CUTHBERTENVIRONMENTAL

EU Habitats Directive

Appropriate Assessment

Screening and Natura Impact Statement

of

A Proposal to Increase Annual Waste Acceptance Tonnage

at

Forge Hill Recycling Ltd,

Forge Hill,

Cork

Cuthbert Environmental

October 2019

Vat No. IE 3334070 OH

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Screening and Natura Impact Statement

Forge Hill Recycling Ltd

Forge Hill

Cork City

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1 Introduction

Cuthbert Environmental has been commissioned to undertake a Habitats Directive screening for Appropriate Assessment of a proposal from Forge Hill Recycling Ltd to increase the waste acceptance rate from 82,000 tonnes to 100,000 tonnes and this will require planning permission and a revision of the EPA licence .

This screening for Appropriate Assessment forms Stage 1 of the Habitats Directive assessment process and has been undertaken in order to comply with Article 6(3) of the Habitats Directive. This report is intended to aid the competent authority in determining whether the proposed project is likely (alone or in combination with other projects) to result in significant effects to European Sites. Further steps are to be determined by the findings of the screening assessment.

1.1 Background & Requirements for HDA (Habitats Directive Assessment)

1.1.1 Project Description

Forge Hill Recycling takes in mixed dry recyclables, segregates suitable materials into single waste streams and then bales and stores them prior to transfer to overseas recycling facilities. The processing is highly automated and manual picking is mostly limited to quality control. Non-recyclable residues are sent to other waste management facilities in Ireland for processing to produce solid recovered fuel (SRF).

The proposed development involves the expansion of waste acceptance from 82,000 to 100,000 tonnes/year. To accommodate this, an extension (1,468m^2) comprising a new additional intake and storage area will be constructed at the north-eastern elevation of the waste processing building. A second, smaller extension (140m^2) to the south-eastern elevation will be built to accommodate possible future reconfigurations of the waste processing equipment.

The construction of the large extension requires the demolition of the power wash hut; the relocation of the eastern boundary fence of the operational area to eastern edge of the landowner's holding; the removal of a treeline that is parallel to the fence and paving of the area of disturbed ground (ca 450m^2) between the fence and the property boundary.

All waste acceptance, processing and storage, with the exception of the external storage of a small amount (maximum of 50 tonnes at any one time) of baled metal wastes will continue to be carried out inside the buildings. Waste acceptance and operations will normally be between 06.00 and 24.00 hours; however on occasion waste may be accepted outside these hours. Waste delivery and dispatch movements will be spread over the day and will typically be outside the peak traffic hours.

The new intake building will enclose the drains serving the apron in front of the access door on the eastern side to the existing building and the truck/bin wash area. These drains will be sealed. Rainwater run-off from the new paved area in the east of the site will be collected and connected to the drainage system that discharges to the Irish Water foul sewer. Rainwater run-off from the

roofs of the extensions will be collected in the surface water drainage system that connects to the flow balancing tank.

To provide a contingency back-up to the oil tanker deliveries it is proposed to provide a 1000 litre plastic, diesel storage tank that will be located in a bund in the south-east of the site. The rainwater run-off from this area will discharge to the foul sewer via the oil interceptor. The hydraulic and lubricating oils and coolants will be stored in a bunded pallet inside the processing building.

