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Sean Curran

Pollboy Waste Transfer Facility, Ballinasloe, Co. Galway

Natura Impact Statement

Pollboy Waste Separation Facility, Ballinasloe, Co. Galway

Natura Impact Statement

Document Control Sheet	
Document Reference	D02
Report Status	Draft
Report Date	September 2020
Current Revision	D02
Client:	Sean Curran, Barna Recycling
Client Address:	Carrowbrowne, Galway
Project Number	7526

Galway Office	Dublin Office	Castlebar Office
Fairgreen House,	Block 10-4,	Market Square,
Fairgreen Road,	Blanchardstown Corporate Park,	Castlebar,
Galway,	Dublin 15,	Mayo,
H91 AXK8,	D15 X98N,	F23 Y427,
Ireland.	Ireland.	Ireland.

Revision	Description	Author:	Date	Reviewed By:	Date	Authorised by:	Date
D01	Draft for internal review	JS	10/08/20	JD	10/08/20		
A	Final for issue	JD	29/09/20	LK	29/09/2020	BR	30/09/20

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1.0 INTRODUCTION

This report provides information on the potential for the development of a waste transfer facility at Pollboy, Ballinasloe, Co. Galway to impact on European sites within the Natura 2000 network. The purpose of this Natura Impact Statement (NIS) is to provide information to the environment section of the local Authority (i.e. the competent authority, in this case Galway County Council) to assist in their Appropriate Assessment (AA) of the development. This report presents a Stage 1 Screening and Stage 2 Assessment to inform the Appropriate Assessment process for the proposed development. The NIS is for the proposed waste permit application to Galway County Council.

An AA is a requirement of Article 6 of the Council Directive 92/43/EEC of 21 May 1992 on the Conservation of Natural Habitats and of Wild Fauna and Flora (as amended) (hereafter referred to as the "Habitats Directive"). The overall aim of the Habitats Directive is to maintain or restore the "Favourable Conservation Status" of habitats and species of European Community Interest. These habitats and species are listed in the Habitats and Birds Directives (Council Directive 2009/147/EC on the conservation of wild birds) with Special Areas of Conservation (SAC) and Special Protection Areas (SPA) designated to afford protection to the most vulnerable of them. These two designations are collectively known as European sites.

European and national legislation places a collective obligation on Ireland and its citizens to maintain habitats and species in the Natura 2000 network at favourable conservation condition. The Government and its agencies are responsible for the implementation and enforcement of regulations (in particular Part XAB of the Planning and Development (Amendment) Act 2010 and the European Communities (Birds and Natural Habitats) Regulations, 2011 (S.I. 477) (often referred to as the Habitats Regulations) to ensure the ecological integrity of these sites.

Appropriate Assessment is an assessment of whether a plan or project, alone or in-combination with other plans or projects, could have significant effects on a European site in view of the site's conservation objectives. This NIS accompanies the application under consideration for approval, to provide detailed consideration of European sites and their conservation objectives, those details which are the primary consideration for AA.

The project design to date has been an iterative approach which has sought to, as far as possible; avoid impacts to European sites. This report considers the proposed project design, including all the phases of the development. It determines if direct, indirect or in-combination effects are

likely to occur and identifies whether there remains any uncertainty regarding potential effects. While the waste permit is solely for the operational phase of the facility, construction phase impacts are also assessed. The report assessed the possibility the development to have significant effects, either individually or in-combination with other plans or projects, on European sites.

This report has been prepared by an experienced and appropriately qualified TOBIN ecologist with over 10 years' experience. An experienced TOBIN hydrologist and hydrogeologist, with a scientific background in determining potential water quality risk sources, provided additional input to potential impacts affecting hydrology and aquatic-dependant ecological receptors.

Laura Kennedy is a Senior Ecologist with TOBIN Consulting Engineers. She holds an honours degree in Zoology from University College Cork and a Masters in Science in Environmental Science from Trinity College Dublin. She is a qualified and experienced environmental consultant with ten years' post-graduate experience in environmental sciences and environmental consultancy in Canada and Ireland. Laura has prepared and delivered Planning and Environmental Consideration reports, Technical Data reports, Environmental Assessments, Permit Applications, and Environmental Effects Monitoring reports for renewable energy projects, pipeline projects, and mining projects in Canada and Ireland. Laura has a strong technical background as an aquatic ecologist and has extensive field experience in biological and chemical water quality assessment. She has also collected hydrology and meteorology data, conducted wildlife surveys (bird and nest surveys, amphibian surveys), and carried out fish habitat assessments, which has included electrofishing, minnow trapping and fish identification. Laura has also undertaken Screening Reports and Natura Impact Statements for large scale solar farm and wind energy developments and has defended Appropriate Assessments at Oral Hearings for a waste development and a mining project.

John Dillon is Professional Geologist (P.Geo.) and chartered waste manager (MCIWM) in the Energy and Environment section of TOBIN. He holds a degree in Environmental Science from the National University of Ireland, Galway and a Masters in Science in Environmental Engineering from the Imperial College London. John provides project management, project co-ordination and specialist contribution to hydrogeology/hydrological reports for Planning Applications, Environmental Impact Assessment Reports and waste licence applications. John has fifteen years' experience in the areas of environmental management and assessment with particular reference to the transmission line projects, energy projects, hydrogeological projects and public consultation in Ireland and the UK. John has been involved with the waste

licence/permit applications, design and planning applications for retail/commercial developments, waste management facilities and quarries nationwide. John has contributed to Screening Reports and Natura Impact Statements for wastewater treatment plants, pipeline projects, solar farm and wind energy developments and has defended Appropriate Assessments at Oral Hearings for waste management facilities and road projects.

Cathal Kelly is Chartered Engineer with over 8 years' experience. He currently holds the position of Senior Engineer / Hydrologist within the company. From his time spent working in the water / wastewater sector coupled with the technical design theory knowledge gained from under-graduate studies Cathal has significant experience of civil engineering design and particularly the water services sector. Cathal has direct responsibility for the completion of site specific flood risk assessments for varying projects including residential developments, solar farm developments, windfarms, care homes etc.

This report was produced with specific reference to the existing environmental and ecological data available for the site. The location of the development relative to European sites in the area is detailed in Figure 1 (overleaf).

Figure 1: SACs/SPA within 15km of Site

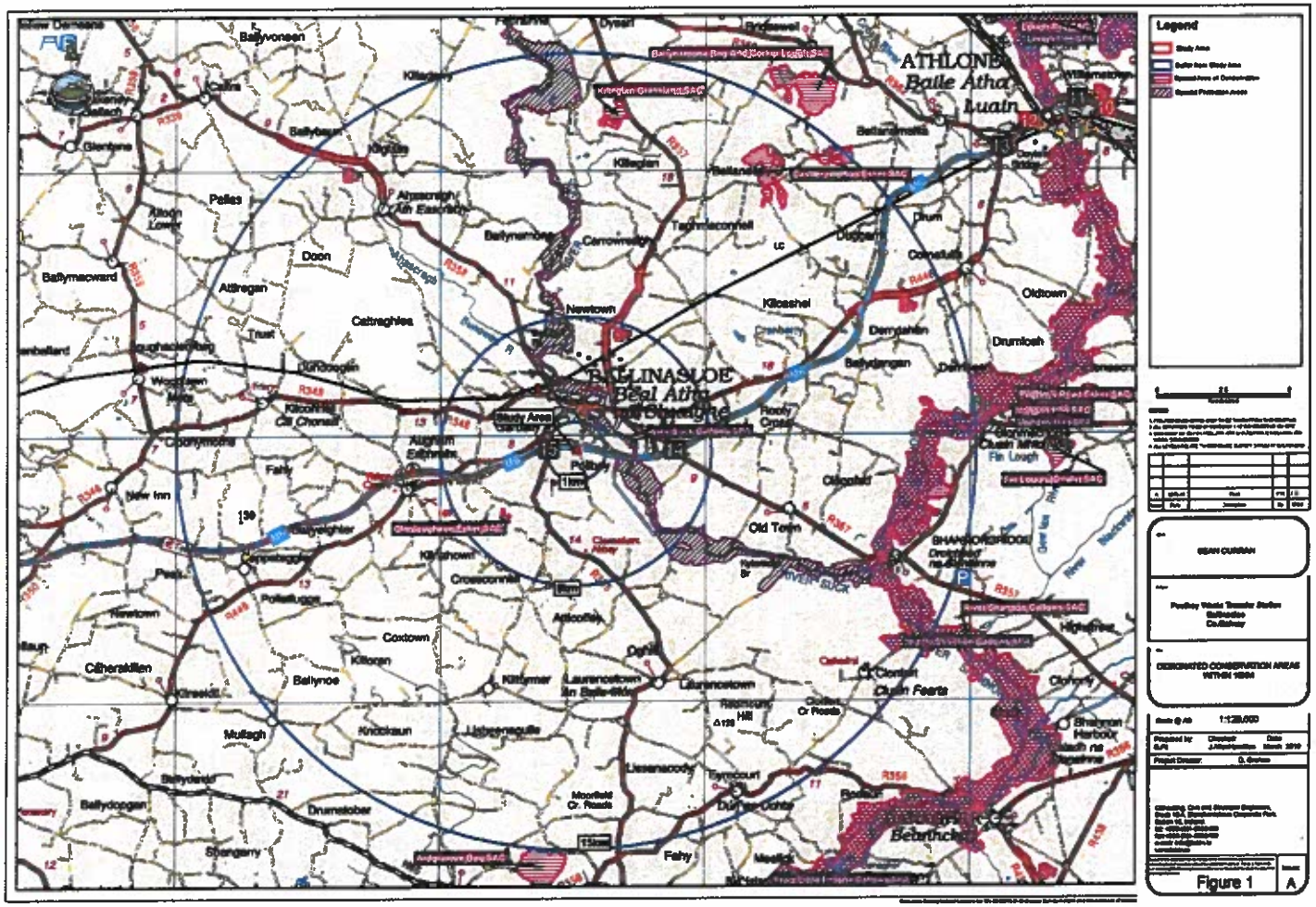
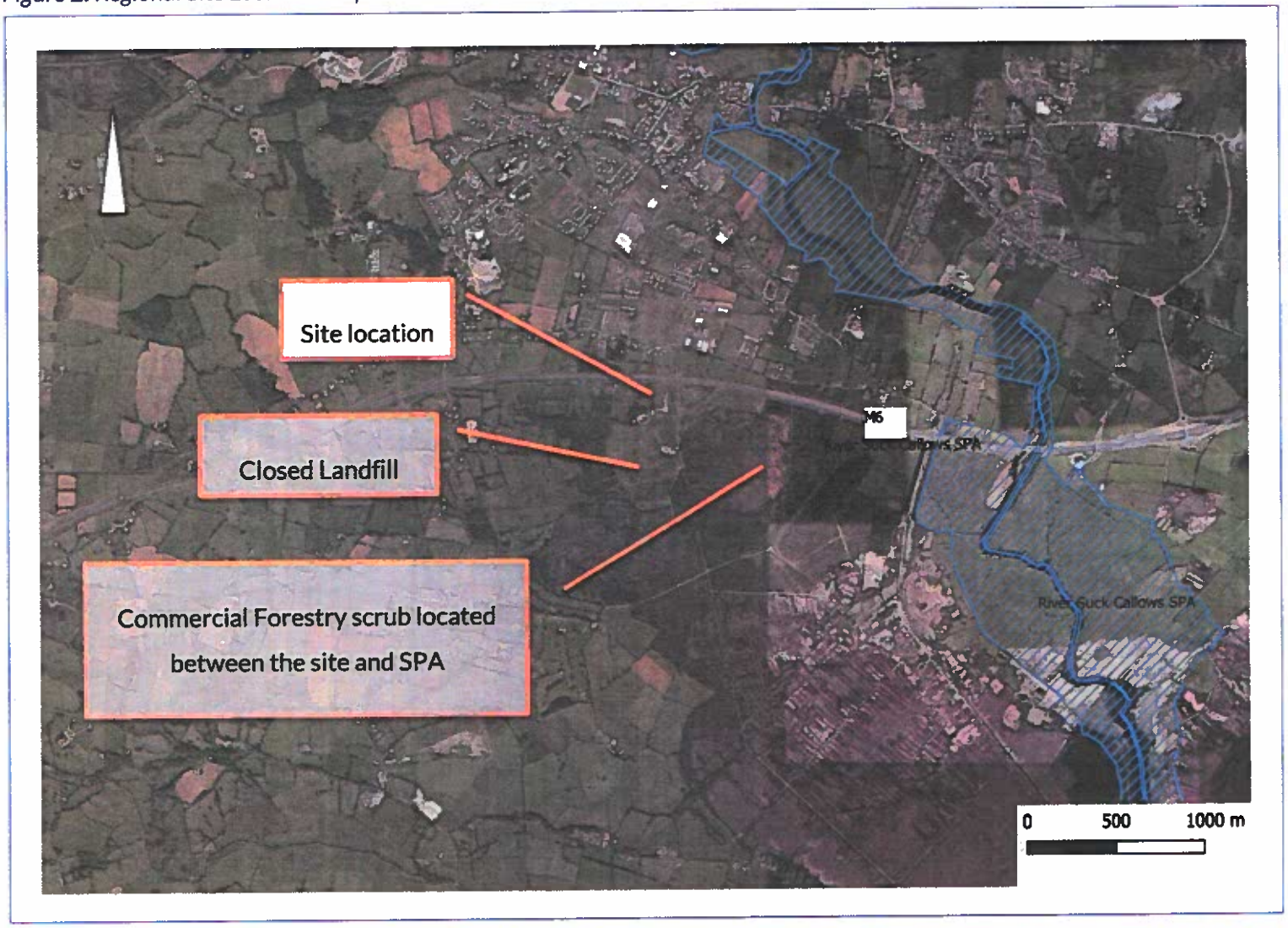


Figure 2: Regional Site Location Map



1.1 Legislative Context

The AA process is an assessment of the potential for significant adverse or negative effects of a plan or project, in-combination with other plans or projects, on the conservation objectives of a European site. These sites consist of Special Areas of Conservation (SACs) and Special Protection Areas (SPAs) and provide for the protection and long-term survival of Europe's most valuable and threatened species and habitats.

Council Directive 92/43/EEC of 21 May 1992 on the Conservation of Natural Habitats and of Wild Fauna and Flora - 'The Habitats Directive', has been transposed into Irish law by The European Community (Natural Habitats) Regulations 2011 (S.I. No. 477). The Birds Directive, Directive 2009/147/EC of the European Parliament and of the Council, seeks to protect birds of special importance by the designation of SPAs whereas the Habitats Directive does the same for habitats and other species groups with SACs. The requirement of AA is outlined in Article 6(3) and 6(4) of the EU Habitats Directive. Article 6(3) of the Habitats Directive requires that:

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

Furthermore, Article 6(4) of the Habitats Directive requires that:

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

If, despite a negative assessment of the implications for the site and the absence of alternative solutions, it is proposed that a plan or project may proceed to be carried out, then for "Imperative Reasons of Overriding Public Interest", including those of a social or economic

nature, the Member State shall take all compensatory measures necessary to ensure that the overall coherence of Natura 2000 network is protected.

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

Appropriate Assessment is based on best scientific knowledge and Planning Authorities should ensure that scientific data (e.g. ecological and hydrological expertise) is utilised in making their determination.

An AA should be based on best scientific knowledge. This report forms a NIS to inform the AA process which is finalised by the competent authority. This report was informed by desk and field studies undertaken by TOBIN Ecologists.

Reference was also made to the National Biodiversity Action Plan (2017-2021) and the Ballinasloe Local Area Plan (2015-2021) and to the objectives of the Galway County Development Plan (2015-2021).

1.2 Source-Pathway-Receptor Model

Ecological impact assessment of potential impacts on European sites is conducted utilising a standard 'Source-Pathway-Receptor' model, where, in order for an impact to occur all three elements of this mechanism must be in place. For example:

- Source(s) – e.g. pollutant run-off from proposed works via surface-water / storm water runoff, commercial and domestic effluents, dust and fine material releases.
- Pathway(s) – e.g. groundwater connecting to nearby qualifying wetland habitats, proximity to designated European sites.
- Receptor(s) – Qualifying habitats and species of European sites.

The absence or removal of one of the elements of the mechanism is sufficient to conclude that a potential effect is not of any relevance or significance. This report determines if direct, indirect or in-combination adverse effects will arise from the proposed development. Measures are proposed within the AA reporting to identify both impact source and pathways in order to address the potential for significant adverse effects.

1.3 Guidance

This report has been carried out using the following guidance:

- Appropriate Assessment under Article 6 of the Habitats Directive: Guidance for Planning Authorities. Circular NPWS 1/10 & PSSP 2/10;
- Appropriate Assessment of Plans and Projects in Ireland - Guidance for Planning Authorities. (Department of Environment, Heritage and Local Government, 2010);
- Managing Natura 2000 Sites: The provisions of Article 6 of the 'Habitats' Directive 92/43/EEC, Office for Official Publications of the European Communities, Luxembourg (EC 2018)[i];
- Assessment of Plans and Projects Significantly Affecting Natura 2000 Sites: Methodological guidance on the provisions of Article 6(3) and (4) of the Habitats Directive 92/43/EEC, Office for Official Publications of the European Communities, Luxembourg (EC 2001); and
- Guidance document on Article 6(4) of the 'Habitats Directive' 92/43/EEC – Clarification of the concepts of: alternative solutions, imperative reasons of overriding public interest, compensatory measures, overall coherence, opinion of the commission. Office for Official Publications of the European Communities, Luxembourg (EC 2007).

