticum</i>	Native		N/A	F
Ground ivy	<i>Glechoma hederacea</i>	Native		N/A	F
Rice cutgrass	<i>Leersia oryzoides</i>				F
Cleavers	<i>Galium aparine</i>	Native	Not protected	N/A	F
Bush vetch	<i>Vicia sepium</i>	Native	Not protected	N/A	R
Marsh woundwort	<i>Stachys palustris</i>	Native		N/A	O
Herb robert	<i>Geranium robertianum</i>	Native	Not protected	N/A	O
False oat-grass	<i>Arrhenatherum elatius</i>	Native	Not protected	N/A	O
Stinging nettle	<i>Urtica dioica</i>	Native	Not protected	N/A	F
Creeping buttercup	<i>Ranunculus repens</i>	Native	Not protected	N/A	F
Orchard grass	<i>Dactylis glomerata</i>	Native	Not protected	N/A	F
Elmleaf blackberry	<i>Rubus ulmifolius</i>	Native	Not protected	N/A	A
Bitter dock	<i>Rumex obtusifolius</i>	Invasive	Not assessed	Not assessed	O
English ivy	<i>Hedera helix</i>	Native	Not protected	N/A	A

Table 6. Results of Tree Survey carried out on Proposed Playground Site, Baltray Road, Termonfeckin, County Louth

Tree Number	Tree Species	Ash Dieback?	Tree condition	Height (m)	Ivy Infested?	Bat suitability?	Additional Comments?
1	Sycamore (Acer Psuedoplatanus)	-	Fair	7.5-8.5	Yes	No	Black and white markings on leaves
2	Sycamore (Acer Psuedoplatanus)	-	Fair	7.5-8.5	Yes	No	Black and white markings on leaves
3	Sycamore (Acer Psuedoplatanus)	-	Fair	7.5-8.5	Yes	No	Black and white markings on leaves
4	Sycamore (Acer Psuedoplatanus)	-	Fair	7.5-8.5	Yes	No	Heavy ivy infestation, Black and white markings on leaves
5	Ash (Fraxinus excelsior)	No	Good	6.5-7.5	No	No	
6	Norway Maple(Acer platanoides)	-	Good	5.5-6.5	No	No	On school grounds, outside fence
7	Sycamore (Acer Psuedoplatanus)	-	Good	5.5-6.5	No	No	
8	Sycamore (Acer Psuedoplatanus)	-	Good	5.5-6.5	No	No	
9	Goat Willow(Salix caprea)	-	Good	5.5-6.5	Yes	Yes	Heavy ivy, black marks on leaves
10	Sycamore (Acer Psuedoplatanus)	-	Good	11	Yes	No	Ivy
11	Sycamore (Acer Psuedoplatanus)	-	Good	11	Yes	No	Ivy
12	Ash (Fraxinus excelsior)	-	Good	21	Yes	No	Ivy
13	Chery Laurel (Prunus laurocerasus)	-	Good	3	No	No	
14	Silver Birch (Betula pendula)	-	Good	3	No	No	
15	Ash (Fraxinus excelsior)	Yes	Good	15-16	Yes	Yes	Heavy ivy
16	Ash (Fraxinus excelsior)	Yes	Good	15-16	Yes	Yes	Heavy ivy
17	Ash (Fraxinus excelsior)	Yes	Good	15-16	Yes	Yes	Heavy ivy
18	Ash (Fraxinus excelsior)	Yes	Good	15-16	Yes	Yes	Heavy ivy
19	Goat Willow(Salix caprea)	-	Good	10	Yes	No	Ivy
20	Goat Willow(Salix caprea)	-	Good	10	Yes	No	Ivy
21	Goat Willow(Salix caprea)	-	Good	10	Yes	No	Ivy
22	Goat Willow(Salix caprea)	-	Good	10	Yes	No	Ivy
23	Goat Willow(Salix caprea)	-	Good	10	Yes	No	Ivy
24	Goat Willow(Salix caprea)	-	Good	10	No	No	Ivy
25	Goat Willow(Salix caprea)	-	Good	10	Yes	No	Ivy
26	Sycamore (Acer Psuedoplatanus)	-	Good	6.5-7.5	Yes	No	Ivy
27	Sycamore (Acer Psuedoplatanus)	-	Good	6.5-7.5	Yes	No	
28	Sycamore (Acer Psuedoplatanus)	-	Good	6.5-7.5	Yes	No	Ivy
29	Downy Birch (Betula pubescens)		Good	3	No	No	

reaching the undergrowth which can discourage regeneration of native plants (Maguire, C.M. et al., 2008). However, the invasive species identified in Table 4 are not listed as Invasive Alien Species of Union Concern by the European Commission. Therefore, they are not regulated as part of the Alien Invasive Species European Regulation (EU No. 1143/2014). These species are also not listed on the Third Schedule of the Birds and Natural Habitats Regulations (S.I. No. 477/2011), and as such, are not regulated under Regulations 49 and 50. Despite this, preventative measures should be put in place to conserve the biodiversity within the adjacent southern broadleaved woodland (WD1) habitat and to prevent the spread of invasive species. Invasive species can negatively alter the composition and structure of a habitat. They may be spread by machinery or equipment on site through directly transferring propagules, or due to the presence of propagules on equipment or machinery which may be introduced when they are used in another area of a site. To prevent this, equipment or machinery which has been in contact with invasive flora must be cleaned to remove invasive debris. Invasive species' propagules may also exist within the soil; therefore, soil should not be transferred to another area or site. Invasive plant species can be physically removed by grubbing the root and cutting large stems, once the plant material is properly disposed of to prevent re-growth. The soil itself or the plant may be treated with chemical controls such as glyphosate, triclopyr or ammonium sulphate. The chemical type, solution, application method and ideal environmental conditions will vary depending on the target plant species. Regarding invasive plant species control, the '*Guidelines on The Management of Noxious Weeds and Non-Native Invasive Plant Species on National Roads*' (NRA, 2010) should be followed.