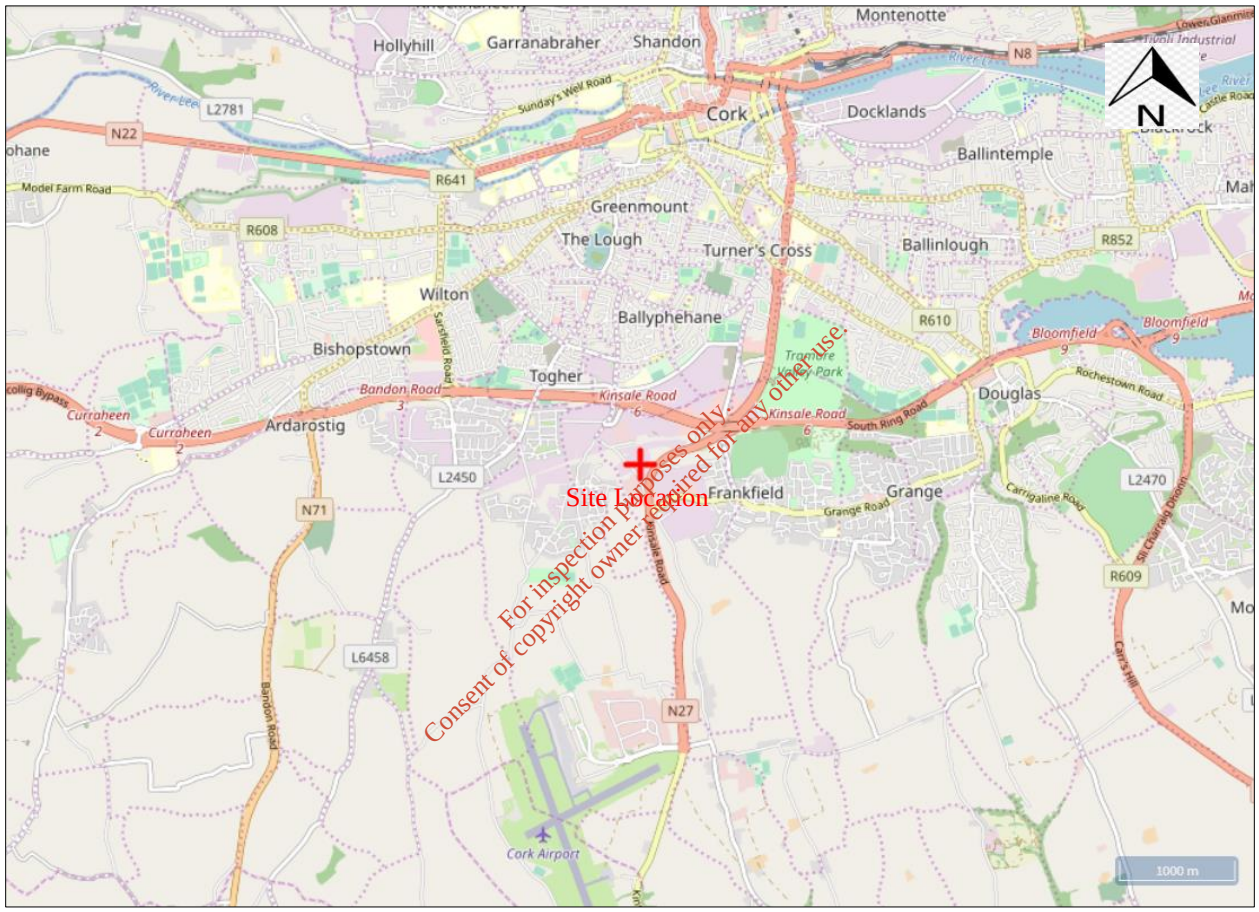

Figure 1. Project Site Location (Data Source: EPA, 2019)

1.1.2 **Requirement for Habitat Directive Assessment**

The transposition of the EU Habitats Directive Assessment by the European Communities (Natural Habitats) Regulations 1997 – 2011 (referred to as the Habitat Regulations) provide the legal basis for the protection of habitats and species of European importance in Ireland. The legislative protection of habitats and species provided by the Habitats Directive has been implemented in Ireland and throughout Europe through the establishment of a network of designated conservation areas known as the Natura 2000 (N2K) network. The N2K network includes sites designated as Special Areas of Conservation (SACs), under the EU Habitats Directive and Special Protection

Areas (SPAs) designated under the EU Birds Directive. SACs are designated in areas that support habitats listed on Annex I and/or species listed on Annex II of the Habitats Directive. SPAs are designated in areas that support: 1% or more of the all-Ireland population of bird species listed on Annex I of the EU Birds Directive; 1% or more of the population of a migratory species; and more than 20,000 waterfowl. Under the Habitat Regulations, sites designated as SACs and SPAs are referred to as **European Sites**. It is noted that, under the Habitats Regulations, the term European Site also includes candidate SACs (cSACs) as well as SACs.