In addition, a detailed review of online published scientific literature was conducted. This included a detailed review of the National Parks and Wildlife Services (NPWS) website including mapping and available reports for relevant sites and in particular sensitive qualifying interests described and their conservation objectives. The EPA Envision Map-viewer (www.epa.ie) and available reports were also reviewed.

Definitions of conservation status, integrity and significance used in this assessment are defined in accordance with "*Managing Natura 2000 sites: The provisions of Article 6 of the 'Habitats' Directive 92/43/EEC*" (EC, 2018), as follows:

- The conservation status of a natural habitat is defined as the coherent sum of the site's ecological structure, function and ecological processes, across its whole area, which enables it to sustain the habitats, complex of habitats and/or populations of species for which the site is designated;

- The conservation status of a species is defined as the sum of the influences acting on the species concerned that may affect the long-term distribution and abundance of its population;

- The integrity of a European site is defined as the coherent sum of the site's ecological structure, function, and ecological processes, across its whole area, which enables it to sustain the habitats, complex of habitats and/or populations of species for which the site is designated; and

- Significant effect should be determined in relation to the specific features and environmental conditions of the protected site concerned by the plan or project, taking particular account of the site's conservation objectives and ecological characteristics.

There are four main stages in the AA process; the requirements for each depending on likely impacts to European sites (SAC/ SPA).

Stage One: Screening – the process which identifies the likely impacts upon a European site. Its purpose is to determine, on the basis of a preliminary assessment and objective criteria, whether a plan or project which is not directly connected with or necessary to the management of the site as a European site, individually or in combination with other plans or projects is likely to have a significant effect on the European site.

Stage Two: Appropriate Assessment – consideration is given if the impact of the project or plan would adversely affect the integrity of surrounding European sites, either alone or in combination with other projects or plans, with respect to the site's structure and function and its conservation objectives. Additionally, where adverse impacts have been identified, an assessment of the potential mitigation to reduce/minimise/avoid such impacts is required. This stage is the responsibility of the planning authority which is informed by a Natura Impact Statement. This stage is required where uncertainty of effect arises, or a potential effect has been defined which requires further procedures/ mitigation to remove uncertainty of a defined impact.

Stage Three: Assessment of Alternative Solutions – the process which examines alternative ways of achieving the objectives of the project or plan that avoid adverse impacts on the integrity of the European site; and

Stage Four: Assessment Where Adverse Impacts Remain – an assessment of compensatory measures where, in the light of an assessment of Imperative Reasons of Overriding Public Interest (IROPI), it is deemed that the project or plan should proceed.

This Report considers likely impacts on European sites as a result of the proposed project either alone or in-combination with other plans and/or projects and considers whether these effects are likely to be significant.

A review of the Galway County Development Plan was also undertaken. Relevant policies include:

Objective NHB 1 - Protected Habitats and Species

Support the protection of habitats and species listed in the Annexes to and/or covered by the EU Habitats Directive (92143/EEC) (as amended) and the Birds Directive (2009/147/EC), and regularly occurring migratory birds and their habitats and species protected under the Wildlife Acts 1976-2000 and the Flora Protection Order.

Objective NHB 3 - Water Resources

Protect the water resources in the plan area, including rivers, streams, lakes, wetlands, springs, furloughs, surface water and groundwater quality, as well as surface waters, aquatic and wetland habitats and freshwater and water dependant species in accordance with the requirements and guidance in the EU Water Framework Directive 2000 (2000/60/EC), the European Union (Water Policy) Regulations 2003 (as amended), the Western River Basin District Management Plan 2009-2015, Shannon International River Basin Management Plan 2009-2015 and other relevant EU Directives, including associated national legislation and policy guidance (including any superseding versions of same) and also have regard to the Freshwater Pearl Mussel Sub-Basin Management Plans.

Objective FL 2 – Surface Water Drainage and Sustainable Drainage Systems (SuDs)

Maintain and enhance, as appropriate, the existing surface water drainage system in the County. Ensure that new developments are adequately serviced with surface water drainage infrastructure and promote the use of Sustainable Drainage Systems in all new developments. Surface water run-off from development sites will be limited to pre-development levels and planning applications for new developments will be required to provide details of surface water drainage and sustainable drainage systems proposals.

Objective WW 7 – Surface Water Drainage and Sustainable Drainage Systems (SuDS)

Maintain and enhance, as appropriate, existing surface water drainage systems in the County, ensure that new developments are adequately serviced with surface water

drainage infrastructure and promote the use of Sustainable Drainage Systems in all new developments.

2.0 SITE DESCRIPTION

2.1 Proposed Development

The proposed development consists of a Waste Transfer Station (WTS) where small collection loads of waste or recyclables will be put into bulk loads for transport to landfill, composting or recycling facilities at other locations. No waste will be treated at the site, discharged into ground or surface water. Foul / floor wash waters will be tankered to the existing Irish Water Ballinasloe or Athlone Waste Water Treatment Plant (WWTP).

The WTS comprises the following elements:

- 1,080 m^2 waste transfer station building
- Ancillary office units
- Staff and visitor car park
- Truck parking area
- Weighbridge
- Truck unloading bay
- Skip unloading bay
- 1.75m^3 Hydrocarbon Interceptor (Full Retention Petrol Separator)
- 2 No. 6.0m^3 Foul Water and Floor Wash Water Holding Tanks
- Culverting of drain at entrance

The WTS will accept 23,400 tonnes per annum (TPA) of waste. The waste will be tipped from the arriving vehicles into the transfer station building, through doors on the northern side. The receiving floor will be 1.4m lower than the raised unloading bays. All transfer reloading of recyclables and waste will be undertaken within the building. Removal transfer vehicles will enter the building from the eastern end and exit at the western end, having been loaded from the northern side, fully protected from wind and rain, thus minimising impacts on air and water. The site levels will be constructed with clean quarry stone and gravel material.

Domestic waste will come variously as collection loads of either recyclables or waste (which vehicles are gradually being phased out) or the newer replacement twin collection vehicles with one side recyclables and other side waste (to allow the two bins to be collected on the same

journey). These loads will be simply reloaded into the larger transfer vehicles for efficiency of longer haulage.

Skips will tip at the more easterly unloading door. Here sorting of skip material will be undertaken as it is moved across the floor to move recyclables and waste separately to the transfer vehicles.

No other processing of waste will occur within the building. Waste will generally be removed from the building within 24 hours of its arrival on site or as soon as transfer vehicles are fully laden. Waste transferred from the site will go to other waste permit/waste licence facilities.

Foul water generated onsite will be of domestic source only from the Office / Canteen building. Floor wash water / skip rainwater will drain to a separate holding tank. As mentioned, foul waters and floor wash water will be tankered offsite to the Irish Water Ballinasloe or Athlone WWTP. The wastewater generated at the site is limited. The calculated population equivalent (PE) for the site is <20. As all waste will be handled indoors, there is no linkage between the waste handled indoors and the surface water network.

The Best Available Technology (BAT) guidance requires that:

- only uncontaminated water such as roof-water is appropriate for direct discharge to surface waters;
- foul water is discharged to surface water following appropriate treatment only; and
- other surface water discharges must be passed through a silt trap and interceptor (I.S. EN 858-2:2003 Part 2).

In addition, attenuation storage is provided on site as detailed on Figure 7526--2443.

A variety of items of plant will be in use during the Construction Phase. These will include excavators, trucks and generators. The key phases of works will involve site clearing and preparation, excavations and concrete foundations, steel erection and shell construction.

2.1.1 *Waste Water Drainage System Overview*

All handling of waste will be within the proposed transfer building. All waste will be tipped within the building and any run off from the building will be collected in the foul water system. It is proposed to wash each area of the transfer station two times every week. The washdown water generated is proposed to drain to a waste water holding tank on site. There will therefore not be any risk to the adjacent watercourses/groundwater as a result of the proposed waste water holding tank. Waste water generated from the administration building will be stored in a similar way in a separate foul sewage holding tank. Details of the development's waste water drainage are shown on Drawing No. 7526-2443.

It is proposed to drain all waste water (both foul water and washdown water) to the on-site waste water holding tanks. Two 6m^3 holding tanks are proposed. One of these tanks is to service the foul water from the administration building shown in Drawing. 7526-2445 and will need to be emptied once every 7 days. The second of these tanks is to be used to gather water brought in on waste and in skips and to service the washdown of the waste transfer building shown on Drawing. 7526-2443 and will need to be emptied once every 7 days.

Based on the above information, it is accepted that the WWTP has capacity to accept waste from the proposed development under its existing licence.

2.1.2 *Full Retention Petrol Interceptors*

Based on an impermeable drainage area of 9,000 square metre (sqm), a Klargester NSFA175 Full Retention Petrol Separator is proposed prior to discharge the attenuation.

All wastes are handled indoors so emissions of dusts from the building are unlikely. The types and nature of waste handled at the facility do not create any significant dust. The facility is kept clean and vehicles are washed in designated areas to prevent dust.

2.2 Existing Environment

The proposed WTS development site is located on a 1.07hectare (ha) greenfield site, approximately 2km south of Ballinasloe town centre, south of the M6 in the townland of Pollboy, Co. Galway. An ecological site walkover was undertaken by TOBIN ecologists in the 1st June 2016, 17th June 2016, 9th February 2020, 11th November 2019, 19th February 2020, 17th June 2020 and 30th August 2020.

A series of site visits have been conducted for the current application for approval. Ecological site surveys for the current application were carried out on the 1st June 2016, 17th June 2016, 9th February 2020, 11th November 2019, 19th February 2020, 17th June 2020 and 30th August 2020 to collect survey data as part of the ecological impact assessment for the proposed development.

During the surveys, particular attention was given to the possible presence of habitats and/or species which are legally protected in Ireland under European legislation and which may be associated with designated European sites. Potential pathways for impacts affecting designated European sites at a distance from the development footprint were also investigated. Digitised field maps with aerial imagery and electronic data recording using ArcGIS Online were utilised in the field to ensure accurate location and extents of ecological features of interest.

2.2.1 *Terrestrial Habitats and Flora*

The habitat survey was conducted within the study area and took in adjacent land in accordance with The Heritage Council's methodology '*Best Practice Guidance for Habitat Survey and Mapping*' (Smith *et al.*, 2011). Habitats were classified according to The Heritage Council's *A Guide to Habitats in Ireland* (Fossitt, 2000) and following the EU *Habitats Interpretation Manual for Annex 1 Habitats*. Plant identification and nomenclature principally follows Webb *et al.* (1996)[ii]. Grass and fern identification and nomenclature was further assisted by Rose (1989)[iii]. The predominant plant species for each habitat type were recorded in order to accurately determine habitats present on the site.

Habitats onsite included grassland areas with willow treelines and immature conifer plantation also present. Land use in the immediate surrounding area included a closed landfill, access tracks, M6 motorway and a waste disposal facility (civic amenity) located on the eastern boundary of the site. No waste, no leachate or landfill infrastructure is present on the proposed site. A 8m high motorway flyover and 8m embankment is also located to the east. On the opposite side of the motorway flyover, scrub, motorway embankments and conifer plantations comprise the majority of land up to 1km from the site. To the north of the motorway, a mix of agricultural lands, retail, industrial and housing developments are located outside of the River Suck floodplain. To the west of the development site the land is used mainly for semi mature conifer plantations grazing and rough grazing. The former Pollboy Landfill is located to the south and maintained by Galway County Council. Final capping is in place and a closure plan is

implemented by Galway County Council. No waste has been deposited at the landfill since 2005 and the landfill will continue to be maintained as a closed landfill.

The proposed development is within the Aughrim poorly productive bedrock groundwater body, which is categorised as "Expected to achieve good status"[iv]. The site is drained by ditches created as part of the M6 motorway construction works. These surface water drainage channels drain into the Loughbrown River which joins the River Suck approximately 1.5km downstream. Water quality within the River Suck at Pollboy Station (c. 500m upstream of confluence of Loughbrown River and Suck) is categorised as "moderate" with a Q-value of Q3-4. Approximately 4km downstream of the confluence (Station name: Correen Ford) water quality remains at moderate with a Q-value of Q3-4. This classification is based on a low macro-invertebrate value (Q-Value) according to (McGarrigle *et al.*, 2002)[v]. Both the Loughbrown and Suck rivers are recorded as at risk of not achieving good status.

Groundwater vulnerability ranges from low in the eastern edge of the proposed development to moderate along the western area of the proposed development[vi]. The proposed development overlies a Locally Important Aquifer - Bedrock which is Moderately Productive only in Local zones .

The site is linked to the River Suck via surface water drainage. During the site survey water flow in drainage channel along the northern and eastern boundaries was noted to be stagnant or very slow flowing. High levels of instream vegetation including Bulrush (*Typha latifolia*), Yellow iris (*Iris pseudacorus*), willow (*Salix sp.*) and alder (*Alnus glutinosa*) shrub illustrated that this reflected normal site conditions. The northern drain was dry in June 2020. Dry drains which form part of the surrounding grassland habitats delineate the southern and western boundaries of the site. A dry drain running in a west to east direction divides the site in two. It is likely that during wetter months that water collects within this drain as there was evidence of poaching with wooden planks laid across one section forming a crossing point. No evidence of flooding was noted on the site based on site observations and the Flood Risk Assessment.

No rare or protected flora or fauna were recorded on the site in 2020. No high risk invasive species are present on the site. Devil's Bit Scabious was noted on the site (the foodplant of the Marsh Fritillary butterfly); however, no Marsh Fritillary was recorded during the ecological surveys. Aquatic habitats are considered to be of low ecological value or local ecological value on the site as drainage features were noted to be dry/damp or with low flow/stagnant conditions.

3.0 SCREENING FOR APPROPRIATE ASSESSMENT

3.1 Introduction to Screening

This stage of the process identifies whether there is the potential for significant impacts upon designated European sites from the proposed project, either alone or in-combination with other projects or plans. The screening phase was progressed in the following stages. A series of questions are asked during the Screening Stage of the AA process in order to determine:

- Whether the project can be excluded from AA requirements because it is directly connected with or necessary to the management of a designated European site; and
- Whether the project will have a potentially significant effect on a designated European site, either alone or in combination with other projects or plans, in view of the site's conservation objectives or if residual uncertainty exists regarding potential impacts.

An important element of the AA process is the identification of the 'Qualifying Interests' of European sites requiring assessment. Qualifying Interests are the habitats and species for which each European site has been designated and afforded protection. It is also vital that the threats to the ecological / environmental conditions that are required to support Qualifying Interests are considered as part of the assessment. Site specific conservation objectives have been designed to define favourable conservation status for a particular habitat or species at that site. According to the European Commission interpretation document '*Managing Natura 2000 sites: The provisions of Article 6 of the 'Habitats' Directive 92/43/EEC*', Paragraph 4.6.4 states:

"The 'integrity of the site' can be usefully defined as the coherent sum of the site's ecological structure, function and ecological processes, across its whole area, which enables it to sustain the habitats, complex of habitats and/or populations of species for which the site is designated."

The favourable conservation status of a species is achieved when:

- Population dynamics data on the species concerned indicate that it is maintaining itself on a long-term basis as a viable element of its natural habitats;
- The natural range of the species is neither being reduced nor is likely to be reduced for the foreseeable future; and
- There is, and will probably continue to be, a sufficiently large habitat to maintain its populations on a long-term basis.

3.2 Desktop Studies

Sources of information that were used to collect data on the Natura 2000 network of sites are listed below:

- Ballinasloe Town Local Area Plan
- Biodiversity Data for County Galway including that collated in the Biodiversity Action Plan for County Galway 2008 – 2013
- Galway County Development Plan 2015-2021
- Information on water quality in the area available from www.epa.ie including www.catchments.ie
- Information on the River Basin Districts from www.wfdireland.ie
- Information on soils, geology and hydrogeology in the area available from www.gsi.ie
- OSI mapping and aerial photography available from www.osi.ie and Google Earth and Bing aerial photography.
- Online data available on European sites as held by the NPWS from www.npws.ie.
- Status of EU Protected Habitats in Ireland (National Parks & Wildlife Service).

The ecological desktop study completed for the proposed development comprised the following elements:

- Identification of designated European sites within 15 km with identification of potential pathways links for specific sites (if relevant) greater than 15 km from the proposed development study area;
- Review of the NPWS site synopsis and conservation objectives for designated European sites with identification of potential pathways from the proposed development;
- Review of records of rare and protected flora and fauna including information obtained from an NPWS data request, and those available in NPWS reports and on the National Biodiversity Data Centre (NBDC) website;

- A review of available EPA water quality reports and mapping[vii] and Water Framework Directive[viii] Water Quality data;
- Review of Ordnance Survey maps and aerial photography in order to determine broad habitats that occur within the study area; and
- Review of any other relevant ecological reports and literature including previous EIS reporting (RPS, 2001) for the former landfill development to the south of the site.

3.3 Study Area and Zone of Influence

As mentioned, the proposed development includes a waste transfer facility on a 1.07 ha site. The study area comprised the proposed development site and the wider surrounding 100m. While this waste permit NIS applies to the operational phase of the facility, construction phase impacts are also assessed and addressed herein.

The Zone of Influence (ZoI) for a project is the area over which ecological features may be affected by biophysical changes as a result of the proposed project and associated activities, such that it could potentially have significant effects on the qualifying interest habitats or qualifying interest/ special conservation interest species of a European site, or on the achievement of their conservation objectives (as defined in CIEEM, 2018).

The mechanism for defining the ZoI is summarised as follows:

- the nature, size and location of the proposed development were considered;
- the sensitivities of the relevant ecological receptors were considered; and
- the potential impact sources and pathways were identified.
- Using the source-receptor-pathway model an examination of the potential effects of the project was undertaken (alone and in-combination) to identify what European sites, and which of their qualifying interests or special conservation interest species were potentially at risk. This was required to determine the Zone of Influence (ZoI) for the proposed development.