Buildings and Artificial Surfaces (BL3)

This category includes all buildings and structures which are composed of artificial structures such as cement, bricks, and tarmac. The disused reservoir and the ground underneath it is included under this habitat description, as they are built with artificial materials, and include less than 50% plant cover (see Figures 8, 9 & 10).

Scrub (WS1)

Scrub is defined as areas that are dominated by at least 50% cover of shrubs, stunted trees or brambles. The canopy height is generally less than 5m. or 4m in the case of wetland areas. Common species found in this habitat type include spinose plants such as Hawthorn (*Crataegus monogyna*), Blackthorn (*Prunus spinosa*) and Gorse (*Ulex europaeus*) (Fossitt, 2000). A list of species identified within this WS1 habitat is listed in Table 5. Plant species were assigned a DAFOR rating to give a measure of abundance within each habitat. The majority of the species recorded were native, including common holly (*Ilex aquifolium*), bush vetch (*Vicia sepium*), marsh woundwort (*Stachys palustris*) and herb Robert (*Geranium robertianum*) etc. The most dominant species across the habitat was the native Elmleaf blackberry (*Rubus ulmifolius*) and English ivy (*Hedera helix*). The only non-native species encountered was the bitter dock (*Rumex obtusifolius*). The invasive potential of this species has not yet been assessed; however, this species is also not listed on the Third Schedule of the Birds and Natural Habitats Regulations (S.I. No. 477/2011) or as Invasive Alien Species of Union Concern by the European Commission.

3.8.2 Bat Survey

3.8.2.1 Desk Study

The National Biodiversity Data Centre (NBDC) maps landscape suitability for bats based on Lundy *et al.*, (2011). The maps are a visualisation of the results of the analyses based on a habitat suitability index. The index ranges from 0 to 100, with 0 being least favourable and 100 most favourable for bats (see Table 7 below). The overall suitability index of the proposed site was 30.67 which is considered as medium favourability. For some species the suitability index is quite high such as Common Pipistrelle, Soprano pipistrelle, Brown long-eared bat and Leisler's Bat.

Table 7. Suitability of the study area for the bat species previously recorded in the study area (based on NBDC) along with their Irish Red List Status (from Marnell *et al.*, 2009)

Common Name	Scientific Name	Suitability Index	Irish Red List Status
All bats	-	30.67	-
Common pipistrelle	<i>Pipistrellus pipistrellus</i>	47	Least Concern
Soprano pipistrelle	<i>Pipistrellus pygmaeus</i>	44	Least Concern
Nathusius's pipistrelle	<i>Pipistrellus nathusii</i>	7	Least Concern
Brown long-eared bat	<i>Plecotus auritus</i>	46	Least Concern
Lesser horseshoe bat	<i>Rhinolophus hipposideros</i>	1	Least Concern
Leisler's bat	<i>Nyctalus leisleri</i>	41	Least Concern
Whiskered bat	<i>Myotis mystacinus</i>	28	Least Concern
Daubenton's bat	<i>Myotis daubentonii</i>	28	Least Concern
Natterer's bat	<i>Myotis nattereri</i>	34	Least Concern

A review of the *All-Ireland Daubentons Bat Waterways Survey* does not indicate that the Ballywater River to the north of the site has been surveyed.

3.8.2.2 Site Assessment

There was no physical evidence of bat usage observed within the site in the form of bat sightings, bat droppings, urine staining, grease marks (i.e., oily secretions from glands present on stonework), bat pupae or claw marks.

The reservoir water tank and a number of trees on the boundary of the site were deemed to have possible bat roost potential. The trees with high potential are listed in Table 6. Many of the trees observed were infested with ivy, or had cracks and splits in stems and branches, cavities from branch tearing, detached bark or gaps between overlapping stems or branches and other hollows as outlined previously. However, no evidence of any bat roosts was found in these trees during the bat surveys as outlined below.

3.8.2.3 Bat Survey Results

Dusk Survey

The dusk survey was carried out on the 11th of July 2023. The survey commenced at 21:40pm and ended at approximately 23:45pm. The sunset time on this date was 21:52pm. The temperature was above 10°C and the weather conditions were dry and calm (see Table 3). These were optimal conditions for bat activity. The recording was approximately 2 hours and 26 minutes long. Little bat activity was recorded within the site location, and no bats were seen leaving possible roosts. Three bat species were recorded during the dusk transect and emergence survey, which included the following:

- Leisler’s noctule (*Nyctalus leisleri*);
- Soprano pipistrelle (*Pipistrellus pygmaeus*); and
- Common pipistrelle (*Pipistrellus Pipistrellus*)

Of these species, 2 No. were detected within 100m of the site boundary, *P. pipistrellus* and *N. leisleri*. A number of bats were recorded in the wider adjacent areas along hedgerows, along scattered woodland areas (e.g., adjacent to church) and treelines. The exact locations of each species and the survey trail taken can be seen in Figure 12. In particular, high levels of bat activity (i.e., Common and Soprano pipistrelle) were recorded at the Termonfeckin bridge, 255m northwest of the site. Bats were physically seen foraging along the water. Visual sightings of bat species have been marked with a star (★) in Figure 12. It was difficult to identify the exact species as it was dark. However, due to their flight patterns, described by Bat Conservation Ireland as “rapid, agile swoops”, it is likely that the species encountered were *Pipistrelle* spp. which correlated with the recordings.