Articles 6(1) & (2) of the Habitats Directive set out provisions for the conservation management of European Sites. Articles 6(3) and 6(4) of this Directive set out a series of procedural steps that test whether or not a plan or project is likely to affect a European Site. Article 6(3) also establishes the requirement for a HDA:

"*any plan or project not directly connected with or necessary to the management of the (Natura 2000) site but likely to have a significant effect thereon, either individually or in combination with other plans and projects, shall be subjected to appropriate assessment of its implications for the site in view of the site's conservation objectives. In light of the conclusions of the assessment of the implication for the site and subject to the provisions of paragraph 4* (i.e Article 6(4)), *the competent national authorities shall agree to the plan or project only after having ascertained that it will not affect the integrity of the site concerned and if appropriate, after having obtained the opinion of the general public*".

As such, any project with the potential to result in likely significant effects, either individually or in combination with other plans or projects, upon the conservation objectives of a Natura 2000 site must undergo an assessment of its implications on relevant Natura 2000 sites. In order to establish whether or not a likely significant effect will arise as a result of the implementation of this project in Forge Hill Recycling Ltd, a screening exercise should be undertaken.

1.1.3 Stages of the Habitats Directive Assessment

European Guidance[1] has outlined a staged process for the completion of a HDA.

- Stage 1 – Screening: This stage defines the proposed plan, establishes whether the proposed plan is necessary for the conservation management of the Natura 2000 site and assesses the likelihood of the plan to have a significant effect, alone or in combination with other plans or projects, upon a Natura 2000 site.
- Stage 2 – Appropriate Assessment: If a plan or project is likely to have a significant effect on a Natura 2000 site, Appropriate Assessment must be undertaken. In this stage the impact of the plan or project to the Conservation Objectives of the Natura 2000 site is assessed. The outcome of this assessment will establish whether the plan will have an adverse effect

[1] European Commission Environment DG 2001: Assessment of plans and projects significantly affecting Natura 2000 sites

upon the integrity of the Natura 2000 site. The final document is referred to as a Natura Impact Statement (NIS).

- Stage 3 – Assessment of Alternative Solutions: If it is concluded that, subsequent to the implementation of mitigation measures, a plan has an adverse impact upon the integrity of a Natura 2000 site, it must be objectively concluded that no alternative solutions exist before the plan can proceed.
- Stage 4 – Where no alternative solutions exist and where adverse impacts remain but imperative reasons of overriding public interest (IROPI) exist for the implementation of a plan or project, an assessment of compensatory measures that will effectively offset the damage to the Natura site 2000 will be necessary.

Following on from Article 6(3) of the Habitats Directive, the objective of this assessment is to conclude whether the activities associated with the proposed project in Forge Hill Recycling Ltd are likely to result in significant adverse effects to any European Sites.[2]

2 Stage 1: Screening Assessment

2.1 Screening Methodology

The function of the screening assessment is to identify whether or not the proposal will have a likely significant effect on European Sites. In this context "likely" refers to the presence of doubt with regard to the absence of significant effects (ECJ case C-127/02) and "significant" means not trivial or inconsequential but an effect that has the potential to undermine the site's conservation objectives (English Nature, 1999; ECJ case C-127/02). In other words, any effects that would compromise the functioning and viability of a site and interfere with achieving the conservation objectives of the site would constitute a significant effect.

The nature of the likely interactions between the proposal and the integrity of European Sites will depend upon the sensitivity of the Site's qualifying features to potential impacts arising from the proposal; the current conservation status of the Site; and the likely changes to water quality that will result from activities associated with the project, in combination with other plans and projects.