The ZoI was determined by considering all of the above, in order to determine which European sites are within the ZoI of the proposed development, and therefore potentially at risk of significant effects from the proposed development.

In determining the ZoI of the proposed development consideration was also given to whether distant European sites fall within the ZoI of the proposed development for ex situ impacts on qualifying interest/ special conservation interest species, considering the species' foraging range, home range and connections between sites they use (e.g. for birds connections between breeding, roosting and feeding sites). To this end, the ZoI extends outside of the proposed development footprint to include ecological receptors connected to the project though overlap / intersection, proximity and connectivity through features such as watercourses.

The ZoI was first assessed in a desk study review of ecological information that was pertinent to the proposed development, focusing on a 15km buffer around the proposed development.

Dust and Air Quality ZOI

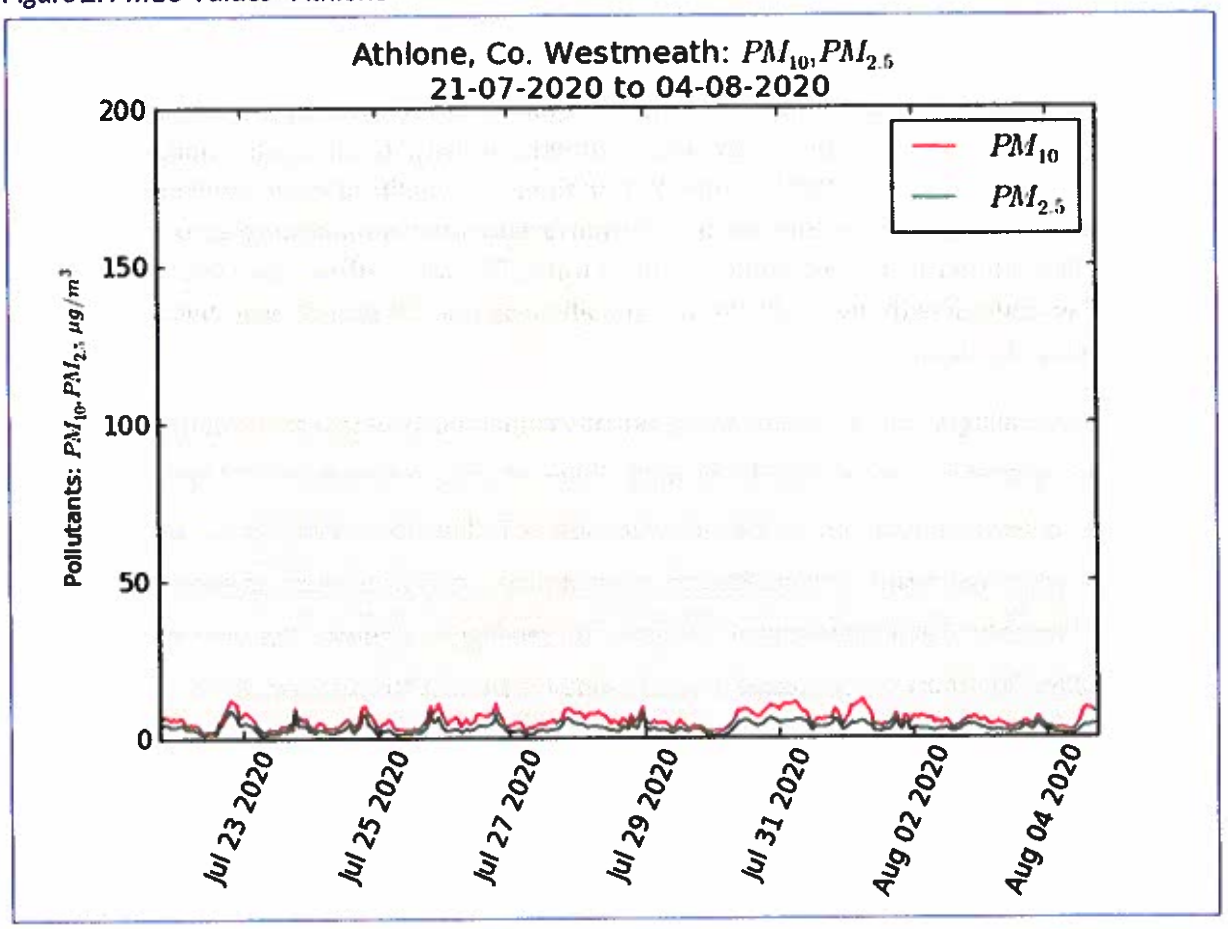
Emissions from construction vehicles and machinery, and the deposition of particulate matter (PM) and heavy metals produced by engine, brake and tyre wear can contribute to increased deposition of pollutants such as oxides of nitrogen (NOX, NO3), volatile organic compounds (VOCs), PM, heavy metals, and ammonia (NH4) in the vicinity of the proposed development. This can affect the ecosystems and vegetation present, influencing plant growth rates and species composition, diversity and abundance. Dust emissions associated with construction works could, in extreme circumstances, affect adjoining habitats (potentially burying sensitive habitat or plant species). The effects of air pollution on vegetation and habitats are generally greatest within 50 to 100m of a road carriageway for instance but effects can extend up to 200m (NRA 2011); it is expected this would be significantly lower due to the scale of the project compared to a national road scheme. It is noted in the DoEHLG (2004) Quarry guidelines that the most severe dust conditions are likely to be experienced within about 100m of the dust source, with potential effects extending 0.5km from the source[ix].

A study in the UK (MIRO, 2011) gives estimates of likely dust deposition levels in specific types of environments. In open country a level of 38 mg/m2/day is typical, rising to 56 mg/m2/day) on the outskirts of towns. Dust impact decline exponentially with distance away form the source due to dispersion and dilution.

In terms of NO2, PM10 and PM2.5 air quality monitoring programmes have been undertaken in recent years by the EPA. The most recent annual report on air quality, "Air Quality Monitoring Report 2018" (EPA 2019), details the range and scope of monitoring undertaken throughout Ireland. As part of the implementation of the Air Quality Standards Regulations 2002 (S.I. No. 271 of 2002), four air quality zones have been defined in Ireland for air quality management and assessment purposes (EPA, 2020). Zone A is defined as Dublin and its environs, Zone B is defined as Cork City, Zone C is defined as 23 urban areas with a population greater than 15,000 and Zone D is defined as the remainder of the country. The area within which the site is located is classed as Zone D with levels of PM10 typically less than 25ug/m3, well below the EU air quality standards (50ug/m3).

Given the prevailing winds at the site are generally from a south westerly direction and that the nearest designated European site (River Suck Callows) is approximately 1.15 km northeast of the proposed development and on the opposite side of Ballinasloe town, significant impacts are unlikely to occur as a result of dust. Results from similar urban areas such as Athlone are below Statutory Limits for Particulate matter (50 $\mu g/m^3$) – see Figure 2 below. The zone of influence for dust is <500m. Therefore the proposed project is outside the ZOI for dust and air emissions.

Figure 2: Pm10 Values - Athlone[x]



Noise ZOI

Noise caused by activities/machinery and personnel/vehicle movements during construction and operational phases are unlikely to cause a significant impact to designated European sites as they are all sufficiently removed. The IECS 2009 report (Cutts et al., 2009) defines disturbance in the general context as discrete events that disrupt ecosystem, community or population structures or in some way alter resource levels i.e. food and space. No impact was noted on a regular noise source below 50dBA. Noise level at a distance of 500 m would be less than 35dBA. Minimal effects would be expected beyond 300m. In terms of construction noise, within 100m of the noise, levels below 50dB would not be expected to result in any response from foraging or roosting birds. Noise levels between 50dB and 70dB would provoke a Moderate effect/level of response from birds – i.e. birds becoming alert and some behavioural changes (e.g. reduced feeding activity) – but birds would be expected to habituate to noise levels within this range. Noise levels above 70dB would likely result in birds moving out of the affected zone or leaving the site altogether. This is supported by the findings of Wright *et al.* (2010)[xi]

which found that noise levels above 60dB resulted in behavioural responses, with birds abandoning the site in response to noise levels above 70dB.

Given that habitats are not impacted by noise disturbance, the only designated European sites containing qualifying interests potentially disturbed by noise impacts is the River Suck Callows SPA, which is located 1.15 km away. Noise at the facility would be inaudible at a distance of 1 km. The town of Ballinasloe is located between the development site and River Suck Callows SPA.

Bird species can be sensitive to disturbance, potentially displacing within 100m to 200m of people and responding to vehicular traffic at 200m to 250m, although birds generally immediately re-settled elsewhere. The River Suck Callows is greater than or equal to 1km in width from east to west. This width provides sufficient distance between feeding birds on the western callows and construction activities thereby limiting the potential for ecologically significant disturbance displacement effects.

Noise levels associated with typical construction activity have been calculated in accordance with the methodology set out in BS 5228:2009 '*Code of Practice for Noise and Vibration Control on Construction and Open Sites – Part 1 Noise*'. This standard sets out sound power levels for plant items normally encountered on construction sites, which in turn enables the prediction of noise levels. A variety of items of plant will be in use during the Construction Phase. These will include excavators, trucks and generators. The key phases of works will involve site clearing and preparation, excavations and concrete foundations, steel erection and shell construction. None of the construction activities listed above would be expected to result in any more than a Low-Moderate level of disturbance effects as noise levels will be below the motorway noise levels. Due to the existing roads and activity on site it is unlikely that any protected bird species utilise the site and none were recorded during any of the walkover surveys.

The zone of influence for noise is <500m. Therefore the proposed project is outside the ZOI for dust and air emissions.

Lighting ZOI

Lighting can impact nocturnal foraging species such as bats. Bats are not a qualifying interest of any designated European sites within 15 km of the proposed development. Therefore, significant impacts are unlikely to occur as a result of lighting. There will be some artificial security lighting associated with the works; however, this will be minimal and overspill of light

will be minimised through directional lighting (i.e. aimed directly onto the site and not the wider landscape) so as to leave the areas outside of the footprint unilluminated. The proposed use of cowls, lighting hoods, or louvres fitted to the rear of luminaries, and/or shields to direct light in a downwards and inwards fashion to intended areas only. This is required due to the presence of M6 to the north of the site. Significant lighting is already in place on the adjacent Civic Amenity site (approximately 10 lights) as well as intermittent light disturbance from the M6. A significant screening/light shadow is cast by the 8m overpass to east of the site. The zone of influence for light is <100m. Therefore the proposed project is outside the ZOI for light emissions.

Hydrological ZOI

With regards to potential habitat degradation effects associated with the release of sediment and other pollutants to surface water, the Zol of the proposed development is considered to include the receiving waterbodies adjacent to or downstream of the proposed development site during the construction phase. The distance downstream is associated with the current biological condition of the accepting waterbody and its capacity to accept wastewater (assimilative capacity).

Foul water will be discharged to a licenced and compliance WWTP with sufficient capacity. Athlone WWTP has sufficient capacity at present[xii]. Ballinasloe WWTP will be used if sufficient capacity is available.

All surface water from the proposed development will drain to the east a tributary of the River Suck. The River Suck Callows SPA is located 1.5km east of the site and the surface water drainage channels from the site drain into the Loughbrown River, which joins the River Suck >1.5km downstream. There are no proposed alterations to the groundwater environment.

A number of WWTP plants are available to cater for the foul water generated on site. Based on experience at similar Waste Transfer Stations, a maximum of $2m^3$ per day or 20 PE can be generated. Two holding tanks ($6m^3$ each) will be provided to hold the foul water on site. The Ballinasloe WWTP was upgraded to cater for a design loading from a population equivalent of 13,500 in 2006 (Phase 1 upgrade). The inlet and outlet works were designed for an ultimate population equivalent of 18,000. Based on a dry weather flow rate of 250l/head/day and a diurnal peaking factor of 3, the current hydraulic capacity of the WWTP is 10,125 m^3/day. Effluent monitoring data from 2006 – 2019 demonstrates that the WWTP has been operating

to its design standard and in compliance with the Urban Waste Water Treatment Regulations[xiii]. In a letter from Irish Water to the Environmental Protection Agency dated 1st May 2014, it is noted that the existing WWTP is considered sufficient to cater for wastewater loads up to 2020, based on a population growth rate of 10% from 2014-2020 (1.6% per annum)[xiv]. An EPA Wastewater treatment licence was granted on the 25th May 2015. The proposed development would contribute less than 0.1% of the WWTP capacity.

The AA Conclusion for the WWTP licence noted that Ballinasloe WWTP discharge, alone or in-combination with other plans and / or projects will not give rise to significant effects on the integrity of the River Suck Callows SPA, or the Middle Shannon Callows SPA and the River Shannon Callows SAC[xv].

The proposed development in underlain by deep low permeability soils (>12m) and the construction will not have a significant impact on the groundwater environment. There is no waste located on site and the contraction will not impact on the underlying bedrock aquifer. During the operational phase, the site will be hardstanding which will further prevent infiltration to groundwater.

All surface water from the proposed development will drain to the east a tributary of the River Suck. The River Suck Callows SPA was located 1.5km east of the site and that the surface water drainage channels from the site drain into the Loughbrown River, which joins the Suck River >1.5km downstream.

The following table sets out BAT emission limit values within a permit for discharges to surface water from storm water discharges – See Table 3-1.

Table 3-1: BAT-Associated Emission Level for Discharges to Surface Water

Constituent Group or Parameter [xvi]	Emission Levels
pH	*6 – 9 pH units*
BOD_5 (at 20°C without nitrification)	*25mg/l*
Chemical Oxygen Demand (COD)	*125mg/l*
Suspended Solids	*35mg/l*
Total Ammonia (as N)	*10mg/l*
Total Nitrogen (as N)	*15mg/l*

Constituent Group or Parameter [xvi]	Emission Levels
Total Phosphorus (as P)	*2mg/l*

The River Suck Callows SPA is hydrologically linked to the proposed development, the SPA is located more than 1.5 km downgradient from the proposed development and this distance increases when the meandering nature of the hydrological links is considered. The River Shannon Callows SAC and Middle Shannon Callows SPA are 13 km downgradient. However, significant impacts to SPAs cannot be conclusively ruled out as a result of surface water links.

Invasive species

Introduction and/or spread of non-native invasive species within the proposed development site, extending to roadside and designated European sites can lead to significant impacts to SACs or SPAs. The proposed development is designed in such a way that vehicles accessing the site will do so via a wheelwash. The use of a wheelwash is standard in the design of WTS. No invasive species were identified during ecological field surveys. Given the distance of each SAC/SPA from the proposed development, the absence of invasive species on site and given the proposed development will be an area of hard standing accessed via wheel wash, significant impacts to these SPAs are unlikely to occur as a result of invasive species.

The potential for significant adverse effects with respect to pathways for impacts between the development and designated European sites is presented in Table 3-2 below.

3.4 Consultation

Consultation with key state agencies was undertaken in April 2020 to inform the AA. Responses relating to the NIS are included in Appendix A.

3.5 Identification of Relevant European Sites

An initial distance of 15 km from the proposed site boundary was used for consideration of designated European sites in accordance with the Department of Environment, Heritage and Local Government guidance (DoEHLG, 2010) (see Figure 1). European sites in excess of 15 km with potential linkages to the proposed development were screened for potential impacts using the source-pathway-receptor model, taking account of the conservation objectives for these designations. Designated European sites within the ZoI of the proposed development, including the Qualifying Interests of each site, are detailed in Table 3-2: Screening Impact Assessment of

European Sites and their Qualifying Interests. There are no designated European sites within the footprint of the proposed development; neither are there any sites directly adjacent to the site boundary. Six European sites lay within 15km of the proposed development and are listed as follows:

- River Suck Callows SPA (Site Code: IE004097);
- Glenloughaun Esker cSAC (Site Code: IE002213);
- Killeglan Grassland cSAC (Site Code: IE002214)
- Castlesampson Esker cSAC (Site Code: IE001625);
- River Shannon Callows cSAC (Site Code: IE000216); and
- Middle Shannon Callows SPA (Site Code: IE004096).

Of these six European sites, three were found to be located within the ZoI of the proposed development; River Suck Callows SPA, River Shannon Callows SAC and Middle Shannon Callows SPA. No additional European sites were included within the assessment based on potential links as the only link deemed potentially significant (based on the type of development) was surface water.

Additional designated sites including proposed Natural heritage Areas (pNHA's), Natural Heritage Areas and RAMSAR sites where also reviewed as although they do not form part of the AA, they often provide important supporting functions to European sites.

3.6 Potential Adverse Effects on European Sites

This section documents the final stage of the screening process. It is vital that an assessment of potential source-pathway-receptor links is undertaken to assess potential impact links between the receptor (European sites) and source (proposed development) to establish the risk of any likely significant effects. It uses the information collected on the sensitivity of the Qualifying Interests of each European site and describes any likely significant effects from the proposed development.

3.6.1 Potential for Direct and Indirect Impacts

The closest European site, the River Suck Callows SPA, is located approximately 1.15 km northeast of the proposed development. With respect to the special conservation interests of

this European site and taking account of the separation distance between the proposed development and the site, there is no potential for direct impacts to occur. Lands up to 1km to the east of the site comprises a mix of berms, forestry and heathland/scrub and are considered suboptimal/unsuitable land for the special conservation interests of the River Suck Callows SPA.

Potential indirect impacts arising from the proposed development are identified with respect to the Source-Pathway-Receptor Model. Taking account of the size and scale of the proposed development, as well as the distance to the nearest designated European site, a number of the pathways for potential indirect impacts have been screened out, as discussed below.

3.7 Screening Impact Assessment

Table 3-2: Screening Impact Assessment of European Sites and their Qualifying Interests.