Dawn Survey

The dawn survey was carried out on the 13th of July 2023. This survey began at approximately 04:30am and finished at approximately 05.50am. The recording lasted approximately an hour and 20 minutes. The sunrise time on this date was 05:11am. The temperature was above 10°C, and the weather conditions were dry and calm. Very little bat activity was recorded during the duration of the survey, and no bats were seen entering roosts or foraging. The bat species recorded during the entire dawn bat survey included the following:

- Nathusius’ pipistrelle (*Pipistrellus nathusii*); and
- Leisler’s noctule (*Nyctalus leisleri*).

Of the 2 above species, neither were detected within the site’s boundary. Little bat activity was recorded in the surrounding area along possible commuting habitat, or foraging areas such as the Termonfeckin bridge. The exact locations of each species and the dawn survey trail taken can be seen in Figure 12.

3.8.2.4 Bat Survey Discussion

All Irish bat species are protected under the Wildlife Act (1976) and Wildlife Amendment Acts (2000 and 2010). Also, the EC Directive on The Conservation of Natural habitats and of Wild Fauna and Flora (Habitats Directive 1992), seeks to protect rare species, including bats, and their habitats and requires that appropriate monitoring of populations be undertaken. All Irish bats are listed in Annex IV of the Habitats Directive and the lesser horseshoe bat *Rhinolophus hipposideros* is further listed under Annex II. Across Europe, they are further protected under the Convention on the Conservation of European Wildlife and Natural Habitats (Bern Convention 1982), which, in relation to bats, exists to conserve all species and their habitats. The Convention on the Conservation of Migratory Species of Wild Animals (Bonn Convention 1979, enacted 1983) was instigated to protect migrant species across all European boundaries. The Irish government has ratified both these conventions. Also, under existing legislation, the destruction, alteration or evacuation of a known bat roost is a notifiable action, and a derogation licence has to be obtained from the *National Parks and Wildlife Service* before works can commence.

The findings of the dusk and dawn surveys indicate that there are no bat roosts within the boundaries of the site (i.e., either within the reservoir or within the trees on the boundaries of the site). As such, the proposed demolition of the reservoir and removal of trees to facilitate the construction of the site entrance on the western boundary does not require permission from the NPWS (i.e., a derogation licence). However, during the early stages of the demolition of the reservoir and during the removal of trees from the western boundary attention should be paid to the possibility that a temporary bat roost may have established within the site since the release of this report. If bats are encountered during the demolition and/or tree removal stage, works should be ceased and an ecologist consulted.

3.8.3 Bird Survey

During the site assessment, no physical evidence of bird nests was observed within the boundary of the site. It is important to note that there were no sightings of marine birds which are associated with the Boyne Estuary SPA. The species recorded during the dawn bird song survey on the 13th July, 2023 with Cornell Lab Merlin Bird ID software are presented in Table 8. These birds can be summarised as follows:

- Eurasian blackbird (*Turdus merula*);
- Eurasian wren (*Troglodytes troglodytes*);
- Common wood pigeon (*Columba palumbus*);
- Eurasian jackdaw (*Corvus monedula*);
- European goldfinch (*Carduelis carduelis*); and
- Rook (*Corvus frugilegus*).

The birds recorded are common resident birds which are widespread across Ireland. Each species listed above have been given a ‘green’ conservation status in Ireland as per the Birds of Conservation Concern in Ireland 2020-2026 (Colhoun & Cummins, 2013). All bird species are protected by Irish

Table 8. Bird Species identified at Proposed Playground Site, Baltray Road, Termonfeekin, County Louth during Dawn Survey on the 13th July, 2023

Common Name	Scientific Name	Irish status	Irish Red List Status	Wintering	Breeding
Common chaffinch	<i>Fringilla coelebs</i>	Resident	Green	Yes	Yes
European Goldfinch	<i>Carduelis carduelis</i>	Resident	Green	Yes	Yes
Common wood pigeon	<i>Columba palumbus</i>	Resident	Green	Yes	Yes
Eurasian wren	<i>Troglodytes troglodytes</i>	Resident	Green	Yes	Yes
European robin	<i>Erithacus rubecula</i>	Resident	Green	Yes	Yes
Eurasian blackbird	<i>Turdus merula</i>	Resident	Green	Yes	Yes
Eurasian jackdaw	<i>Corvus monedula</i>	Resident	Green	Yes	Yes
Rook	<i>Corvus frugilegus</i>	Resident	Green	Yes	Yes

National legislation. The common wood pigeon is protected under both Annex II, Section I & Annex III, Section I of the Birds Directive as outlined in the Official Journal of the European Union. The NBDC database was also examined as part of the desk study. No birds were recorded within the site location during the 'Birds of Ireland' survey, which is ongoing and has been carried out since 2011. However, the site location is within the 1km grid reference O1480, and species of American Golden Plover (*Pluvialis dominica*), Forster's Tern (*Sterna forsteri*), Common Linnet (*Carduelis cannabina*) and Common Buzzard (*Buteo buteo*) have been recorded here as a part of the Birds of Ireland and the Rare Birds of Ireland surveys.