This screening exercise has been undertaken with reference to respective National and European guidance documents: Appropriate Assessment of Plans and Projects in Ireland (NPWS, 2009, amended in 2010) and *Assessment of Plans and Projects Significantly Affecting Natura 2000 sites – Methodological Guidance of the Provisions of Article 6(3) and (4) of the Habitats directive 92/43/EEC* and recent European and National case law (ECJ C-258/11 & High Court case ref

[2] Note - this report has taken account of the recent ECJ ruling (C-323/17): "Article 6(3) of the Habitats Directive must be interpreted as meaning that, in order to determine whether it is necessary to carry out, subsequently, an appropriate assessment of the implications, for a site concerned, of a plan or project, it is not appropriate, at the screening stage, to take account of the measures intended to avoid or reduce the harmful effects of the plan or project on that site."

2014-320-JR). The following guidance documents were also of relevance during this Screening Assessment:

- The Habitats Regulations; A guide for competent authorities. Environment and Heritage Service, Sept 2002.
- Managing Natura 2000 Sites – The provisions of Article 6 of the Habitats directive 92/43/EEC. European commission (2000). (To be referred to as MN 2000).
- Guidance 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. European Commission (2007).

The EU Guidelines (2001) outline the stages involved in undertaking a Screening Assessment of a project that has the potential to have likely significant effects on European Sites. The methodology adopted for this Screening Assessment is informed by these guidelines and was undertaken in the following stages:

1. Define the project and determine whether it is necessary for the conservation management of European Sites;
2. Identify European Sites likely to be influenced by the project;
3. Review the project to determine if it has the potential to affect European Sites and determine whether the European Sites are vulnerable to the effects; and
4. Identify other plans or projects that, in combination with the project, have the potential to affect European Sites.

2.2 The Project and N2K Baseline

2.2.1 Definition of the Project

The project has been defined in *Section 1.1.1* and it is clear from the description of the project that it is not necessary for the conservation management of European Sites.

2.2.2 Description of the Project Area

(i) Receiving Environment

The site covers 10,110 m^2 and comprises a waste processing building; two storey office, an electrical substation, a power wash storage hut; two weighbridges and paved open yards and an unpaved area in the east of the site. A security fence surrounds the operational area and there are two entrances off Forge Hill Road.

The site is bounded to the north and south by industrial and commercial premises; to the west by Forge Hill Road, with commercial premises on the opposite side of the road. To the east of the site is a field beyond which is the new N27 Kinsale Road.

As seen in Figure 5, there is a stream located approximately 200 metres west of the site. This stream flows into Cork Harbour 3.5 km downstream via the Tramore River (see Figure 5).

Figure 2. Proposed site aerial photograph (Data Source: Google Earth, 2019).

2.2.3 Identification of European Sites

The approach adopted during the identification of European Sites follows that outlined in established guidance (Scott Wilson *et al.*, 2006). An initial list of European Sites occurring within a radius of 15 km was compiled. Figure 3 shows all European Sites occurring within this radius of the project site. The following European Sites occur within this range:

1. Cork Harbour SPA
2. Great Island Channel SAC

Once all European Sites in this area were identified, an initial assessment of the project's relationship with these European Sites was undertaken to identify whether any of them will be affected by site activities. The zone of influence of the project concerns the project's potential to result in direct and indirect impacts to European Sites.