European Site	Qualifying Interests	Approx. distance (km)	Description of potential impacts from the proposed development	Potential for likely significant effects, either alone or in-combination?
Glenloughaun Esker cSAC (Site Code: IE002213);	Semi-natural dry grasslands and scrubland facies on calcareous substrates (Festuco-Brometalia) (* important orchid sites) [6210]	Glenloughaun is situated in County Roscommon, approximately 3.3 km north of the proposed development	NA	No pathways for potential likely significant effects.
Killeglan Grassland cSAC (Site Code: IE002214)	6210 Semi-natural dry grasslands and scrubland facies on calcareous substrates (Festuco Brometalia) (* important orchid sites) *	Killeglan grassland is situated in County Roscommon, approximately 9.5 km north of the proposed development	NA	No pathways for potential likely significant effects.
Castlesampson Esker cSAC (Site Code: IE001625);	3180 Turloughs* 6210 Semi-natural dry grasslands and scrubland facies on calcareous substrates (Festuco Brometalia) (* important orchid sites) * * denotes a priority habitat	Castlesampson is situated in County Roscommon, approximately 9 km north of the proposed development	NA	No pathways for potential likely significant effects.

European Site	Qualifying Interests	Approx. distance (km)	Description of potential impacts from the proposed development	Potential for likely significant effects, either alone or in-combination?
River Shannon Callows cSAC (Site Code: IE000216); and	Molinia meadows on calcareous, peaty or clayey-silt-laden soils (Molinion caeruleae) [6410] Lowland hay meadows (Alopecurus pratensis, Sanguisorba officinalis) [6510] Limestone pavements [8240] Alluvial forests with Alnus glutinosa and Fraxinus excelsior (Alno-Padion, Alnion incanae, Salicion albae) [91E0] Lutra lutra (Otter) [1355]	River Shannon Callows cSAC is situated approximately 12 km south east of the proposed development or approximately 13 km along the watercourses.	• Degradation in habitat quality	Yes Whilst located a significant distance downgradient of the facility, surface water pathways exist, therefore the potential for likely significant effects cannot be ruled out. No potential for noise, dust and lighting impacts, outside ZOI
Middle Shannon Callows SPA (Site Code: IE004096).	Whooper Swan (Cygnus cygnus) [A038] Wigeon (Anas penelope) [A050] Corncrake (Crex crex) [A122] Golden Plover (Pluvialis apricaria) [A140] Lapwing (Vanellus vanellus) [A142] Black-tailed Godwit (Limosa limosa) [A156] Black-headed Gull (Chroicocephalus ridibundus) [A179] Wetland and Waterbirds [A999	River Shannon SPA is situated approximately 12 km south east of the proposed development or approximately 13 km along the watercourses.	• Degradation in habitat quality	Yes Whilst located a significant distance downgradient of the facility, surface water pathways exist, therefore the potential for likely significant effects cannot be ruled out. No potential for noise, dust and lighting impacts, outside ZOI
River Suck Callows SPA Code: IE004097 c. 1.5 km east	• A038 Whooper Swan *Cygnus cygnus* • A050 Wigeon *Anas penelope* • A140 Golden Plover *Pluvialis apricaria* • A142 Lapwing *Vanellus vanellus*	River Suck Callows are situated on the Galway - Roscommon border, approximately 1.5 km north of the	• Degradation in habitat quality	Yes The proposed development includes protective measures which are considered an integral part of the development, e.g. the

European Site	Qualifying Interests	Approx. distance (km)	Description of potential impacts from the proposed development	Potential for likely significant effects, either alone or in-combination?
	• A395 Greenland White-fronted Goose *Anser albifrons flavirostris*	proposed development		standard drainage design measures. However protective measures should not be considered during the screening stage of the assessment. Without these typical protective measures likely significant effects cannot be ruled out, i.e. uncontrolled emissions of pollutants from the proposed development to sensitive surface water-dependent receptors (e.g. river or lake habitats) could lead to significant impacts. No potential for noise, dust and lighting impacts, outside ZOI

3.8 Screening Conclusion

The proposed development is not located within, or directly adjacent to, any European site. The AA screening process considered potential impacts which may arise during the construction, operational works for the proposed development in the absence of protective/mitigation measures.

Following an examination, analysis and evaluation of the relevant information, including in particular, the nature of the proposed development, its potential relationship with European sites, in view of best scientific knowledge, on the basis of objective information and in light of the conservation objectives of the relevant European sites, it is the professional conclusion of the authors of the report that it is not possible to rule out the possibility of significant effects on three European sites, namely;

- River Suck Callows SAC
- Middle Shannon Callows SPA, and
- River Shannon Callows SAC.

This conclusion has been reached on the basis of the potential impact sources and pathways associated with the proposed development which may put qualifying interest species or habitats/special conservation interest species at risk. For these reasons, it is the professional opinion of the authors of this report that the application for consent for the proposed development requires an AA to be undertaken, for which a NIS will be required to assess whether the proposed development would adversely affect the integrity of any European sites.

4.0 NATURA IMPACT STATEMENT (NIS)

4.1 River Suck Callows SPA No. 4097

The conservation objectives of the River Suck Callows SPA are to maintain or restore the favourable conservation condition of the bird species for which the site has been designated. These are laid out in the Table 4-1 below.

Table 4-1: Special Conservation Interests and Conservation Objectives of the River Suck Callows SPA

European Site	Special Conservation Interests	Conservation Objectives
River Suck Callows SPA Code: IE004097 c. 1.15 km north east (as the crow flies) 1.5km east	• A038 Whooper Swan *Cygnus cygnus* • A050 Wigeon *Anas penelope* • A140 Golden Plover *Pluvialis apricaria* • A142 Lapwing *Vanellus vanellus* • A395 Greenland White-fronted Goose *Anser albifrons flavirostris*	To maintain or restore the favourable conservation condition of the bird species listed as Special Conservation Interests for this SPA To maintain or restore the favourable conservation condition of the wetland habitat at River Suck Callows SPA as a resource for the regularly occurring migratory waterbirds that utilise it.

The River Suck Callows is an important site for wintering waterfowl. Recent annual maxima from 2006/7 to 2010/11 show a mean wildfowl population of 6,227 (Crowe *et al.* 2012) falling to 4,901 with more recent IWebS data. This decline in wildfowl is a countrywide phenomenon for White-fronted goose, Wigeon, Teal and Mallard, which are the main species on the River Suck. For waders the site totals 2,732 which is also a lower number than formerly, reflecting trends in Lapwing and Golden Plover (Crowe *et al.* 2012)[xvii]. Counts of Whooper Swans on the River Suck are on average 138 (Lewis *et al.* 2019)[xviii]. The current numbers give international standing to the site for Mute Swan and national importance to Whooper Swan, Greenland white-fronted goose, Wigeon, Golden Plover and Lapwing.

This site is of considerable ornithological importance on account of the Greenland White-fronted Goose population which is of national significance and which is one of the largest in the country outside of the Wexford Slobs. Of note is that three of the species which occur regularly, Greenland White-fronted Goose, Whooper Swan and Golden Plover are listed on Annex I of the E.U. Birds Directive.

The site is a SPA under the E.U. Birds Directive, of Special Conservation Interest for the following species: Whooper Swan, Wigeon, Golden Plover, Lapwing and Greenland White Fronted Geese. 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 and Waterbirds.

The good quality riverine and grassland habitats are also home to populations of Otter and Irish Hare, and Brown Trout occur in the river. Arterial drainage in the past has already reduced the area of naturally flooded grasslands, and drainage and land improvement remain the principal threat to this site. The intensification of agriculture in recent years, with earlier mowing and the replacement of hay with silage, is likely to have caused the decline and eventual absence of breeding Corncrake. Wildfowling causes some disturbance, though there is a Wildfowl Sanctuary at Muckanagh, north of Ballyforan, Co. Roscommon.

A site-specific conservation objectives document is not currently available for River Suck Callows SPA. However, a set of site specific conservation objectives has been compiled for the special conservation interests of River Suck Callows SPA and used to inform this assessment, based on site specific conservation objectives documents available for other European sites with equivalent special conservation interest species. This sets out the attributes, measures and targets that would be expected to define the favourable conservation condition of the special conservation interest species of River Suck Callows SPA. This approach was recommended by the NPWS (refer to the NPWS consultation response summary in Appendix A).

The specific attributes and targets used to define the conservation objectives of the qualifying interest species of the River Suck Callows SPA are presented in Table 4-3.

4.1.1 Ecological Baseline Description for River Suck Callows SPA 4097xix

The River Suck Callows comprise a long, sinuous area of semi-natural lowland wet grassland, which floods extensively each winter along the River Suck between Castlecoote in the north and Shannonbridge in the south and passing through Ballinasloe. The River Suck is the largest tributary of the River Shannon. The site follows the river from Castlecoote, near Fuerty to its confluence with the River Shannon, a distance of approximately 70 km of river course. The main habitat is grassland, improved to varying extents, that is seasonally-flooded. The less improved areas are species-rich. Here the vegetation consists of Common Sedge (*Carex nigra*), Creeping Bent (*Agrostis stolonifera*), Brown Sedge (*Carex disticha*), Marsh Foxtail (*Alopecurus geniculatus*), Reed Canary-grass (*Phalaris arundicacea*), Creeping Buttercup (*Ranunculus repens*), Jointed Rush (*Juncus articulatus*), Common Spikerush (*Eleocharis palustris*) and Floating Sweet-grass (*Glyceria fluitans*). Many of these species are important food plants for the wintering wildfowl which also forage on the improved grasslands within the site. A large area of flooded fen with Black Bog-

rush (*Schoenus nigricans*) and Common Reed (*Phragmites australis*) occurs to the north of Derrycahill Bridge. Small patches of Common Club-rush (*Scirpus lacustris*) occur in shallows along the river margin. The grassland is used mainly for pasture, but some is also used for silage or occasionally hay-making.

The Proposed Project boundary is located 1.5km west of and does not overlap with this European site. However, the Proposed Project area drains to River Suck Callows SPA c.1.5km downstream, via the Loughbrown River.

Greenland white-fronted geese historically wintered on bogland, callowland and rough grassland where they fed by uprooting cyperacean species in particular *Eriophorum angustifolium*. No stands of *Eriophorum angustifolium* occur on the site. In the latter half of the 20th century they have increasingly used grassland habitats and have shown good flexibility in adapting to new food sources including agricultural stubbles and fodder beet. The decline in the global population continues and is mainly attributed to climate-related changes and increased competition for nest sites with the expanding population of breeding Canada geese. It is an amber-listed species of conservation concern (Colhoun & Cummins, 2013). The most significant population of these geese in Ireland is found in the Wexford slobs. Counts for the River Suck published in the International Census of Greenland white-fronted geese report indicates counts in the river have fluctuated in recent years but appear to be increasing since 2010 with the 2012-2013 at 196 (Fox *et al.* 2015[xx]) and 109 in 2017-2018 (Fox *et al.* 2017/2018[xxi]).

The Lapwing wintering population moves in from continental Europe and northern and western Britain (NPWS, 2011). They are traditionally 'inland' waders principally using lowland farmland and freshwater wetlands (e.g. Turloughs and Callows). They are opportunistic and mobile birds and will readily exploit temporary food sources such as newly-ploughed fields where they feed on a variety of soil and surface-living invertebrates such as small arthropods and earthworms. They are a red-listed species of conservation concern (Colhoun & Cummins, 2013).

Golden Plovers that winter in Ireland are thought to be mostly the Icelandic-breeding subspecies. In winter they primarily feed within agricultural grassland and arable land. They eat a wide range of soil and surface-living invertebrate species including beetles and earthworms, but also on plant material such as berries, seeds and grasses. They are a red-listed species of conservation concern (Colhoun & Cummins, 2013[xxii]).

Wigeon are common and widespread throughout Ireland in the winter where they occur on the coast and in inland wetlands, lakes and rivers. Away from coasts they graze on algae and also regularly feed on grasslands and cereal crops. They are an amber-listed species of conservation concern (Colhoun & Cummins, 2013).

Whooper swans are primarily herbivorous, feeding on aquatic plants, grasses and agricultural plants such as grain and vegetables. The most recent published swan census (Hall *et al.* 2012) indicated that just over 50% of the habitat usage records for Whooper Swans were for dry improved pasture with 37.5% seen on arable land. The count in the River Suck region for this species in 2010 was 331 up 2% from 2005. Nationally the most important sites for Whooper swan are Lough Foyle and Upper Lough Erne. They are an amber-listed species of conservation concern (Colhoun & Cummins, 2013).

4.1.2 Examination and Analysis of Potential Direct and Indirect Impacts

As the Proposed Project does not overlap with River Suck Callows SPA, the habitat supporting the special conservation interests within the SPA will not be directly impacted. River Suck Callows SPA also lies beyond the ZoI of any noise, lighting, or air quality impacts. Lands up to 1km to the east of the site comprises a mix of motorways road and berms, agriculture, forestry and heathland/scrub and are considered suboptimal/unsuitable land for the special conservation interests of the River Suck Callows SPA. At a distance of 1.5km downgradient, the Proposed Project will not disturb or displace wintering birds at River Suck Callows SPA. The Construction and Operational Phase of the Proposed Project poses no risk of disturbing or displacing wintering birds from the SPA. However, there are potential impacts outlined in Section 4.1.3 and Section 4.1.4 by which the Proposed Project could (in the absence of mitigation measures) potentially affect the conservation objective attributes and targets supporting the conservation condition of the special conservation interest bird populations of River Suck Callows SPA.

Wetlands are also listed as a feature of the SPA. Eutrophication has the potential to alter wetland habitats as certain wetland species would be sensitive to changes in water quality. Influxes in nutrients can result in a shift in species composition toward more tolerant competitive species and a loss of rarer species which typically require lower nutrient inputs. Floristic diversity generally decreases, and sensitive invertebrate species may be lost. Some aquatic plants and algae may increase in biomass. Most of the species listed as features of the SPA feed terrestrially in agricultural fields adjacent to the River Suck.

4.1.3 Construction Phase

4.1.3.1 Habitat Degradation as a Result of Hydrological Impacts

As the Proposed Project drains to the River Suck Callows SPA, construction works pose a potential risk of affecting water quality in the European site through an accidental spillage of cement-based products or accidental spillage of hydrocarbons.

4.1.3.2 Habitat Degradation as a Result of Introducing or Spreading Non-Native Invasive Species

As the Proposed Project drains to the River Suck Callows SPA, there is the potential that non-native invasive species could be introduced to the surface water network and establish populations downstream in the European site.

Introducing non-native invasive species to River Suck Callows SPA has the potential to affect the quality of the wetland habitat that supports the conservation condition of the special conservation interest bird populations of River Suck Callows SPA.

4.1.3.3 Habitat Degradation as a Result of Air Quality Impacts

Depending on the particle size and weather conditions, fine particles (< 10µm) of dust generally travel up to 1 km, although ultrafine particles (< 2.5µm) can travel further[xxiii]. It is noted in the DoEHLG (2004) Quarry Guidelines that the most severe dust conditions are likely to be experienced within about 100m of the dust source, with potential effects extending 0.5km from the source[xxiv]. Given the prevailing winds at the site are generally from a south westerly direction and that the nearest designated European site is approximately 1.15 km northeast of the proposed development, significant impacts are will not to occur as a result of dust.

4.1.3.4 Habitat Loss and Disturbance Impacts Outside of the SPA Boundary

No special conservation interest species of River Suck Callows SPA were recorded using the site. None of these species were recorded using habitat in the immediate vicinity of the proposed construction works. The site is located adjacent to a civic reception site, closed landfill, and motorway. No waste, no leachate or landfill infrastructure is present on the proposed site.

The total area of site is 0.01 km^2, and the construction of the site will result in the loss of c. 0.01km^2 (1 hectare) of grassland habitat. This represent a loss of <0.075% of the area within 1.5km of the River Suck (13,000 hectares). The loss of a sub optimal habitat area this small, outside of the boundary of River Suck Callows SPA, and surrounded by unsuitable/suboptimal

habitat will not have any significant effect on habitat availability or prey abundance that would affect population numbers.

Ballinasloe town is located between the site and SPA. The Construction and Operational Phase of the Proposed Project will not result in any disturbance or displacement effects on wintering or breeding birds using the River Suck Callows.

Given the temporary nature of the construction works, and the relatively small area of habitat that will be lost or temporarily affected during the Construction Phase by disturbance compared to the total area available to the bird populations within the SPA, there will not be any significant long-term effects on the breeding or wintering bird populations of the River Suck Callows SPA due to either habitat loss impacts or disturbance effects during the Construction Phase.

Noise caused by activities/machinery and personnel/vehicle movements during construction and operational phases are unlikely to cause a significant impact to designated European sites as they are all sufficiently removed. Given that habitats are not impacted by noise disturbance, the only designated European site containing qualifying interests potentially disturbed by noise impacts is the River Suck Callows SPA, which is located over 1.15 km away, on the opposite side of Ballinasloe town. Noise at the facility would be inaudible at a distance of 1.15 km.

Lighting can impact nocturnal foraging species such as bats. Bats are not a Qualifying Interest of any designated European sites within 15 km of the proposed development.

4.1.4 Operational Phase

4.1.4.1 Habitat Degradation as a Result of Hydrological Impacts

Although there will not be any foul water discharges to the surface water network during the Operational Phase, storm water will be discharged to the swale to the north of the site; therefore there is a risk to water quality in receiving watercourses.

Affecting water quality in receiving watercourses and in the River Suck Callows SPA has the potential to affect the conservation objectives supporting the conservation condition of the special conservation interest bird populations of the River Suck Callows SPA.

4.1.4.2 Habitat Degradation as a Result of Introducing or Spreading Non-Native Invasive Species

During the Operational Phase, there is no significant risk that non-native invasive plant species may colonise lands post-construction due to the extensive hardstanding on the site.