The proposed works include the demolition of the reservoir tank, clearing a proportion of the open scrub area and the removal of 2-3 number of trees. These works could disturb these resident bird species and result in habitat loss. There will also be noise pollution and increased human presence, which will disturb birds within the site and surrounding areas. To minimise disturbance of bird species, any works which include altering the habitat or clearing an area should take place outside of the bird/wildlife nesting and breeding season, which falls from the 1st March to the 31st August (NPWS, 2023).

4 IDENTIFICATION OF NATURA 2000 SITES

It is general practice, when screening a plan or project for compliance with the Habitats Directive, to identify all Natura 2000 sites (SPAs & SACs) within the functional area of the plan/project itself and within 15km of the boundaries of the area the plan/project applies to. This approach is currently recommended in the Department of the Environmental, Heritage and Local Government’s document Guidance for Planning Authorities and as a precautionary measure, to ensure that all potentially affected Natura 2000 sites are included in the screening process.

A list of all the SPAs and SACs within 15km of the site are included in a comprehensive table, Table 1 at the start of the report. The following table, Table 9 represents a summary of Table 1. Please see Figures 1 to 7 for locations of the site at various mapping scales.

Table 9. Natura 2000 sites within 15km of the Proposed Playground Site at Termonfeckin

SITE CODE	DESIGNATION	SITE NAME
004236	cSPA	Northwest Irish Sea
001957	SAC	Boyne Coast & Estuary
004080	SPA	Boyne Estuary
001459	SAC	Clogherhead
004232	SPA	River Boyne and River Blackwater
002299	SAC	River Boyne and River Blackwater
004458	SPA	River Nanny Estuary & Shore
000455	SAC	Dundalk Bay
004026	SPA	Dundalk Bay

5 DESCRIPTION OF NATURA 2000 SITES

The conservation objectives, qualifying interests, vulnerability and conservation status of individual sites is provided as follows.

5.1 Northwest Irish Sea cSPA (004236)

The North-west Irish Sea cSPA constitutes an important resource for marine birds. The estuaries and bays that open into it along with connecting coastal stretches of intertidal and shallow subtidal habitats, provide safe feeding and roosting habitats for waterbirds throughout the winter and migration periods. These areas, along with more pelagic marine waters further offshore, provide additional supporting habitats (for foraging and other maintenance behaviours) for those seabirds that breed at colonies on the north-west Irish Sea's islands and coastal headlands. These marine areas are also important for seabirds outside the breeding period.

This SPA extends offshore along the coasts of counties Louth, Meath and Dublin, and is approximately 2,333km² in area. This SPA is ecologically connected to several existing SPAs in this area. The site is a Special Protection Area (SPA) under the E.U. Birds Directive, of special conservation interest for the following species: Common Scoter, Red-throated Diver, Great Northern Diver, Fulmar, Manx Shearwater, Shag, Cormorant, Little Gull, Kittiwake, Black-headed Gull, Common Gull, Lesser Black backed Gull, Herring Gull, Great Black-backed Gull, Little Tern, Roseate Tern, Common Tern, Arctic Tern, Puffin, Razorbill and Guillemot.

5.2 Boyne Coast & Estuary SAC (001957)

Boyne Coast and Estuary SAC is a coastal site which includes most of the tidal sections of the River Boyne, intertidal sand- and mudflats, saltmarshes, marginal grassland, and the stretch of coast from Bettystown to Termonfeckin that includes the Mornington and Baltray sand dune systems. The site is a Special Area of Conservation (SAC) selected for the following habitats and/or species listed on Annex I / II of the E.U. Habitats Directive (* = priority; numbers in brackets are Natura 2000 codes):

- [1130] Estuaries;
- [1140] Tidal Mudflats and Sandflats;
- [1210] Annual vegetation of drift lines;
- [1310] Salicornia Mud;
- [1330] Atlantic Salt Meadows;
- [2110] Embryonic Shifting Dunes;
- [2120] Marram Dunes (White Dunes); and
- [2130] Fixed Dunes (Grey Dunes).

5.3 Boyne Estuary SPA (004080)

This moderately-sized coastal site is situated west of Drogheda on the border of Counties Louth and Meath. The site comprises most of the estuary of the Boyne River, a substantial river which drains a large catchment. Apart from one section which is over 1 km wide, its width is mostly less than 500 m. The river channel, which is navigable and dredged, is defined by training walls, these being breached in places. Intertidal flats occur along the sides of the channelled river. The sediments vary from fine muds in the sheltered areas to sandy muds or sands towards the river mouth. The linear stretches of intertidal flats to the north and south of the river mouth are mainly composed of sand. One or more species of Eelgrass (*Zostera spp.*) occur in the estuary. Parts of the intertidal areas are fringed by salt marshes, most of which are of the Atlantic type, and dominated by Sea-purslane (*Halimione portulacoides*). Other species present include Common Saltmarsh-grass (*Puccinellia maritima*), Sea Plantain (*Plantago maritima*), Lax-flowered Sea-lavender (*Limonium humile*) and Glasswort (*Salicornia spp.*). Common Cord-grass (*Spartina anglica*) occurs frequently on the flats and salt marshes. The site is a Special Protection Area (SPA) under the E.U. Birds Directive, of special conservation interest for the following species: Shelduck, Oystercatcher, Golden Plover, Grey Plover, Lapwing, Knot, Sanderling, Black-tailed Godwit, Redshank, Turnstone and Little Tern. The E.U. Birds Directive pays particular attention to wetlands and, as these form part of this SPA, the site and its associated waterbirds are of special conservation interest for Wetland & Waterbirds.