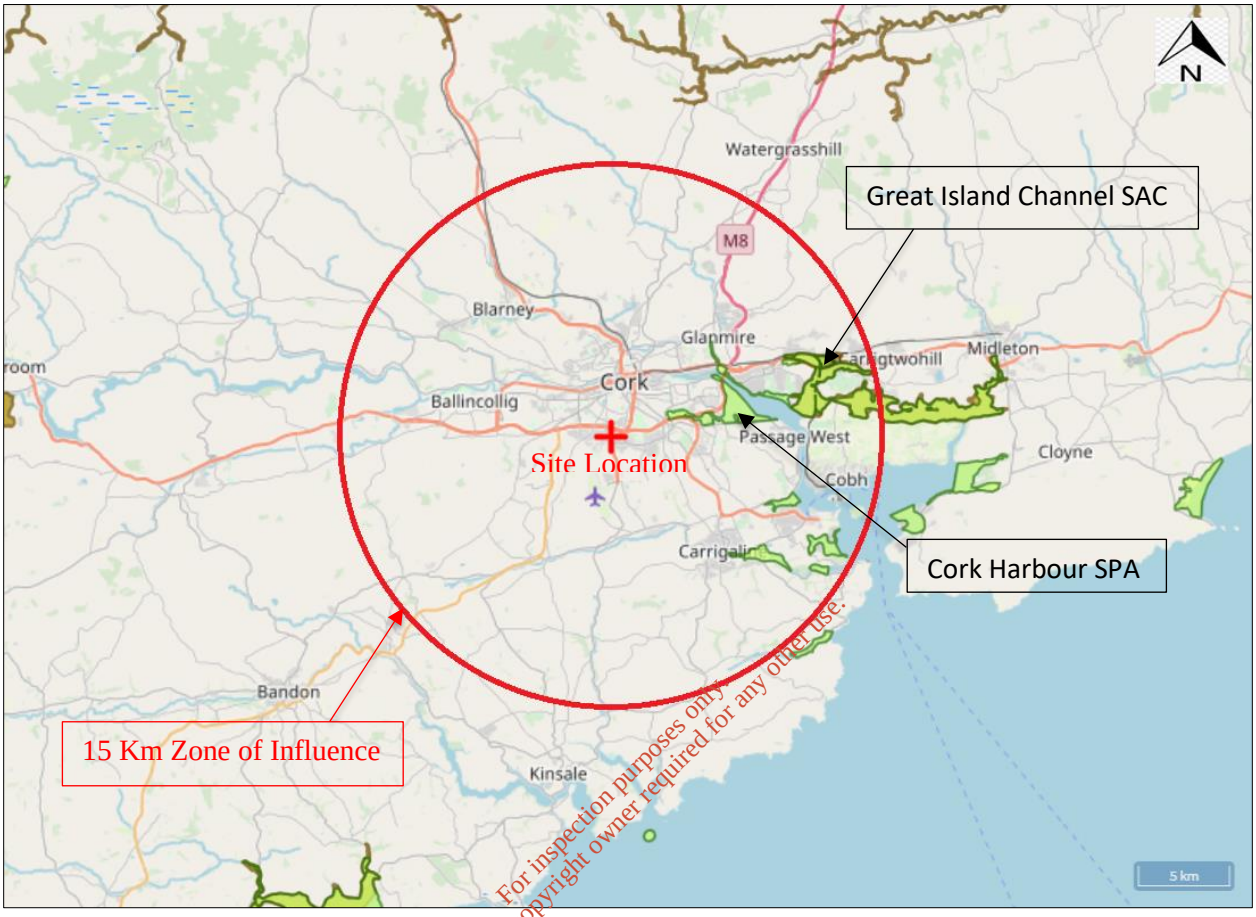

Figure 3. 15-km sensitivity radius around project site (Data Source: EPA, 2019).

2.2.4 Impacts on European Sites

Direct Impacts are impacts which occur within or immediately adjacent to European Sites and result in the:

- Physical loss of Qualifying Features of Interest through habitat loss, habitat fragmentation, species disturbance or mortality. Note that impacts to qualifying mobile species outside the boundary of their European Site are considered under indirect impacts below; and
- Physical damage to Qualifying Features of Interests through habitat degradation, habitat fragmentation, severance/barrier effects and edge effects.

The location of the proposed site is such that direct impacts are not an issue in this scenario.

Indirect Impacts are:

- Secondary impacts which occur as a result of direct impacts e.g. the effects of displaced species on the occupancy of alternative habitats),
- Impacts that occur away from the project sites e.g. downstream to species and habitats as a result of perturbations to water quality; and
- The interaction of effects e.g. the interaction of siltation and chemical pollution to water quality.