4.1.5 Summary

Table 4-2 presents a summary of the potential impacts on the special conservation interest species of the River Suck Callows SPA as a result of the Proposed Project. All five species have been recorded within the ZoI of the Proposed Project.

Table 4-2: Special Conservation Interest Species of the River Suck Callows SPA and Summary of Impacts

Special Conservation Interests	Impact
A038 Whooper Swan *Cygnus cygnus*	*Habitat degradation – hydrology* *Habitat degradation – non-native* invasive *species*
A050 Wigeon *Anas penelope*	
A140 Golden Plover *Pluvialis apricaria*	
A142 Lapwing *Vanellus vanellus*	
A395 Greenland White-fronted Goose *Anser albifrons flavirostris*	

Table 4-3: Potential Impacts on the Conservation Objectives of the River Suck Callows SPA (Those qualifying interests, and the supporting attributes, measures and targets [taken from the Conservation Objectives

Attributes and Measures	Target	Potential Impacts Requiring Mitigation?	Are Mitigation Measures Required?	Residual Impacts?
Whooper Swan *Cygnus cygnus* Wigeon *Anas penelope* Greenland White-fronted Goose *Anser albifrons flavirostris* Golden Plover *Pluvialis apricaria* Lapwing *Vanellus vanellus* To maintain or restore the favourable conservation condition of the species in the River Suck Callows SPA, which is defined by the following list of attributes and targets:				
Breeding population abundance (apparently occupied nests [AONs]: number)	No significant decline	Yes The River Suck Callows SPA site boundary lies more than 1.5km downstream of the site (1.15km as the crow flies). A reduction in water quality in the River Suck could affect factors that support the wintering population, such as prey abundance/biomass. Such impacts could potentially affect the number and range of areas used by the special conservation intertest species and the population numbers in the SPA.	Yes Measures to maintain water quality in receiving watercourses during the Construction Phase will be implemented to ensure the receiving freshwater environment is protected and impacts downstream of the Proposed Project on habitats in River Suck Callows SPA are avoided (Section 4.5).	No

Attributes and Measures	Target	Potential Impacts Requiring Mitigation?	Are Mitigation Measures Required?	Residual Impacts?
Productivity rate (mean number)	No significant decline			
Prey biomass available (kilogrammes)	No significant decline			
Distribution: breeding colonies (number; location; area [hectares])	No significant decline	Yes The River Suck Callows SPA site boundary lies more than 1.5km downstream of the site. (1.15km as the crow flies). A reduction in water quality in the River Suck could affect factors that support the wintering population, such as prey abundance/biomass. Such impacts could potentially affect the number and range of areas used by the special conservation intertest species and the population numbers in the SPA.	Yes Measures to maintain water quality in receiving watercourses during the Construction Phase will be implemented to ensure the receiving freshwater environment is protected and impacts downstream of the Proposed Project on habitats in River Suck Callows SPA are avoided (Section 4.5).	No
Barriers to connectivity (number; location; shape; area [hectares])	No significant increase	No Watercourses at the Proposed Project that drain to this SPA, more than 1.5km from the River Suck Callows SPA and poses no risk of barrier effect to bird species or risk of disturbing breeding sites in the SPA.	No	No
Disturbance at breeding site (level of impact)	Human activities should occur at levels that do not adversely affect the breeding population			

Attributes and Measures	Target	Potential Impacts Requiring Mitigation?	Are Mitigation Measures Required?	Residual Impacts?
Population trend (percentage change)	Long term population trend stable or increasing	Yes The River Suck Callows SPA site boundary lies more than 1.5km downstream of the site. (1.15km as the crow flies). A reduction in water quality in the River Suck could affect factors that support the wintering population, such as prey abundance/biomass. Such impacts could potentially affect the number and range of areas used by the special conservation intertest species and the population numbers in the SPA.	Yes Measures to prevent the spread of non-native invasive species will be implemented to ensure they are not introduced to River Suck Callows SPA (Section 4.5). Measures to maintain water quality in receiving watercourses during the Construction Phase will be implemented to ensure the receiving freshwater environment is protected and impacts downstream of the Proposed Project on habitats in River Suck Callows SPA are avoided (Section 4.5).	No
Distribution (range, timing and intensity of use of areas)	No significant decrease in the numbers or range of areas used by waterbird species, other than that occurring from natural patterns of variation			

Habitats which are not within the boundary of a designated site but occur within the wider surroundings may provide supporting habitat to the species for which the site is designated. This can particularly be the case where mobile species such as birds are involved. The likely potential significant effect to avian communities within the vicinity of the proposed development area have been divided into two main areas, habitat loss and fragmentation and disturbance displacement. These effects are associated with both the direct habitat loss associated with construction and the disturbance caused by the activity of machinery and staff within the proposed development area. Disturbance can result in a significant impact if it reduces the availability of resources for avian receptors.

The wetlands of the River Suck and by association the water bird communities of the SPA are dependent on water quality. Water quality perturbations associated with construction activity have potential to impact upon the ecologically sensitive waterways in the vicinity of the development. However, smaller streams and drainage ditches require water quality protection measures. Works that could give rise to impacts would be associated with sediment release during construction or potential contamination of surface water from concrete and / or fuels used during construction. With the implementation of best practise construction methods, as presented in Section 4.5 potential adverse effects on water quality and the potential for the introduction of invasive species are considered to be unlikely. Birds may also become temporarily displaced during these works. Disturbance can result in displacement of birds from an area which can result in effective habitat loss or a reduction in the quality of the habitat, thereby leading to a reduction in bird density locally. Disturbance is expected to temporary to short-term in duration and is therefore not considered significant.

4.2 River Shannon Callows SAC No. 0216

The conservation objectives of the River Shannon Callows SAC are to maintain or restore the favourable conservation condition of the Annex I habitat(s) and/or the Annex II species for which the SAC has been selected. These are listed in Table 4-4 below.

Table 4-4: Qualifying Interests and Conservation Objectives[xxv] of River Shannon Callows SAC

European Site	Qualifying Interests	Conservation Objectives
River Shannon Callows SAC Code: IE000216 c. 13km southeast	**Annex I Habitats**	
	Molinia meadows on calcareous, peaty or clayey-silt-laden soils (*Molinion caeruleae*) [6410]	To maintain or restore favourable conservation condition
	Lowland hay meadows (*Alopecurus pratensis, Sanguisorba officinalis*) [6510]	
	*Limestone pavements [8240]	
	*Alluvial forests with *Alnus glutinosa* and *Fraxinus excelsior* (*Alno-Padion, Alnion incanae, Salicion albae*) [91E0]	
	Annex II Species	
	Otter - *Lutra lutra* [1355]	To maintain or restore favourable conservation condition

A site-specific conservation objectives document is not currently available for River Shannon Callows SAC. However, in conjunction with considering the generic conservation objective to 'To maintain or restore the favourable conservation condition of the Annex I habitat(s) and/or the Annex II species for which the SAC has been selected', a set of site specific conservation objectives has been compiled for the qualifying interests of River Shannon Callows SAC and used to inform this assessment, based on site specific conservation objectives documents available for other European sites with equivalent qualifying interest habitats or species. This sets out the attributes, measures and targets that would be expected to define the favourable conservation condition of QI habitats and species within River Shannon Callows SAC. This approach was recommended by the NPWS (refer to the NPWS consultation response summary in Appendix A).

The specific attributes and targets used to define the conservation objectives of the qualifying interest habitats and species of the River Shannon Callows SAC are presented in

Table 4-6.

4.2.1 *Ecological Baseline Description for River Shannon Callows SAC 00216*[xxvi]

The River Shannon Callows SAC consists of seasonally flooded, semi-natural, lowland wet grassland, along and beside the river between the towns of Athlone and Portumna. It is approximately 50km long and averages about 0.75km wide (reaching 1.5km wide in places). Along much of its length the site is bordered by raised bogs, esker ridges and limestone-bedrock hills. The Annex I habitats *Molinia* meadows [6410] and lowland hay meadows [6510] are well-represented within the site, Alluvial forest [91E0] occurs on a series of alluvial islands just below the ESB weir near Meelick and at Clorhane, and an area of limestone pavement [*8240] represents the only known example in County Offaly. The site also supports a population of Otter.

The Proposed Project boundary is located 13km southeast of the River Shannon Callows SAC boundary and does not overlap with this European site. The Proposed Project area drains to the River Shannon Callows SAC more than 15 km downstream. No evidence of Otter activity was recorded on the proposed development site.

4.2.2 *Examination and Analysis of Potential Direct and Indirect Impacts*

As the Proposed Project is 13km distant, it does not overlap with the River Shannon Callows SAC, therefore none of the qualifying interest habitats or species will be directly impacted. The River Shannon Callows SAC also lies beyond the ZoI for air quality or disturbance/displacement impacts. However, there are potential impacts outlined in Section 4.2.3 and Section 4.2.4 by which the Proposed Project could (in the absence of mitigation measures) potentially affect the conservation objective attributes and targets supporting the conservation condition of the qualifying interests of Shannon Callows SAC.

4.2.3 *Construction Phase*

4.2.3.1 *Habitat Degradation as a result of Hydrological Impacts*

As the Proposed Project drains to River Shannon Callows SAC, construction works pose a potential risk of affecting water quality in the European site through an accidental spillage of cement-based products or accidental spillage of hydrocarbons.

4.2.3.2 *Habitat Degradation as a Result of Introducing or Spreading Non-Native Invasive Species*

As the Proposed Project drains to the River Shannon Callows SAC, there is the potential that non-native invasive species could be introduced to the surface water network and establish populations downstream in the European site.

Introducing non-native invasive species to River Shannon Callows SAC has the potential to affect the quality of the wetland habitat that supports the conservation condition of the qualifying interests of the River Shannon Callows SAC.

4.2.3.3 *Habitat loss and disturbance impacts outside of the SPA boundary*

No qualifying interest habitats of the River Shannon Callows SAC were recorded within or surrounding the proposed development site. The qualifying interest species, Otter, was not recorded using the habitat within or in the immediate vicinity of the proposed construction works. The site is located adjacent to a civic reception site, closed landfill and motorway.

The total area of site is 0.01 km^2, and the construction of the site will result in the loss of c. 0.01km2 of grassland habitat. This represent a loss of <0.006 % of the area of within 13km of the Shannon Callows SAC. The loss of a habitat area this small, outside of the boundary of SPA, will not have any effect on habitat availability or prey abundance that would affect population numbers. Given the distance to the SAC, there is no potential for habitat disturbance .

4.2.4 *Operational Phase*

4.2.4.1 *Habitat Degradation as a Result of Hydrological Impacts*

Although there will not be any foul water discharges to the surface water network during the Operational Phase, storm water will be discharged to the swale to the north of the site; therefore there is a risk to water quality in receiving watercourses.

4.2.4.2 *Habitat Degradation as a Result of Introducing or Spreading Non-Native Invasive Species*

During the Operational Phase, there is no significant risk that non-native invasive plant species may colonise lands post-construction due to the extensive hardstanding on the site.

4.2.5 Summary

Table 4-5 presents a summary of the potential impacts on the qualifying interests of the River Shannon Callows SAC as a result of the Proposed Project. Those highlighted in blue are those qualifying interests which are present within the ZoI of the Proposed Project.

Table 4-5: Qualifying Interests of the River Shannon Callows SAC and Summary of Impacts

Qualifying Interests	Impact
Annex I Habitats	
Molinia meadows on calcareous, peaty or clayey-silt-laden soils (*Molinion caeruleae*) [6410]	Habitat degradation – hydrology Habitat degradation – non-native invasive species
Lowland hay meadows (*Alopecurus pratensis, Sanguisorba officinalis*) [6510]	Habitat degradation – hydrology Habitat degradation – non-native invasive species
*Limestone pavements [8240]	No potential impact pathway
*Alluvial forests with *Alnus glutinosa* and *Fraxinus excelsior* (*Alno-Padion, Alnion incanae, Salicion albae*) [91E0]	Habitat degradation – hydrology Habitat degradation – non-native invasive species
Annex II Species	
Otter - *Lutra lutra* [1355]	Habitat degradation – hydrology

Table 4-6: Potential Impacts on the Conservation Objectives of the River Shannon Callows SAC (Those qualifying interests, and the supporting attributes, measures and targets [taken from the Conservation Objectives]

Attributes and Measures	Target	Potential Impacts Requiring Mitigation?	Are Mitigation Measures Required?	Residual Impacts?
[6410] *Molinia* meadows on calcareous, peaty or clayey-silt-laden soils (*Molinion caeruleae*) To maintain or restore the favourable conservation condition of the habitat in the River Shannon Callows SAC, which is defined by the following list of attributes and targets:				
Habitat area (hectares)	Area stable or increasing, subject to natural processes	Yes An accidental pollution event during the Construction Phase or the Operational Phase of a sufficient magnitude could potentially affect the area and distribution of wet grassland *Molinia* meadows in the SAC, where the habitat has a direct interaction with the River Shannon through seasonal flooding.	Yes Measures to maintain water quality in receiving watercourses during the Construction Phase and Operational Phase will be implemented to ensure the receiving freshwater environment is protected and impacts downstream of the Proposed Project on associated wetland habitats in the River Shannon Callows SAC are avoided (Section 4.5).	No
Habitat distribution (occurrence)	No decline, subject to natural processes			
Vegetation composition: typical species (number at a representative number of monitoring stops)	At least seven positive indicator species present, including one 'high quality' species as listed in O'Neill *et al.* (2013)	An accidental pollution event during the Construction Phase or the Operational Phase of a sufficient magnitude could potentially affect the area and distribution of wet grassland *Molinia* meadows in the SAC, where the habitat has a direct interaction with the River Shannon through seasonal flooding.	Yes Measures to maintain water quality in receiving watercourses during the Construction Phase and Operational Phase will be implemented to ensure the receiving freshwater	No

			environment is protected and impacts downstream of the Proposed Project on associated wetland habitats in the River Shannon Callows SAC are avoided (Section4.5). Measures to prevent the spread of non-native invasive species during the Construction Phase and/or the Operational Phase will be implemented to ensure they are not introduced to the River Shannon Callows SAC	
Vegetation composition: negative indicator species (percentage at a representative number of monitoring stops)	Negative indicator species collectively not more than 20% cover, with cover by an individual species not more than 10%	An accidental pollution event during the Construction Phase or the Operational Phase of a sufficient magnitude could potentially affect the area and distribution of wet grassland *Molinia* meadows in the SAC, where the habitat has a direct interaction with the River Shannon through seasonal flooding.	Yes Measures to prevent the spread of non-native invasive species during the Construction Phase and/or the Operational Phase will be implemented to ensure they are not introduced to the River Shannon Callows SAC (Section 4.5).	No

Vegetation composition: non-native species (percentage at a representative number of monitoring stops)	Non-native species cover not more than 1%	Yes Although unlikely, given the SAC boundary is more than 13km downstream of where the Proposed Project drains to this SAC, there remains a risk that non-native invasive species capable of colonising terrestrial wetland habitats along the River Shannon.	Yes Measures to prevent the spread of non-native invasive species during the Construction Phase and/or the Operational Phase will be implemented to ensure they are not introduced to the River Shannon Callows SAC (Section 4.5). Measures to prevent the spread of non-native invasive species during the Construction Phase and/or the Operational Phase will be implemented to ensure they are not introduced to the River Shannon Callows SAC (Section 4.5).	No
Vegetation composition: moss species (representative number of monitoring stops)	Hair mosses (*Polytrichum* spp.) not more than 25% cover	Yes An accidental pollution event of a sufficient magnitude could potentially affect the vegetation composition where the habitat has a direct interaction with the River Shannon through seasonal flooding.	Yes Measures to maintain water quality in receiving watercourses during the Construction Phase and Operational Phase will be implemented to ensure the receiving freshwater environment is protected	No

			and impacts downstream of the Proposed Project on associated wetland habitats in the River Shannon Callows SAC are avoided (Section 4.5).	
Vegetation structure: woody species and bracken (percentage at a representative number of monitoring stops)	Cover of woody species and bracken (*Pteridium aquilinum*) not more than 5% cover	No The Proposed Project will not directly affect habitat within the SAC and poses no risk of affecting the cover of woody species or bracken.	No	No
Vegetation structure: sward height (percentage at a representative number of monitoring stops)	At least 30% of sward between 10cm and 80cm tall	Yes An accidental pollution event of a sufficient magnitude could potentially affect the vegetation composition where the habitat has a direct interaction with the River Shannon through seasonal flooding.	Yes Measures to maintain water quality in receiving watercourses during the Construction Phase and Operational Phase will be implemented to ensure the receiving freshwater environment is protected and impacts downstream of the Proposed Project on associated wetland habitats in the River Shannon Callows SAC are avoided (Section 4.5).	No
Vegetation structure: litter (percentage at a representative number of monitoring stops)	Litter cover not more than 25%	No The Proposed Project will not directly affect *Molinia* habitat within the SAC and poses no risk of affecting the percentage litter cover.	No	No
Physical structure: bare soil (percentage at a	Not more than 10% bare soil	No		

representative number of monitoring stops)		The Proposed Project will not affect, or contribute to, levels of grazing or habitat disturbance in the SAC that would affect the cover of bare ground within *Molinia* habitat.		
Physical structure: disturbance (square metres)	Area showing signs of serious grazing or other disturbance less than 20m²	No The Proposed Project will not affect, or contribute to, physical disturbance levels in the SAC that would damage *Molinia* habitat.		
[6510] Lowland hay meadows (*Alopecurus pratensis, Sanguisorba officinalis*) To maintain or restore the favourable conservation condition of the habitat in the River Shannon Callows SAC, which is defined by the following list of attributes and targets:				
Habitat area (hectares)	Area stable or increasing, subject to natural processes	Yes An accidental pollution event during the Construction Phase or the Operational Phase of a sufficient magnitude could potentially affect the area and distribution of lowland hay meadows in the SAC, where the habitat has a direct interaction with the River Shannon through seasonal flooding.	Yes Measures to maintain water quality in receiving watercourses during the Construction Phase and Operational Phase will be implemented to ensure the receiving freshwater environment is protected and impacts downstream of the Proposed Project on associated wetland habitats in the River Shannon Callows SAC are avoided (Section 4.5).	No
Habitat distribution (occurrence)	No decline, subject to natural processes			
Vegetation composition: typical species (number at a representative number of monitoring stops)	At least seven positive indicator species present, including one 'high quality' species as listed in O'Neill *et al.* (2013)			
Vegetation composition: negative indicator species (percentage at a representative number of monitoring stops)	Negative indicator species collectively not more than 20% cover, with cover by an individual species not more than 10%			
Vegetation composition: non-native species (percentage at a	Non-native species cover not more than 1%			

representative number of monitoring stops)				
Vegetation structure: woody species and bracken (percentage at a representative number of monitoring stops)	Cover of woody species and bracken (*Pteridium aquilinum*) not more than 5% cover			
Vegetation structure: broadleaf herb: grass ratio (percentage at a representative number of monitoring stops)	Broadleaf herb component of vegetation between 40 and 90%			
Vegetation structure: sward height (percentage at a representative number of monitoring stops)	At least 50% of sward between 10cm and 50cm tall			
Vegetation structure: litter (percentage at a representative number of monitoring stops)	Litter cover not more than 25%			
Physical structure: bare soil (percentage at a representative number of monitoring stops)	Not more than 5% bare soil			
Physical structure: disturbance (square metres)	Area showing signs of serious grazing or other disturbance less than $20m^2$			
[8240] *Limestone pavements				