5.4 Clogherhead SAC (001459)

Clogherhead is a promontory of Silurian quartzite, located approximately 10 km north-east of Drogheda in Co. Louth. The rocks are covered with a thin layer of soil that, in places, supports a coastal heath community. Areas of sea cliff, bedrock shore and dry grassland also occur within the site. The site is a Special Area of Conservation (SAC) selected for the following habitats and/or species listed on Annex I / II of the E.U. Habitats Directive (* = priority; numbers in brackets are Natura 2000 codes):

- [1230] Vegetated sea cliffs of the Atlantic and Baltic coasts; and
- [4030] European dry heaths.

5.5 River Boyne and River Blackwater SPA (004232)

The River Boyne and River Blackwater SPA is a long, linear site that comprises stretches of the River Boyne and several of its tributaries; most of the site is in Co. Meath, but it extends also into Cos Cavan, Louth and Westmeath. It includes the following river sections: the River Boyne from the M1 motorway bridge, west of Drogheda, to the junction with the Royal Canal, west of Longwood, Co Meath; the River Blackwater from its junction with the River Boyne in Navan to the junction with Lough Ramor in Co. Cavan; the Tremblestown River/Athboy River from the junction with the River Boyne at Kilnagross Bridge west of Trim to the bridge in Athboy, Co. Meath; the Stoneyford River from its junction with the River Boyne to Stonestown Bridge in Co. Westmeath; the River Deel from its junction with the River Boyne to Cummer Bridge, Co. Westmeath. The site includes the river channel and marginal vegetation.

Most of the site is underlain by Carboniferous limestone but Silurian quartzite also occurs in the vicinity of Kells and Carboniferous shales and sandstones close to Trim. The site is a Special Protection Area (SPA) under the E.U. Birds Directive of special conservation interest for the Kingfisher.

5.6 River Boyne and River Blackwater SAC (002299)

This site comprises the freshwater element of the River Boyne as far as the Boyne Aqueduct, the Blackwater as far as Lough Ramor and the Boyne tributaries including the Deel, Stoneyford and Tremblestown Rivers. These riverine stretches drain a considerable area of Meath and Westmeath, and smaller areas of Cavan and Louth. The underlying geology is Carboniferous Limestone for the most part, with areas of Upper, Lower and Middle well represented. In the vicinity of Kells Silurian Quartzite is present while close to Trim are Carboniferous Shales and Sandstones. There are many large towns adjacent to but not within the site, including Slane, Navan, Kells, Trim, Athboy and Ballivor.

The site is a Special Area of Conservation (SAC) selected for the following habitats and/or species listed on Annex I / II of the E.U. Habitats Directive (* = priority; numbers in brackets are Natura 2000 codes):

- [7230] Alkaline Fens;
- [91E0] Alluvial Forests*;
- [1099] River Lamprey (*Lampetra fluviatilis*);
- [1106] Atlantic Salmon (*Salmo salar*); and
- [1355] Otter (*Lutra lutra*).

The main areas of alkaline fen in this site are concentrated in the vicinity of Lough Shesk, Freehan Lough and Newtown Lough. The hummocky nature of the local terrain produces frequent springs and seepages which are rich in lime. A series of base-rich marshes have developed in the poorly-drained hollows, generally linked with these three lakes. Open water is usually fringed by Bulrush (*Typha latifolia*), Common Club-rush (*Scirpus lacustris*) or Common Reed (*Phragmites australis*), and this last species also extends shorewards where a dense stand of Great Fen-sedge (*Cladium mariscus*) frequently occurs. This in turn grades into a sedge and grass community (*Carex spp.* and Purple Moor-grass, *Molinia caerulea*), or one dominated by Black Bog-rush (*Schoenus nigricans*). An alternative aquatic/terrestrial transition is a floating layer of vegetation. This is normally based on Bogbean (*Menyanthes trifoliata*) and Marsh Cinquefoil (*Potentilla palustris*). Other species gradually become established on this cover, especially plants tolerant of low nutrient status e.g. bog mosses (*Sphagnum spp.*). Diversity of plant and animal life is high in the fen and the flora includes many rarities. Plants of interest include Narrow-leaved Marsh-orchid (*Dactylorhiza traunsteineri*), Fen Bedstraw (*Galium uliginosum*), Cowbane (*Cicuta virosa*), Frogbit (*Hydrocharis morsus-ranae*) and Least Bur-reed (*Sparganium minimum*). These species tend to be restricted in their distribution in Ireland. Also notable is the abundance of aquatic stoneworts (*Chara spp.*) which are characteristic of calcareous wetlands.