To restore the favourable conservation condition of the habitat in the River Shannon Callows SAC, which is defined by the following list of attributes and targets:				
Habitat area (hectares)	Area stable or increasing, subject to natural processes.	No The existing surface water network of watercourses is the only potential impact pathway connecting the Proposed Project to the River Shannon Callows SAC. As Limestone pavement is a terrestrial habitat with no intrinsic dependence on surface water interactions to support the vegetation composition or structure, the Proposed Project poses no risk of affecting any of the attributes and targets supporting the favourable conservation status of Limestone pavement habitat in the River Shannon Callows SAC.	No	No
Habitat distribution (occurrence)	No decline, subject to natural processes			
Vegetation composition: typical species (number at a representative number of monitoring stops)	At least seven positive indicator species present			
Vegetation composition: bryophyte layer (percentage at a representative number of monitoring stops)	Bryophyte cover at least 50% on wooded pavement			
Vegetation composition: negative indicator species (percentage at a representative number of monitoring stops)	Collective cover of negative indicator species on exposed pavement not more than 1%			
Vegetation composition: negative indicator species (percentage at a representative number of monitoring stops)	Collective cover of negative indicator species on exposed pavement not more than 1%			
Vegetation composition: non-native species (percentage at a	Cover of non-native species not more than 1% on exposed pavement; on wooded pavement not			

representative number of monitoring stops)	more than 10% with no regeneration			
Vegetation composition: scrub (percentage at a representative number of monitoring stops)	Scrub cover no more than 25% of exposed pavement			
Vegetation composition: bracken cover (percentage at a representative number of monitoring stops)	Bracken (*Pteridium aquilinum*) cover no more than 10% on exposed pavement			
Vegetation structure: woodland canopy (percentage at a representative number of monitoring stops)	Canopy cover on wooded pavement at least 30%			
Vegetation structure: dead wood (occurrence in a representative number of monitoring stops)	Sufficient quantity of dead wood on wooded pavement to provide habitat for saproxylic organisms			
Physical structure: disturbance (occurrence in a representative number of monitoring stops)	No evidence of grazing pressure on wooded pavement			
Indicators of local distinctiveness (occurrence)	Indicators of local distinctiveness are maintained. This includes species on the Flora (Protection) Order, 2015			

	and/or the red data lists, and other rare or localised species, as well as archaeological and geological features, which often support distinctive species			
[91E0] *Alluvial forests with *Alnus glutinosa* and *Fraxinus excelsior* (*Alno-Padion, Alnion incanae, Salicion albae*) To maintain or restore the favourable conservation condition of the habitat in the River Shannon Callows SAC, which is defined by the following list of attributes and targets:				
Habitat area (hectares)	Area stable or increasing, subject to natural processes	Yes An accidental pollution event of a sufficient magnitude could potentially affect the area and distribution in the SAC, where the habitat has a direct interaction with the River Shannon through seasonal flooding.	Yes Measures to prevent the spread of non-native invasive species during the Construction Phase and/or the Operational Phase will be implemented to ensure they are not introduced to the River Shannon Callows SAC	No
Habitat distribution (occurrence)	No decline, subject to natural processes			
Woodland size (hectares)	Area stable or increasing. Where topographically possible, 'large' woods at least 25ha in size and 'small' woods at least 3ha in size			
Woodland structure: cover and height (percentage and metres)	Diverse structure with a relatively closed canopy containing mature trees; subcanopy layer with semimature trees and shrubs; and well-developed herb layer	Yes An accidental pollution event of a sufficient magnitude could potentially affect the area and distribution in the SAC, where the habitat has a direct interaction with the River Shannon through seasonal flooding.	Yes Measures to prevent the spread of non-native invasive species during the Construction Phase and/or the Operational Phase will be implemented to ensure they are not introduced to the River Shannon	No

			Callows SAC (Section 4.5).	
Woodland structure: community diversity and extent (hectares)	Maintain diversity and extent of community types	Yes An accidental pollution event of a sufficient magnitude could potentially affect the area and distribution in the SAC, where the habitat has a direct interaction with the River Shannon through seasonal flooding. Although unlikely, given the SAC boundary is more than 13km downstream of where the Proposed Project drains to this SAC, there remains a risk that non-native invasive species capable of colonising alluvial woodland habitats. Introducing non-native invasive plant species could negatively affect the number, abundance and diversity of any locally distinctive species. Both of these potential impacts could affect the diversity of the woodland community.	Yes Measures to maintain water quality in receiving watercourses during the Construction Phase will be implemented to ensure the receiving freshwater environment is protected and impacts downstream of the Proposed Project on associated wetland habitats in the River Shannon Callows SAC are avoided (Section 4.5). Measures to prevent the spread of non-native invasive species will be implemented to ensure they are not introduced to the River Shannon Callows SAC (Section 4.5).	No
Woodland structure: natural regeneration (seedling:sapling:pole ratio)	Seedlings, saplings and pole age-classes occur in adequate proportions to ensure survival of woodland canopy	An accidental pollution event of a sufficient magnitude could potentially affect the area and distribution in the SAC, where the habitat has a direct interaction with the River Shannon through seasonal flooding.	Measures to prevent the spread of non-native invasive species will be implemented to ensure they are not introduced to the River Shannon	No

		Although unlikely, given the SAC boundary is more than 13km downstream of where the Proposed Project drains to this SAC, there remains a risk that non-native invasive species capable of colonising alluvial woodland habitats. Introducing non-native invasive plant species could negatively affect the number, abundance and diversity of any locally distinctive species.	Callows SAC (Section 4.5).	
Hydrological regime: flooding depth/height of water table (metres)	Appropriate hydrological regime necessary for maintenance of alluvial vegetation	No As the proposed scheme incorporates Suds and is not in a flood plain, there is no potential to alter the flooding depth/height of the water table.	No	No
Woodland structure: dead wood (m^3 per hectare; number per hectare)	At least $30m^3$/ha of fallen timber greater than 10cm diameter; 30 snags/ha; both categories should include stems greater than 40cm diameter (greater than 20cm diameter in the case of alder (Alnus glutinosa))	No The existing surface water network of watercourses is the only potential impact pathway connecting the Proposed Project to alluvial forest habitat within the River Shannon Callows SAC. Any potential effects on water quality during the Construction Phase, or any risk of introducing non-native invasive species, poses no risk of affecting the abundance of dead wood in the alluvial woodlands.	No	No
Woodland structure: veteran trees (number per hectare)	No decline	No The existing surface water network of watercourses is the only potential impact pathway connecting the Proposed Project to alluvial forest habitat within the River	No	No

		Shannon Callows SAC. Any potential effects on water quality during the Construction Phase pose no risk of affecting the numbers/abundance of woodland tree species.		
Woodland structure: indicators of local distinctiveness (occurrence)	No decline	An accidental pollution event of a sufficient magnitude could potentially affect the area and distribution in the SAC, where the habitat has a direct interaction with the River Shannon through seasonal flooding. Although unlikely, given the SAC boundary is more than 13km downstream of where the Proposed Project drains to this SAC, there remains a risk that non-native invasive species capable of colonising alluvial woodland habitats. Introducing non-native invasive plant species could negatively affect the number, abundance and diversity of any locally distinctive species.	Yes Measures to maintain water quality in receiving watercourses during the Construction Phase and Operational Phase will be implemented to ensure the receiving freshwater environment is protected and impacts downstream of the Proposed Project on associated wetland habitats in the River Shannon Callows SAC are avoided (Section 4.5). Measures to prevent the spread of non-native invasive species during the Construction Phase and/or the Operational Phase will be implemented to ensure they are not introduced to the River Shannon Callows SAC (Section 4.5).	No

Vegetation composition: native tree cover (percentage)	No decline. Native tree cover not less than 95% Species reported in Perrin *et al.* (2008)	No The existing surface water network of watercourses is the only potential impact pathway connecting the Proposed Project to alluvial forest habitat within the River Shannon Callows SAC. Any potential effects on water quality during the Construction Phase pose no risk of affecting the numbers/abundance/composition of woodland tree species.	No	No
Vegetation composition: typical species (occurrence)	A variety of typical native species present, depending on woodland type, including alder (*Alnus glutinosa*), willows (*Salix* spp) and, locally, oak (*Quercus robur*) and ash (*Fraxinus excelsior*) Species reported in Perrin *et al.* (2008)	Yes An accidental pollution event during the Construction Phase or the Operational Phase, of a sufficient magnitude, could potentially negatively affect sensitive native woodland plant species where the habitat has a direct interaction with the River Shannon through seasonal flooding. Although unlikely, given the SAC boundary is more than 13km downstream of where the Proposed Project drains to this SAC, there remains a risk that non-native invasive species capable of colonising terrestrial woodland habitats along the River Shannon could be spread to alluvial forest habitat in the SAC via the surface water network during the Construction Phase and/or the Operational Phase. Introducing non-native invasive plant species could negatively affect the number, abundance and diversity of native woodland species.	Yes Measures to maintain water quality in receiving watercourses during the Construction Phase and Operational Phase will be implemented to ensure the receiving freshwater environment is protected and impacts downstream of the Proposed Project on associated wetland habitats in the River Shannon Callows SAC are avoided (Section 4.5). Measures to prevent the spread of non-native invasive species during the Construction Phase and/or the Operational Phase will be implemented to ensure	No

			they are not introduced to the River Shannon Callows SAC (Section 4.5).	
Vegetation composition: negative indicator species (occurrence)	Negative indicator species, particularly non-native invasive species, absent or under control The following are the most common invasive species in this woodland type: beech (Fagus sylvatica), sycamore (Acer pseudoplatanus), cherry laurel (Prunus laurocerasus), Himalayan balsam (Impatiens glandulifera)	Yes Although unlikely, given the SAC boundary is more than 13km downstream of where the Proposed Project drains to this SAC, there remains a risk that non-native invasive species capable of colonising terrestrial woodland habitats along the River Shannon could be spread to alluvial forest habitat in the SAC via the surface water network during the Construction Phase and/or the Operational Phase.	Yes Measures to prevent the spread of non-native invasive species during the Construction Phase and/or the Operational Phase will be implemented to ensure they are not introduced to the River Shannon Callows SAC.	No
[1355] Otter *Lutra lutra* To maintain or restore the favourable conservation condition of Otter in the River Shannon Callows SAC, which is defined by the following list of attributes and targets:				
Distribution (percentage positive survey sites)	No significant decline	No As the Proposed Project boundary is 13km directly away from the SAC site boundary, it poses no risk of disturbing or displacing Otter from habitat areas used within the SAC during the Construction Phase or the Operational Phase. No otter on site.	No	No
Extent of terrestrial habitat (hectares)	No significant decline. Area not currently mapped or	No	No	No

	calculated along river banks.	As the Proposed Project will not have any direct impacts on habitats, or result in any habitat loss, within the SAC the extent of terrestrial habitat, river habitat or lake habitat available to Otter will not be affected. No otter on site.		
Extent of freshwater (river) habitat (kilometres)	No significant decline. Length not currently mapped or calculated			
Extent of freshwater (lake) habitat (hectares)	No significant decline. Area not currently mapped or calculated			
Couching sites and holts (number)	No significant decline	Yes An accidental pollution event during the Construction Phase or the Operational Phase of a sufficient magnitude could (at least in theory) potentially affect usage of holt/couch sites available for Otter in the cSAC. No otter on site.	Yes Measures to maintain water quality in receiving watercourses during the Construction Phase and Operational Phase will be implemented to ensure the receiving freshwater environment is protected and impacts downstream of the Proposed Project on associated wetland habitats in the River Shannon Callows SAC are avoided.	No
Fish biomass available (kilograms)	No significant decline	Yes An accidental pollution event during the Construction Phase or the Operational Phase of a sufficient magnitude could impact fish through silt smothering spawning grounds or affecting respiration, chemical contaminants physically damaging fish or causing mortality as a result of toxins. Such impacts could result	Yes Measures to maintain water quality in receiving watercourses during the Construction Phase and Operational Phase will be implemented to ensure the receiving freshwater	No

		in a reduction in fish numbers, at least temporarily.	environment is protected and impacts downstream of the Proposed Project on associated wetland habitats in the River Shannon Callows SAC are avoided (Section 4.5).	
Barriers to connectivity (number)	No significant increase	No The watercourses crossed by the Proposed Project that drain to this SAC are more than 13km upstream of the SAC boundary and any works will not affect usage of watercourses by Otter within the SAC.	No	No
Mortality risk posed by construction works	Not defined in any existing conservation objectives document	Yes The mortality risk posed to Otter by construction works is related to both direct mortality, due to potential interaction with construction machinery/vehicles (especially the risk of holt damage/collapse), and/or indirect mortality, due to an accidental pollution event resulting in mortality through contaminant/toxin poisoning. Although the SAC boundary is more than 13km downstream of where the Proposed Project drains to this SAC, Otters can have home ranges extending over tens of kilometres and there is the potential that Otters using watercourses hydrologically linked to the SAC form part of, or are linked to, the qualifying interest Otter population of the River Shannon Callows SAC.	Yes Measures to maintain water quality in receiving watercourses during the Construction Phase and Operational Phase will be implemented to ensure the receiving freshwater environment is protected and impacts downstream of the Proposed Project on associated wetland habitats in the River Shannon Callows SAC are avoided (Section 4.5). No Otter holts or couch sites are directly impacted by the Proposed Project	No

4.3 Middle Shannon Callows SPA No 4096

The conservation objectives of the Middle Shannon Callows SPA are to maintain or restore the favourable conservation condition of the bird species listed as special conservation interests for this SPA. These are laid out in the Table 4-7 below.

Table 4-7: Special Conservation Interests and Conservation Objectives of Middle Shannon Callows SPA

European Site	Special Conservation Interests	Conservation Objectives
Middle Shannon Callows SPA Code: IE004097 c. 13km southeast	• A038 Whooper Swan *Cygnus cygnus* • A050 Wigeon *Anas penelope* • A140 Golden Plover *Pluvialis apricaria* • A142 Lapwing *Vanellus vanellus* • A122 Corncrake (Crex crex) • A156 Black-tailed Godwit (Limosa limosa) • A179 Black-headed Gull (Chroicocephalus ridibundus) • A999 Wetland and Waterbirds	To maintain or restore the favourable conservation condition of the bird species listed as Special Conservation Interests for this SPA. To maintain or restore the favourable conservation condition of the wetland habitat at Middle Shannon Callows SPA as a resource for the regularly occurring migratory waterbirds that utilise it.

A site-specific conservation objectives document is not currently available for Middle Shannon Callows SPA. However, in conjunction with considering the generic conservation objective 'To maintain or restore the favourable conservation condition of the bird species listed as special conservation interests for this SPA', a set of site specific conservation objectives has been compiled for the special conservation interests of Middle Shannon Callows SPA and used to inform this assessment, based on site specific conservation objectives documents available for other European sites with equivalent special conservation interest species. This sets out the attributes, measures and targets that would be expected to define the favourable conservation condition of the special conservation interest species of Middle Shannon Callows SPA. This approach was recommended by the NPWS (refer to the NPWS consultation response summary in Appendix A).

The specific attributes and targets used to define the conservation objectives of the qualifying interest species of the Middle Shannon Callows SPA are presented in Table 4-9.

4.3.1 *Ecological Baseline Description for Middle Shannon Callows SPA 4097*[xxvii]

The Middle Shannon Callows comprise a long, sinuous area of semi-natural lowland wet grassland, which floods extensively each winter along the River Shannon from Athlone to Portumna.

It lies within Counties Galway, Roscommon, Westmeath, Offaly and Tipperary. The site averages about 0.75 km in width though in places is up to 1.5 km wide. Water levels on the site are greatly influenced by the very small fall between Athlone and Portumna and by the weir at Meelick. The site has extensive areas of callow, or seasonally flooded, semi-natural, lowland wet grassland, along both sides of the river. The callows are mainly too soft for intensive farming but are used for hay or silage or for summer grazing. Other habitats of smaller area which occur alongside the river include lowland dry grassland, freshwater marshes, reedbeds and wet woodland. The diversity of semi-natural habitats present and the sheer size of the site attract an excellent diversity of bird species. The site is a SPA under the E.U. Birds Directive, of special conservation interest for the following species: Whooper Swan, Wigeon, Corncrake, Golden Plover, Lapwing, Black-tailed Godwit and Black-Headed Gull. It is also of special conservation interest for holding an assemblage of over 20,000 wintering waterbirds. 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 Middle Shannon Callows SPA is an internationally important site that supports an assemblage of over 20,000 wintering waterbirds. It holds internationally important populations of two species - Whooper Swan and Black-tailed Godwit. In addition, there are four species that have wintering populations of national importance. The site also supports a nationally important breeding population of Corncrake. Of particular note is that several of the species which occur regularly are listed on Annex I of the E.U. Birds Directive, i.e. Whooper Swan, Corncrake and Golden Plover.

The Proposed Project boundary is located 13 km northwest of and does not overlap with this European site. However, the Proposed Project eventually drains to Middle Shannon Callows SPA c.13 km downstream. The Middle Shannon Callows SPA also lies beyond the air quality or disturbance/displacement impacts.

4.3.2 Examination and Analysis of Potential Direct and Indirect Impacts

As the Proposed Project does not overlap with Middle Shannon Callows SPA, the habitat supporting the special conservation interests within the SPA will not be directly impacted. Middle Shannon Callows SPA also lies beyond the ZoI of any lighting, noise, or air quality impacts. At a distance of 13km downgradient, the Proposed Project will not disturb or displace wintering birds at Middle Shannon Callows SPA during the Construction or Operational Phases.

However, there are potential impacts outlined in Section 4.2.3 and Section 4.2.4 by which the Proposed Project could (in the absence of mitigation measures) potentially affect the conservation objective attributes and targets supporting the conservation condition of the special conservation interest bird populations of Middle Shannon Callows SPA.

4.3.3 Construction Phase

4.3.3.1 Habitat degradation as a result of Hydrological Impacts

As the Proposed Project drains to the Middle Shannon Callows SPA, construction works pose a potential risk of affecting water quality in the European site through an accidental spillage of cement-based products or accidental spillage of hydrocarbons.

4.3.3.2 Habitat Degradation as a Result of Introducing or Spreading Non-Native Invasive Species

As the Proposed Project drains to the Middle Shannon Callows SPA, there is the potential that non-native invasive species could be introduced to the surface water network and establish populations downstream in the European site.

Introducing non-native invasive species to Middle Shannon Callows SPA has the potential to affect the quality of the wetland habitat that supports the conservation condition of the special conservation interest bird populations of Middle Shannon Callows SPA.

4.3.3.3 Habitat Degradation as a Result of Air Quality Impacts

Depending on the particle size and weather conditions, fine particles (<10µm) of dust generally travel up to 1 km, although ultrafine particles (< 2.5µm) can travel further[xxviii]. It is noted in the DoEHLG (2004) Quarry Guidelines that the most severe dust conditions are likely to be experienced within about 100m of the dust source, with potential effects extending 0.5km from the source[xxix]. Given the prevailing winds at the site are generally from a south westerly direction and that the nearest designated European site is approximately 1.15 km northeast of

the proposed development, significant impacts are will not to occur as a result of dust. Habitat Loss and Disturbance Impacts Outside of the SPA Boundary.

No special conservation interest species of Middle Shannon Callows SPA were recorded using the site. None of these species were recorded using habitat in the immediate vicinity of the proposed construction works. The site is located adjacent to an civic reception site, closed landfill, and motorway.

Given the temporary nature of the construction works, and the relatively small area of habitat that will be lost or temporarily affected during the Construction Phase by disturbance compared to the total area available to the bird populations within the SPA, there will not be any significant long-term effects on the breeding or wintering bird populations of the Middle Shannon Callows SPA due to either habitat loss impacts or disturbance effects during the Construction Phase.

Noise at the facility would be inaudible at a distance of 13 km.

Lighting can impact nocturnal foraging species such as bats. Bats are not a Qualifying Interest of any designated European sites within 15 km of the proposed development.

4.3.4 Operational Phase

4.3.4.1 Habitat Degradation as a Result of Hydrological Impacts

Although there will not be any foul water discharges to the surface water network during the Operational Phase, storm water will be discharged to the swale to the north of the site; therefore there is a risk to water quality in receiving watercourses.

Affecting water quality in receiving watercourses and in the Middle Shannon Callows SPA has the potential to affect the conservation objectives supporting the conservation condition of the special conservation interest bird populations of the Middle Shannon Callows SPA.

4.3.4.2 Habitat Degradation as a Result of Introducing or Spreading Non-Native Invasive Species

During the Operational Phase, there is no significant risk that non-native invasive plant species may colonise lands post-construction due to the extensive hardstanding on the site.

4.3.5 Summary

Table 4-8 presents a summary of the potential impacts on the special conservation interest species of the Middle Shannon Callows SPA as a result of the Proposed Project. All five have been recorded within the ZoI of the Proposed Project.

Table 4-8: Special Conservation Interest Species of the Middle Shannon Callows SPA and Summary of Impacts

Special Conservation Interests	Impact
Whooper Swan (Cygnus cygnus) [A038] Wigeon (Anas penelope) [A050] Corncrake (Crex crex) [A122] Golden Plover (Pluvialis apricaria) [A140] Lapwing (Vanellus vanellus) [A142] Black-tailed Godwit (Limosa limosa) [A156] Black-headed Gull (Chroicocephalus ridibundus) [A179] Wetland and Waterbirds [A999]	*Habitat degradation - hydrology* *Habitat degradation - non-native invasive species*

Table 4-9: Potential Impacts on the Conservation Objectives of the Middle Shannon Callows SPA (Those qualifying interests, and the supporting attributes, measures and targets [taken from the Conservation Objectives]

Attributes and Measures	Target	Potential Impacts Requiring Mitigation?	Are Mitigation Measures Required?	Residual Impacts?
Whooper Swan (Cygnus cygnus) [A038], Wigeon (Anas penelope) [A050], Corncrake (Crex crex) [A122], , Golden Plover (Pluvialis apricaria) [A140], Lapwing (Vanellus vanellus) [A142], Black-tailed Godwit (Limosa limosa) [A156], Black-headed Gull (Chroicocephalus ridibundus) [A179] Wetland and Waterbirds [A999] To maintain or restore the favourable conservation condition of the species in the Middle Shannon Callows SPA, which is defined by the following list of attributes and targets:				
Breeding population abundance (apparently occupied nests [AONs]: number)	No significant decline	An accidental pollution event of a sufficient magnitude could potentially affect the area and distribution in the SAC, where the habitat has a direct interaction with the River Shannon through seasonal flooding.	Yes Measures to maintain water quality in receiving watercourses during the Construction Phase will be implemented to ensure the receiving freshwater environment is protected and impacts downstream of the Proposed Project on habitats in Middle Shannon Callows SPA are avoided (Section 4.5).	No
Productivity rate (mean number)	No significant decline			
Prey biomass available (kilogrammes)	No significant decline			

Attributes and Measures	Target	Potential Impacts Requiring Mitigation?	Are Mitigation Measures Required?	Residual Impacts?
Distribution: breeding colonies (number; location; area [hectares])	No significant decline	An accidental pollution event of a sufficient magnitude could potentially affect the area and distribution in the SAC, where the habitat has a direct interaction with the River Shannon through seasonal flooding.	Yes Measures to maintain water quality in receiving watercourses during the Construction Phase will be implemented to ensure the receiving freshwater environment is protected and impacts downstream of the Proposed Project on habitats in Middle Shannon Callows SPA are avoided (Section 4.5).	No
Barriers to connectivity (number; location; shape; area [hectares])	No significant increase	No Watercourses at the Proposed Project that drain to this SPA, 13km upstream from the Middle Shannon Callows SPA and poses no risk of barrier effect to bird species or risk of disturbing breeding sites in the SPA.	No	No
Disturbance at breeding site (level of impact)	Human activities should occur at levels that do not adversely affect the breeding population			
Population trend (percentage change)	Long term population trend stable or increasing	Yes	Yes	No

Attributes and Measures	Target	Potential Impacts Requiring Mitigation?	Are Mitigation Measures Required?	Residual Impacts?
Distribution (range, timing and intensity of use of areas)	No significant decrease in the numbers or range of areas used by waterbird species, other than that occurring from natural patterns of variation	The Middle Shannon Callows SPA site boundary lies more than 13km downstream of where the Proposed Project drains to this SPA. An accidental pollution event during the Construction Phase, of a sufficient magnitude, could potentially negatively affect aquatic habitats in the SPA. This could potentially affect the quality of the aquatic/wetland habitat that supports these special conservation interest species in the Middle Shannon Callows SPA, which in turn could affect the range, timing and intensity of use of areas by these species.	Measures to prevent the spread of non-native invasive species will be implemented to ensure they are not introduced to Middle Shannon Callows SPA (Section 4.5). Measures to maintain water quality in receiving watercourses during the Construction Phase will be implemented to ensure the receiving freshwater environment is protected and impacts downstream of the Proposed Project on habitats in Middle Shannon Callows SPA are avoided (Section 4.5).	

Habitats which are not within the boundary of a designated site but occur within the wider surroundings may provide supporting habitat to the species for which the site is designated. This can particularly be the case where mobile species such as birds are involved. The likely potential significant effect to avian communities within the vicinity of the proposed development area have been divided into two main areas, habitat loss and fragmentation and disturbance displacement. These effects are associated with both the direct habitat loss associated with construction and the disturbance caused by the activity of machinery and staff within the proposed development area. Disturbance can result in a significant impact if it reduces the availability of resources for avian receptors.

The wetlands of the SPA are dependent on water quality. Water quality perturbations associated with construction activity have potential to impact upon the ecologically sensitive waterways in the vicinity of the development. However, smaller streams and drainage ditches require water quality protection measures. Works that could give rise to impacts would be associated with sediment release during construction or potential contamination of surface water from concrete and / or fuels used during construction. With the implementation of best practise construction methods, as presented in Section 4.5 potential adverse effects on water quality and the potential for the introduction of invasive species are considered to be unlikely. Birds may also become temporarily displaced during these works. Disturbance can result in displacement of birds from an area which can result in effective habitat loss or a reduction in the quality of the habitat, thereby leading to a reduction in bird density locally. Disturbance is expected to temporary to short-term in duration and is therefore not considered significant.

4.4 Potential Impacts

In terms of potential impacts the proposed development will have no direct adverse impacts on the species of special conservation interest or qualifying interests associated with each of the European sites referred to above. The proposed development does however have the potential to indirectly impact European sites within the ZoI through adversely impacting on the water quality of the River Shannon Callows SPA which in turn could impact on the feeding grounds of the protected species.

Uncontrolled emissions of surface water pollutants such as foul water, silt/ grit, fuel/ oil and run-off from the proposed development infrastructure to sensitive surface water-dependant receptors (e.g. River habitats) can lead to significant impacts on European sites. Potential sources of emissions:

- Proposed Site Infrastructure;
- Waste Control Area and Weighbridges; and
- Welfare and Maintenance Buildings.

Uncontrolled emissions of pollutants from the proposed development could affect the quality of the receiving watercourses. Watercourses in the surroundings of the site provide a pathway for impacts from the proposed development to the River Suck and River Shannon. If unmitigated, such a pollution event could result in indirect water quality impacts on key aquatic species and habitats for which these sites have been designated.

Although the River Suck/Shannon is hydrologically linked to the proposed development, the SPA is located 1.5 km downgradient from the proposed development (1.15km as the crow flies), over land and this distance increases when the meandering nature of the hydrological links is considered. The small-scale development and separation distance between the proposed development and this SPA limits the potential for ecologically significant effects.

The assimilative capacity of natural water is its ability to receive wastewaters or toxic materials without negative effects and without damage to aquatic life or humans who consume the water. The critical physiochemical parameters of the effluent in terms of its potential to cause damage to aquatic life in the receiving waters are the Biological Oxygen Demand, pH, Total Ammonia, Orthophosphate/Total Phosphate and Suspended Solids. The estimated Q95 flow and the total discharge volume from the site are used for the assimilative capacity study. While the discharge varies on a daily basis due to rainfall and does not discharge during low flow events, a nominal discharge of 20 m^3/day is used in the assimilative calculations. The average discharge from the site based on the area, rainfall and evapotranspiration is 16m^3/day.

The Assimilative Capacity is calculated as follows:

- $\frac{Q_{(rev)}C_{(rev)} + Q_{(dis)}C_{(dis)}}{Q_{(rev)} + Q_{(dis)}} = C \text{ total (mg/l)}$

Where: Q is the volume of flow/discharge

C is the concentration of indicator chemical parameters

(rev) is the receiving watercourse

(dis) is the discharge liquid)

(tot) is the mixed total.

The results of the assimilative capacity study, summarised below in Table 4-10 and Table 4-11, indicate that there is an expected reduction or no change in the main parameters given above. The calculations below are based on the low flow figures for the River Suck and Shannon. The dilution in the river will be significantly higher in winter, which is an important consideration as many of the special conservation interests for the European sites in the Zol are wintering birds.

Table 4-10: Assimilative Capacity Study - 95%ile River Suck

Parameter	Units	Background Concentrations	Discharge Quality	Estimated Q95 streamflow m3/day[xxx]	Discharge Volume m3/day	Assimilative Capacity	
						C total	C Total mg/l
BOD	mg/l	2	5	216,000	20	432100	2.000
pH	pH units	7.6	7.2	216,000	20	1641744	7.600
Ortho - Phosphate	mg/l as P	0.055	0.1	216,000	20	11882	0.055
Total Ammonia as N	mg/l as N	0.03	0.01	216,000	20	6480.2	0.030
Nitrate	mg/l	20	25	216,000	20	4320500	20.000
Total Suspended Solids	mg/l	5	25	216,000	20	1080500	5.002

Table 4-11: Assimilative Capacity Study - 95%ile River Shannon

Parameter	Units	Background Concentrations	Discharge Quality	Estimated Q95 streamflow m3/day[xxxi]	Discharge Volume m3/day	Assimilative Capacity	
						C total	C Total mg/l
BOD	mg/l	2	5	2,289,600	20	4,579,300	2.0
pH	pH units	7.6	7.2	2,289,600	20	17,401,104	7.6
Ortho - Phosphate	mg/l as P	0.055	0.1	2,289,600	20	125,930	0.055
Total Ammonia as N	mg/l as N	0.03	0.01	2,289,600	20	68,688	0.03

Parameter	Units	Background Concentrations	Discharge Quality	Estimated Q95 streamflow m3/day[xxxi]	Discharge Volume m3/day	Assimilative Capacity	
						C total	C Total mg/l
Nitrate	mg/l	20	25	2,289,600	20	45,792,500	20.0
Total Suspended Solids	mg/l	5	25	2,289,600	20	11,448,500	5.0

Protective measures are detailed in Section 4.5 to further reduce/ avoid adverse effects on the European sites within the Zol, including standard design measures. The potential impact of the development on flood risk elsewhere in the catchment has been assessed. It is proposed that drainage measures shall be provided to limit surface water runoff from the proposed development to greenfield runoff rates, in accordance with the Greater Dublin Strategic Drainage Strategy (GDSDS). It is predicted that the proposed development will not increase flood risk elsewhere in the catchment. The control of the surface water discharge rate to the receiving environment can be classified as a SuDS (sustainable urban drainage) measure. In addition to surface water attenuation it is proposed to install a Full Retention Petrol Separator.

Based on the results of the Flood Risk Assessment hydraulic model, it is estimated that the proposed development is located in Flood Plain C, i.e. it is not predicted to flood during a 1 in 1000-year storm (including a 20% allowance for a mid-range future scenario).

It is proposed to drain all waste water (Both foul water and washdown water) to the on-site waste water holding tanks.

No waste from the site will enter groundwater. No pathway-link to groundwater from the proposed development exists with the exception of a high-water table being intercepted during excavation works. It is not deemed that such a scenario will result in significant negative impacts. No groundwater is to be abstracted for any reason as a result of the proposed development.

4.5 Protective Measures

The positioning of the infrastructure associated with the Proposed Project has been designed to avoid European sites, and to minimise the risks of indirect effects as far as is possible. The following protective measures have been designed in consultation with the project hydrologist /hydrogeologists and Barna Waste as part of the planning application. The protective measures outlined below have been designed to reduce or avoid adverse effects on the environment and

European sites listed in Section 4.1 to Section 4.3, regarding their site's specific conservation objectives. Protective measures are listed for each element of the proposed development.

4.5.1 Construction Phase Mitigation

During the construction phase of the development the following measures are proposed to reduce the magnitude of the potential effects on environmental receptors within the vicinity and downstream of the proposed development, protecting the integrity of European sites within the Zol.

During the construction phase, environmental monitoring will take place by a clerk of works/site engineer to confirm that the following mitigation measures are implemented fully and having the intended effect. The clerk of works/site engineer will commence their supervisory role prior to any works commencing on site, involving the review of and providing advice on method statements, in preparation of works.

4.5.1.1 Management and Excavations of Silt

Contractors will be required to ensure that the public roads in the vicinity of the site are maintained free from all mud, dirt and rubbish, which may arise from or by reason of the execution of the works. To facilitate this, contractors will be instructed to use a temporary wheel wash which will be installed at the site of the proposed development and will minimise the potential for sediments to enter the surface water network.