5.7 River Nanny Estuary and Shore SPA (004458)

The site comprises the estuary of the River Nanny and sections of the shoreline to the north and south of the estuary (c. 3 km in length), in Co. Meath. The estuarine channel, which extends inland for almost 2 km, is narrow and well sheltered. Sediments are muddy in character and edged by saltmarsh and freshwater marsh/wet grassland. The saltmarsh is best developed in the eastern portion of the estuarine channel, with species such as Sea Plantain (*Plantago maritima*), Sea Aster (*Aster tripolium*), Red Fescue (*Festuca rubra*) and Sea Purslane (*Halimione portulacoides*) occurring. Further up the estuary, the marsh habitats support species such as Bulrush (*Typha latifolia*) and Yellow Flag (*Iris pseudacorus*). The shoreline, which is approximately 500 m in width to the low tide mark, comprises beach and intertidal habitats. It is a well-exposed shore, with coarse sand sediments. The well developed beaches, which are backed in places by clay cliffs, provide high tide roosts for the birds. The village of Laytown occurs in the northern side of the River Nanny estuary. The site is a Special Protection Area (SPA) under the E.U. Birds Directive, of special conservation interest for the following species: Oystercatcher, Ringed Plover, Golden Plover, Knot, Sanderling and Herring Gull. The E.U. Birds Directive pays particular attention to wetlands, and as these form part of this SPA, the site and its associated waterbirds are of special conservation interest for Wetland & Waterbirds. The site is a Special Protection Area (SPA) under the E.U. Birds Directive, of special conservation interest for the following species:

- Oystercatcher *Haematopus ostralegus* wintering
- Ringed Plover *Charadrius hiaticula* wintering
- Golden Plover *Pluvialis apricaria* wintering
- Knot *Calidris canutus* wintering
- Sanderling *Calidris alba* wintering
- Herring Gull *Larus argentatus* wintering
- Wetlands

5.8 Dundalk Bay SAC

Dundalk Bay, Co. Louth, is a very large open shallow sea bay with extensive saltmarshes and intertidal sand/mudflats, extending some 16km from Castletown River on the Cooley Peninsula in the north to Annagassan/Salterstown in the south (see site synopsis in Appendix 3). The bay encompasses the mouths and estuaries of the Rivers Dee, Glyde, Fane, Castletown and Flurry.

The site is a Special Area of Conservation (SAC) selected for the following habitats and/or species listed on Annex I / II of the E.U. Habitats Directive:

- Estuaries (1130);
- Tidal Mudflats and Sandflats (1140);
- Perennial Vegetation of Stony Banks (1220);
- Salicornia Mud (1310);
- Atlantic Salt Meadows (1330); and

- Mediterranean Salt Meadows (1410)

The site is internationally important for waterfowl because it regularly holds over 20,000 birds (up to and supports over 1% of the North-West European/East Atlantic Flyway populations of Brent Goose (366), Bartailed Godwit (2,312) and Knot (11,948). Additionally, it is nationally important for Golden Plover (4,266), Great Crested Grebe (193), Greylag Goose (312), Shelduck (463), Mallard (657), Pintail (100), Red-breasted Merganser (148), Oystercatcher (6,940), Grey Plover (218), Ringed Plover (133), Wigeon (565), Dunlin (9,112), Blacktailed Godwit (754), Curlew (1,593), Lapwing (4,822), Greenshank (20) and Redshank (1,455). Both Golden Plover and Bar-tailed Godwit are Annex I species.

5.9 Dundalk Bay SPA

Dundalk Bay is a large open shallow sea bay with extensive saltmarshes and intertidal sand/mudflats, extending some 16 km from Castletown River on the Cooley Peninsula, in the north, Annagassan/Salterstown in the south.

Dundalk Bay SPA is one of the most important wintering waterfowl sites in the country and one of the few that regularly supports more than 20,000 waterbirds (see site synopsis in Appendix 6). Four species occur in numbers of international importance and a further 19 species in numbers of national importance. The regular occurrence of Golden Plover, Bar-tailed Godwit, Red-throated Diver, Great Northern Diver and Little Egret is of particular note as these species are listed on Annex I of the E.U. Birds Directive.

6 CONSERVATION OBJECTIVES, QUALIFYING INTERESTS, VULNERABILITY AND CONSERVATION STATUS OF NATURA 2000 SITES

There are no potential *Source-Pathway-Receptor* links present for the 9 sites located within 15km of the site proposed in Termonfeckin for the playground. The reasons for this are as follows.

6.1 Sources of Pollution

6.1.1 Noise and Dust Emissions (Demolition/Construction Phase)

It is expected that the demolition of the reservoir will require a tracked excavator equipped with a concrete breaker, dumpers and other various plant to process the construction and demolition waste (i.e., crushing, metal removal, etc) and to remove it off site. This process will likely give rise to significant noise levels and dust emissions which will have an impact on the local environment. However, these impacts can be mitigated through correctly designed noise suppression systems on plant, noise protection barriers and dust suppression systems (e.g., misting, water bowsers etc.).

6.1.2 Source of Contamination (Demolition/Construction Phase & Operational Phase)

There will be no contaminated stormwater generated during the demolition/construction phase or the operational phase of the development and there are no proposals to generate a point discharge from the site. Following the completion of the Demolition/Construction Phase, the material used for the ground covering will not generate leachate. As such, there will effectively be no ‘*Source*’ of contamination which can migrate off site. The development will require some limited use of concrete during the installation of the play equipment and fencing. These works are minor and will be carried out during dry weather to prevent run-off and as such, it will not represent a viable source of contamination.

As stated in Section 2.4, the ground covering will facilitate the percolation of rainfall through the material into the underlying subsoil. As such, any stormwater generated on site will be free of contamination and will discharge to ground. Based on GSI records, there is significant depth of overburden on site, and as such there is significant attenuation capacity within the overburden.