As part of good practice measures to avoid or reduce the release of suspended solids into surface water run-off, the following procedures will be employed:

- Excavation works will not be carried out during or following heavy rainfall. Excavations will be covered during heavy rainfall to avoid the creation of surface water with high concentrations of suspended solids that would require dewatering. During lighter rain periods, the time period over which excavations are left open will be reduced insofar as is reasonably practicable.

- Silt fences will be constructed using a permeable filter fabric (Hy-Tex Terrastop Premium silt fence or similar) and not a mesh. Silt fencing must be installed as per the manufacturer's guidelines. Silt fences should be maintained until vegetation on the disturbed ground has been re-established. Once installed, the silt fence should be inspected regularly during construction and more frequently during heavy rainfall.

Adherence to all Pollution Prevention Guidelines (PPGs), mitigation measures, and recommendations will be ensured as the proposed development lies 1.5km of one European site (1.15km as the crow flies) and the risk for surface water run-off into this European site is likely without the implementation of mitigation measures.

4.5.1.2 Management of Potential Pollutants

In the absence of a significant pollution source, a minor spill can be addressed effectively and efficiently on site using existing best practice pollution control procedures. In addition, when surface pollutants are released to soil, hydrocarbons undergo biological, physical, and chemical alterations including biodegradation and retardation.

- All works must comply with the guidance set out in the guidance document entitled: "*Control of Water Pollution from Construction Sites. Guidance for Consultants and Contractors (C532)*" (CIRIA, 2001)[xxxii];
- Guidelines for the crossing of watercourses during the construction of national road schemes IFI (2008)
- A spill method statement will be drawn up which all personnel must adhere to and receive training in;
- Spill-kits and hydrocarbon absorbent packs will be stored in the cabin of all construction vehicles and in specific areas around the site i.e. next to a chemical store. All machine operators and site staff will be fully trained in the use of this equipment;
- All machinery will be regularly maintained and checked for leaks. Servicing must be undertaken on level, hard surfaced designated areas;
- Re-fuelling of construction equipment and the addition of hydraulic oil or lubricants to vehicles / equipment will take place in designated hard surface, bunded areas. If it is not possible to bring machinery to the refuelling point, fuel will be delivered in a double-skinned mobile fuel bowser. A drip tray will be used beneath the fill point during refuelling operations in order to contain any spillages that may occur;
- All concrete will be mixed off site and poured in place at site. All concrete browsers will be washed down at a dedicated concrete washout onsite at least 50m from a surface water conduit. Concrete washings must not be disposed of onsite to any surface or

ground water feature. All washings will be removed offsite and treated at a licensed facility. No chemicals that are deleterious to aquatic organisms are to be used in cleaning works. All raw, uncured waste concrete must be cured at a designated location, 50m of surface water conduit;

- Waste will be removed from the site and disposed of by a permitted/licenced waste contractor in accordance with prevailing waste management regulations; and
- On completion of the works, all apparatus, plant, tools, offices, sheds, surplus materials, rubbish and temporary erections or works of any kind will be removed from the site.

4.5.1.3 Biosecurity

The spread or introduction of any alien invasive species and noxious weeds will be avoided by adopting appropriate mitigation measures as per guidance issued by the Transport Infrastructure Ireland (TII) (2010)[xxxiii] and Inland Fisheries Ireland (IFI) with respect to the protocols developed for the control of the spread of alien invasive species to the aquatic environment[xxxiv], including the following measures:

- Prior to arrival on site, the contractor's vehicles and equipment must be thoroughly cleaned. High-pressure steam cleaning, with water > 60 degrees C, is recommended for vehicles and equipment where reasonably feasible. If it is not possible to steam clean the equipment, a normal power hose must be used. After cleaning, equipment will be visually inspected to ensure that all adherent material and debris has been removed;
- All equipment (including footwear) that has come into contact with water or soils will be visually inspected for evidence of attached plant or animal material, or adherent mud or debris. This should be done before entering and leaving the site. Any attached or adherent material will be removed before entering or leaving the site; and
- All contractors will be required to sign a prepared form detailing the nature of the cleaning process carried out and the date on which this was conducted.

The presence of alien invasive species and requirement for actions (if any new invasive species are found to be present onsite) will be confirmed by a suitably qualified ecologist. Please note no vehicles will enter watercourses during the construction or operation of the proposed development.

4.5.2 *Operation Mitigation*

Relevant mitigation, as detailed above for the construction phase, must also be followed during the operational phase of the proposed development. It must be ensured that the following is complied with:

- All maintenance works must align with the guidance set out in the guidance document entitled: "*Control of Water Pollution from Construction Sites. Guidance for consultants and contractors (C532)*" (CIRIA, 2001)[xxxii];
- Spill-kits and hydrocarbon absorbent packs will be stored on site, as applicable;
- No chemicals that are deleterious to aquatic organisms are to be used in cleaning works; and
- All chemicals stored onsite will be stored in a bunded container to 110% capacity.

In the absence of a significant pollution source, a minor spill can be addressed effectively and efficiently on site using existing best practice pollution control procedures. In addition, when surface pollutants are released to soil, hydrocarbons undergo biological, physical, and chemical alterations including biodegradation and retardation.

- All machinery will be regularly maintained and checked for leaks. Servicing must be undertaken on level, hard surfaced designated areas;
- Re-fuelling of equipment and the addition of hydraulic oil or lubricants to vehicles / equipment will take place in designated hard surface, bunded areas. If it is not possible to bring machinery to the refuelling point, fuel will be delivered in a double-skinned mobile fuel bowser. A drip tray will be used beneath the fill point during refuelling operations in order to contain any spillages that may occur;
- All washings will be removed offsite and treated at a licensed facility. No chemicals that are deleterious to aquatic organisms are to be used in cleaning works; and
- Waste will be removed from the site and disposed of by a permitted/licenced waste contractor in accordance with prevailing waste management regulations.

4.5.2.1 *Surface Water Management*

The collected water will be captured and treated to allow settlement of particles prior to discharge to the receiving environment. This will ensure the reduction in suspended solids concentration of the captured water and, as a result, the receiving waterbody. Waste material generated during construction activities will be removed from site to an appropriately licensed or permitted waste facility to avoid potential for waste or litter to enter the surface water network. Foul water and floor wash water will only be discharged to the foul water network.

All vehicles exiting the proposed development will be required to divert through a wheel wash located along the access road of the proposed development. This infrastructure will ensure that vehicles do not cause soiling of roads. Water will be recycled within the wheel wash facility to minimise the water requirement.

To minimise any potential impact on the surface water and groundwater environments from material spillages, all fuel oils and other oils will be stored within bunded areas.

The design of all bunds will conform to EPA bunding specifications. The retention capacity of bunded areas will be 110% of the capacity of the largest tank or drum to be stored within the bunded area. Spill kits will be retained on-site to ensure that all spillages or leakages are dealt with immediately and staff will be trained in their proper use. Any servicing of vehicles on-site will be confined to designated areas.

Foul sewage and Floor Wash Water will be stored onsite in suitable tanks prior to being tankered off-site for disposal at a licensed waste water treatment facility. This will ensure that effluent is kept separate from the surface water network.

Treated stormwater runoff with low suspended solids will be discharged to the Loughbrown Stream when the dilution available in the stream channel, and when it reaches the Natura Sites, will mean it will have no significant impact on the river and therefore none on the Natura 2000 sites there and downstream on the River Suck Callows SPA. There are no sensitive organisms present downstream of the site. The removal of agricultural land from the proposed footprint will have a slight beneficial impact on the surface water runoff from the site.

The proposed discharge quality as per planning is:

- <25mg/l Total Suspended Solids (average value);

- <1mg/l Hydrocarbon; and
- <50 mg/l Nitrate.

4.5.2.2 *Invasive Species*

No invasive species were found within the footprint of the activity area of the proposed development. If any invasive species are identified within the overall landholding it will be fenced off and will remain undisturbed, as per best practice.

Preventing an invasive plant species from arriving on site or preventing the spread of an invasive plant species are the most effective management measures that can be taken. Prevention measures range from raising staff awareness, to ensuring that good site hygiene practices are employed for the movement of materials into the site. Prevention measures include:

- Adherence to the requirements of Inland Fisheries Ireland (2010) Biosecurity Protocol for Field Survey Work with respect to the protocols developed for the control of the spread of alien species to the aquatic environment.
- Regular walkovers by staff;
- Cordoning off the invasive species;
- Limiting movement of people and / or machinery if identified on site;
- Designating staff and machinery to the task for the duration of the works; and
- Ensuring anyone undertaking control measures is suitably qualified.

4.6 In-Combination Effects

Consideration has been given, to other relevant plans that have potential to have a cumulative impact upon European Sites.

- Forestry Programme 2014-2020: Ireland (DAFM, 2014);
- Foodwise 2025;
- National development Plan 2018-2027;
- National Climate Action Plan 2019;
- River Basin Management Plans (2018-2021);
- County Development Plans;

- Regional Waste Management Plans; and
- Ballinasloe Local Area Plan.

A review of the Ballinasloe Local Area plan identified the proposed area to which the plan relates[xxxv]. The Natura Impact Report undertaken on the Plan notes that there will be *no likely significant effects on Natura 2000 sites in the Administrative Area of the Plan in isolation or in combination with other Plans and Projects acting in the same area*[xxxvi] which includes the existing landfill and civic amenity sites adjacent to this site. Although this site is outside of the plan area, it is noted that development of the site and associated infrastructure relates directly to the plan. Landfill leachate at the closed landfill is currently pumped to Ballinasloe WWTP for treatment. No waste, no leachate or landfill infrastructure is present on the proposed site. No leachate is discharged to the adjacent stream. Water quality in the streams is similar upgradient and downgradient of the site. Due to natural biodegradation processes, first order decay (exponential decline) occurs in the landfill leachate concentrations from the decrease exponentially over time, reducing the loading on the WWTP.

In-combination effects with other developments in the area are possible. A review of Galway County Council planning portals revealed small scale residential/commercial development and rural developments (e.g. residential one-off housing and agriculturally based developments) in rural areas surrounding area.

Undertaking of general agricultural/forestry operations in areas adjacent to WTS could potentially give rise to impacts of a similar nature to those arising from the proposed operations. Given that agricultural operations, are periodic and not continuous and have been ongoing for many decades, resulting in a background level of habituation, the in-combination effects of agricultural operations is not likely to be significant. No other construction projects are ongoing on the callows and no impacts from the proposed development are anticipated on the NATURA 2000 network, therefore no cumulative or in combination impacts will arise.

Adherence to the overarching policies and objectives of the Galway County Development Plan 2015-2021 will ensure no adverse effects will occur from any development alone that may arise. This will include the requirement for any development taking place to undergo Screening for Appropriate Assessment and/or Appropriate Assessment where necessary and in doing so to demonstrate that the project will not give rise to any adverse direct, indirect or secondary effects on the River Suck Callows SPA, Middle Shannon Callows SPA and Shannon Callows SAC.

With the implementation of the proposed mitigation measures, as outlined, it is considered unlikely that any of the identified potential impact sources listed above would result in any significant adverse effects on the integrity of the SACs/SPAs and therefore, it is not predicted to result in any significant "in-combination" effects with any other plans or projects.

In conclusion, there is no potential for any other plan or project to adversely affect the integrity of the River Suck Callows SPA, the River Shannon Callows SAC or the Middle Shannon Callows SPA in-combination with the proposed development.

4.7 Residual Impacts

The Proposed Project has the potential to negatively affect water quality in the receiving surface water environment that drain to the River Suck and River Shannon, therefore, there is the potential for the conservation objectives of the River Suck Callows SPA, Middle Shannon Callows SPA and River Shannon Callows SAC to be negatively affected. Mitigation measures will be implemented to ensure that the receiving surface water network is protected, and the conservation objectives of the European sites within the Zol are not negatively affected by the Proposed Project.

The Proposed Project has the potential to spread and introduce non-native invasive species. Mitigation measures will be implemented to ensure that any non-native invasive species are controlled and are not spread, and that the conservation objectives of the European sites within the Zol are not negatively affected by the Proposed Project.

5.0 CONCLUSION

The level of treatment proposed means that the surface water runoff from facility to the River Suck will not have any adverse effects on downstream Natura Sites. There are no likely effects on the birdlife using the River Suck Callows SPA, River Shannon Callows SAC, Middle Shannon Callows SPA or on the habitat itself and therefore no compromise of the conservation objectives. Level of nutrients discharged will be within the proposed limits and will not be significant to the birdlife or its food (plants or invertebrates).

Since the treated surface water will not have a significant effect there is no likelihood of in-combination effects from this project and others combined. It is considered, on the basis of objective information and in light of best scientific knowledge in the field, that the development individually or in-combination with other plans or projects will not have a significant adverse

effect on the integrity of the River Suck Callows SPA, the River Shannon Callows SAC or the Middle Shannon Callows SPA in view of the site's structure, function and conservation objectives.

6.0 REFERENCES

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[xiii] Irish Water Natura Impact Statement as part of the Ballinasloe Waste Water Discharge Licence Application: D0032-01

[xiv] Irish Water: 1 May2014; Letter Reference: IW-ER-Lt0022; RE: Ballinasloe Waste Water Discharge Licence Application D0032-01 to EPA.

[xv] Irish Water Natura Impact Statement as part of the Ballinasloe Waste Water Discharge Licence Application: D0032-01

[xvi] All values refer to daily averages based on a 24-hour flow proportional composite sample, except where stated to the contrary and for pH, which refers to continuous values. Levels apply to effluent prior to dilution, e.g., storm water, etc.

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[xxxvi] Moore Group Ltd (2015) Habitats Directive Assessment (Natura Impact Report) for the Draft Ballinasloe Local Area Plan 2015-2021 http://www.galway.ie/en/media/NIR%20Bsloe%20Draft%20LAP%202015-2021.pdf

Appendix A – Responses to NIS

Department of Culture, Heritage and the Gaeltacht – 29 May 2020

An Roinn Cultúir,
Oidhreachta agus Gaeltachta
Department of Culture,
Heritage and the Gaeltacht

Your Ref: **7526**
Our Ref: **G Pre00057/2020**
(Please quote in all related correspondence)

29 May 2020

Tobin Consulting
Block 10-4
Blanchardstown Corporate Park
Dublin 15
Via email

Re: NIS for waste licence at Pollboy, Ballinasloe, Co. Galway.

A chara

On behalf of the Department of Culture, Heritage and the Gaeltacht, I refer to correspondence received in connection with the above.

Outlined below are heritage-related observations/recommendations of the Department under the stated heading(s).

Nature Conservation
The Department refers to your letter of consultation and accompanying map submitted on the 16/4/2020. The Department welcomes the opportunity to provide information and advice with regard to the waste permit application for Pollboy, Ballinasloe, Co. Galway. However, it is not clear what the context is for the consultation as this Department has already commented on the waste permit application for this site (WFP-G-19-0003-01) and the accompanying NIS at that time. To this end, for your reference, it is important to include details of consultations with and/or advice from the relevant authority, notably in relation to ecological and environmental assessments that are required, and the scope of these.

You should note and consult the general text and advice on 'development consultations' available from https://www.npws.ie/development-consultations – as this includes general information about the basic elements of environmental assessments, and the data, information and reports that are made available via the NPWS website.

The impact of the development on the flora, fauna and habitats present should be assessed. In particular the impact of the proposed development should be assessed, with regard to:

- Natura 2000 sites, i.e. Special Areas of Conservation (SAC) designated under the EC Habitats Directive (Council Directive 92/43/EEC) and Special Protection Areas (SPA) designated under the EC Birds Directive (Directive 2009/147 EC),.

Relevant guidance on this is available in the following documents:

- Assessment of Plans and Projects Significantly affecting Natura 2000 Sites: Methodological Guidance on the provisions of Article 6(3) and 6(4) of the Habitats Directive 92/43/EEC (EC, 2001)
- European Communities (2018) Managing Natura 2000 Sites: the provisions of Article 6 of the 'Habitats' Directive92/43/EEC, Office for Official Publications of the European Communities, Luxembourg.
- European Commission and the Department of the Environment's Guidance on the Appropriate Assessment of Plans and Projects in Ireland (December 2009, amended February 2010).

Consideration should also be given to whether the proposed development has potential to impact on:

- Other designated sites, or sites proposed for designation, such as Natural Heritage Areas (Suck River Callows NHA (Code 000222) and proposed Natural Heritage Areas, Nature Reserves and Refuges for Fauna or Flora, designated under the Wildlife Acts 1976 to 2018,
- Species protected under the Wildlife Acts including protected flora,
- 'Protected species and natural habitats', as defined in the Environmental Liability Directive (2004/35/EC) and European Communities (Environmental Liability) Regulations, 2008, including Birds Directive – Annex I species and other regularly occurring migratory species, and their habitats (wherever they occur) and Habitats Directive – Annex I habitats, Annex II species and their habitats, and Annex IV species and their breeding sites and resting places (wherever they occur),
- Important bird areas such as those identified by Birdlife International,
- Features of the landscape which are of major importance for wild flora and fauna, such as those with a "stepping stone" and ecological corridors function, as referenced in Article 10 of the Habitats Directive.
- Other habitats of ecological value in a national to local context (such as those identified as locally important biodiversity areas within Local Biodiversity Action Plans and County Development Plans).
- Red data book species,
- Biodiversity in general.

Reference should be made to the National Biodiversity Action Plan (2017-2021) and the Ballinasloe Local Area Plan (2015-2021) and to the objectives of the Galway County Development Plan (2015-2021).

You are requested to send further communications to this Department's Development Applications Unit (DAU) at **manager.dau@chg.gov.ie** (team monitored); if this is not possible, correspondence may alternatively be sent to:

The Manager
Development Applications Unit (DAU)
Department of Culture, Heritage and the Gaeltacht
Newtown Road
Wexford
Y35 AP90

Is mise, le meas

Connor Rooney
Development Applications Unit