6.2 Pathways for Off-site Migration to Natura 2000 Receptors

There are no surface water bodies within the vicinity of the site nor is there any existing discharge from the site to the municipal stormwater system. As such, there is no viable ‘*Pathway*’ for possible contamination to exit the site and get into the Ballywater River catchment and ultimately enter into the Northwest Irish Sea cSPA (004236) and/or the Boyne Coast & Estuary SAC (001957).

6.3 Potential Natura 2000 Receptors

The nearest Natura 2000 sites are the Northwest Irish Sea cSPA (004236) and the Boyne Coast & Estuary SAC (001957) which are both 1.57km to the east of the site. However, there are no sources of

contamination from the site nor are there pathways to the afore-mentioned SPA and/or SAC if a hypothetical source was to arise.

6.4 Other Sensitive Ecological Receptors

The operations of the playground site will not have any significant negative impact on flora and fauna within, or adjacent to the boundary of the site as there will not be any increase in indirect impacts (e.g., disturbance and noise from people, parking cars, etc) compared with the current baseline ecological conditions. The proximity of a busy regional road (i.e., the Baltray Road) to the site and the adjacent primary school would indicate that the existing baseline noise levels are typical of a busy suburban area and that any increase in noise levels due to the introduction of the playground would be negligible.

7 ASSESSMENT OF LIKELY EFFECTS ON THE ECOLOGY OF NORTHWEST IRISH SEA cSPA & BOYNE COAST & ESTUARY SAC

This assessment is broken down into the Other Plans or Projects Adjacent or in the Vicinity of the site which could act in Combination with potential impacts from the Proposed Playground Development, Demolition & Construction Phase, Operational Phase and Summary of likely effects on the ecology of northwest Irish Sea cSPA & Boyne Coast & Estuary SAC.

7.1 Other Plans or Projects Adjacent or in the Vicinity of the site which could act in Combination with potential impacts from the Proposed Playground Development

7.1.1 Consideration of Potential ‘In-Combination’ Effects

In-combination effects can result from individually insignificant but collectively significant actions taking place over a period of time or concentrated in a location (CIEEM, 2018). Different types of actions can cause cumulative impacts and effects. As such, these types of impacts may be characterised as:

- *Additive/incremental* – in which multiple activities/projects (each with potentially insignificant effects) add together to contribute to a significant effect due to their proximity in time and space (CIEEM, 2018); and
- *Associated/connected* – a Development activity ‘enables’ another Development activity e.g. phased Development as part of separate planning applications. Associated Developments may include different aspects of the project which may be authorised under different consent processes. It is important to assess impacts of the ‘project’ as a whole and not ignore impacts that fall under a separate consent process (CIEEM, 2018).

In-combination effects are required to be considered at Screening for Appropriate Assessment Stage, and within an Appropriate Assessment itself. The scope of plans or projects considered for ‘in-combination’ effects includes plans and projects that are completed, approved or proposed to take into account effects that occur over time (EC, 2002). According to the European Commission (2006):

“[...] any element of a plan or project that has the potential to affect the conservation objectives of a Natura 2000 site, including its structure and function, should be considered significant”

7.1.2 Potential Additive/Incremental Impacts

A review has been carried out of planning permissions granted by Louth County Council (and which have not yet commenced development) for the Termonfeckin area in the last 5 years that are located within 500m of the site’s boundary. There are no planning permissions that fit the afore-mentioned criteria. As such, there is negligible potential for other projects to add to the impacts that the proposed playground will have on the environment in the area.

7.2 Demolition & Construction Phase

During the demolition of the disused reservoir, it is expected that noise levels will be significant and will have an impact on the local ecology in the wooded area to the south of the site. However, this impact, although significant, will be of a short duration.

Given the significant distance between the site and the Boyne Coast and Estuary SAC (i.e., 1.57km) and the presence of the mature woodland to the east of the site (which will mitigate noise levels), the predicted impacts on the SAC from noise and dust emissions during the Construction Phase are negligible.

7.3 Operational Phase

During the lifetime of the playground (i.e., during its operation), the use of the playground will not generate any increased negative impacts than already present at the site. The site is currently in close proximity to a local school and a busy regional road, the Baltray Road. These are significant existing sources of noise.

7.4 Summary of likely effects on the ecology of northwest Irish Sea cSPA & Boyne Coast & Estuary SAC

A review of the proposed development indicates that during the Demolition & Construction Phase and Operational Phases there will not be:

- Any impact on an Annex I habitat;
- Any reduction in the area of a Natura 2000 site;
- Direct or indirect damage to the physical quality of the environment in the Natura 2000 site;
- Serious or ongoing disturbance to species or habitats for which Natura 2000 is selected;
- Direct or indirect damage to the size, characteristics or reproductive ability of populations on the Natura 2000 site; and
- Interference with mitigation measures put in place for other plans/projects.

8 SCREENING CONCLUSION AND STATEMENT

The findings and conclusions of the screening process are as follows:

1. *No potential for significant effects/AA is not required*

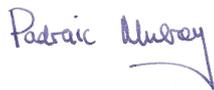
Screening established that there is **no potential for significant effects** and the project/plan can proceed as proposed. However, no changes may be made after this as this will invalidate the findings of the screening; and

2. No invasive alien plant species listed on the Third Schedule of the Birds and Natural Habitats Regulations (S.I. No. 477/2011) are known to be present on the site. However, prior to the commencement of construction, a separate Invasive Alien Plant Species (IAPS) assessment may be required along with this report. The project site may need to be re-surveyed to establish the extent and locations of invasive plant species within the site in order to determine a suitable management strategy.

Yours sincerely,



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**MULROY ENVIRONMENTAL LTD.
SERVICE CONSTRAINTS**

1. This report and the AA Screening Assessment carried out in connection with the report (together the "Services") were compiled and carried out for Louth County Council (the "client") in accordance with the terms of an emailed fee proposal agreement Fee Proposal PRP525.04.05.2023 between Mulroy Environmental Ltd. and the "client" dated the 4th May, 2023. Mulroy Environmental Ltd. received permission to proceed by email on the 14th June, 2023. The Services were performed by Mulroy Environmental Ltd. with the skill and care ordinarily exercised by a reasonable Environmental consultant at the time the Services were performed. Further, and in particular, the Services were performed by Mulroy Environmental Ltd. taking into account the limits of the scope of works required by the client, the time scale involved and the resources, including financial and manpower resources, agreed between Mulroy Environmental Ltd. and the client.
2. Other than that expressly contained in paragraph 1 above, Mulroy Environmental Ltd. provides no other representation or warranty whether express or implied, in relation to the Services.
3. Unless otherwise agreed the Services were performed by Mulroy Environmental Ltd. exclusively for the purposes of the client. Mulroy Environmental Ltd. is not aware of any interest of or reliance by any party other than the client in or on the Services. Unless expressly provided in writing, Mulroy Environmental Ltd. does not authorise, consent or condone any party other than the client relying upon the Services. Should this report or any part of this report, or otherwise details of the Services or any part of the Services be made known to any such party, and such party relies thereon that party does so wholly at its own and sole risk and Mulroy Environmental Ltd. disclaims any liability to such parties. Any such party would be well advised to seek independent advice from a competent environmental consultant and/or lawyer.
4. It is Mulroy Environmental Ltd.'s understanding that this report is to be used for the purpose described in the introduction to the report. That purpose was a significant factor in determining the scope and level of the Services. Should the purpose for which the report is used, or the proposed use of the site change, this report may no longer be valid and any further use of or reliance upon the report in those circumstances by the client without Mulroy Environmental Ltd. be requested to review the report after the date hereof, Mulroy Environmental Ltd. shall be entitled to additional payment at the then existing rates or such other terms as agreed between Mulroy Environmental Ltd. and the client.
5. The passage of time may result in changes in site conditions, regulatory or other legal provisions, technology or economic conditions which could render the report inaccurate or unreliable. The information and conclusions contained in this report should not be relied upon in the future without the written advice of Mulroy Environmental Ltd. In the absence of such written advice of Mulroy Environmental Ltd., reliance on the report in the future shall be at the client's own and sole risk. Should Mulroy Environmental Ltd. be requested to review the report in the future, Mulroy Environmental Ltd. shall be entitled to additional payment at the then existing rate or such other terms as may be agreed between Mulroy Environmental Ltd. and the client.
6. The observations and conclusions described in this report are based solely upon the Services which were provided pursuant to the agreement between the client and Mulroy Environmental Ltd. Mulroy Environmental Ltd. has not performed any observations, investigations, studies or testing not

specifically set out or required by the contract between the client and Mulroy Environmental Ltd.. Mulroy Environmental Ltd. is not liable for the existence of any condition, the discovery of which would require performance of services not otherwise contained in the Services. For the avoidance of doubt, unless otherwise expressly referred to in the introduction to this report, Mulroy Environmental Ltd. did not seek to evaluate the presence on or off the site of asbestos, electromagnetic fields, lead paint, heavy metals, radon gas or other radioactive or hazardous materials.

7. The Services are based upon Mulroy Environmental Ltd.'s observations of existing physical conditions at the Site gained from a walk-over survey of the site together with Mulroy Environmental Ltd.'s interpretation of information including documentation, obtained from third parties and from the client on the history and usage of the site. The Services are also based on information and/or analysis provided by independent testing and information services or laboratories upon which Mulroy Environmental Ltd. was reasonably entitled to rely. The Services clearly are limited by the accuracy of the information, including documentation, reviewed by Mulroy Environmental Ltd. and the observations possible at the time of the walk-over survey. Further Mulroy Environmental Ltd. was not authorised and did not attempt to independently verify the accuracy or completeness of information, documentation or materials received from the client or third parties, including laboratories and information services, during the performance of the Services. Mulroy Environmental Ltd. is not liable for any inaccurate information or conclusions, the discovery of which inaccuracies required the doing of any act including the gathering of any information which was not reasonably available to Mulroy Environmental Ltd. and including the doing of any independent investigation of the information provided to Mulroy Environmental Ltd. save as otherwise provided in the terms of the contract between the client and Mulroy Environmental Ltd..

8. The environmental monitoring aspects of the Services is a limited sampling of the site at pre-determined borehole and soil vapour locations based on the operational configuration of the site. The conclusions given in this report are based on information gathered at the specific test locations and can only be extrapolated to an undefined limited area around those locations. The extent of the limited area depends on the soil and groundwater conditions, together with the position of any current structures and underground facilities and natural and other activities on site. In addition chemical analysis was carried out for a limited number of parameters [as stipulated in the contract between the client and Mulroy Environmental Ltd.] [based on an understanding of the available operational and historical information,] and it should not be inferred that other chemical species are not present.

9. Any site drawing(s) provided in this report is (are) not meant to be an accurate base plan, but is (are) used to present the general relative locations of features