As previously stated, there is a stream located just west of the site. This stream flows into Cork Harbour SPA ~3.5 km downstream via the Tramore River. Cork Harbour is also the site of Great Island Channel SAC, which is located north of Great Island and extends towards Glounthane, Carrigtwohill and Midleton. The hydrological link between the proposed site and the SAC is not as direct as with the SPA. There may be potential for material to be carried to the SAC at high tide, but outside this time, the pathway is expected to bypass Great Island Channel and flow towards the mouth of Cork Harbour.

There is an inherent risk that storm water runoff may pick up pollutants from a metal storage area located at the south-east corner of the site. These metal contaminants in the storm water could be passed through the adjacent storm water gully which will direct storm water in the direction of the stream located west of the site via a drain.

2.2.5 Cork Harbour SPA and Great Island Channel SAC

The following table (overleaf) outlines the qualifying features (the characteristics of a site that led to its designation) and conservation objectives of Cork Harbour SPA and Great Island Channel SAC.

Table 1. Qualifying Features and Conservation Objectives – Cork Harbour SPA

Site Name and Code	Qualifying Interests [Natura 2000 Code] *Denotes priority habitat	Conservation Objectives
Cork Harbour SPA [004030]	[A004] Little Grebe *Tachybaptus ruficollis* [A005] Great Crested Grebe *Podiceps cristatus* [A017] Cormorant *Phalacrocorax carbo* [A028] Grey Heron *Ardea cinerea* [A048] Shelduck *Tadorna tadorna* [A050] Wigeon *Anas penelope* [A052] Teal *Anas crecca* [A054] Pintail *Anas acuta* [A056] Shoveler *Anas clypeata* [A069] Red-breasted Merganser *Mergus serrator* [A130] Oystercatcher *Haematopus ostralegus* [A140] Golden Plover *Pluvialis apricaria* [A141] Grey Plover *Pluvialis squatarola* [A142] Lapwing *Vanellus vanellus* [A149] Dunlin *Calidris alpina alpina* [A156] Black-tailed Godwit *Limosa limosa* [A157] Bar-tailed Godwit *Limosa lapponica* [A160] Curlew *Numenius arquata* [A162] Redshank *Tringa totanus* [A179] Black-headed Gull *Chroicocephalus ridibundus* [A182] Common Gull *Larus canus* [A183] Lesser Black-backed Gull *Larus fuscus* [A193] Common Tern *Sterna hirundo* [A999] Wetlands	To maintain the favourable conservation condition of the qualifying interests in Cork Harbour SPA (see left).

Table 2. Qualifying Features and Conservation Objectives – Great Island Channel SAC

Site Name and Code	Qualifying Interests [Natura 2000 Code] *Denotes priority habitat	Conservation Objectives
Great Island Channel SAC [001058]	[1140] Mudflats and sandflats not covered by seawater at low tide [1330] Atlantic salt meadows (*Glauco-Puccinellietalia maritimae*)	• To maintain the favourable conservation condition of the habitat 'Mudflats and sandflats not covered by seawater at low tide' • To restore the favourable conservation condition of the habitat 'Atlantic salt meadows (*Glauco-Puccinellietalia maritimae*)'

(i) Foul Water

Sanitary wastewater from the toilets and waste water from the staff welfare facilities discharge directly to the Irish Water foul sewer. Rainwater run-off from areas of the site where, due to the operations and waste types that were carried out, were susceptible to contamination and directs it to the municipal foul sewer via a Class 1 Oil Interceptor. There is a manual shut-off valve on the foul sewer line just outside the northern exit gate.

(ii) Storm water

Rainwater run-off the paved open yard areas that are not connected to the foul water sewer is directed to a Class I Full Retention Oil interceptor, fitted with an oil alarm, from where it flows to an underground two chamber tank, located in the north west of the site. The water enters the tank's western chamber ($82m^3$).

Rainwater run-off from the building roofs is piped directly to the western chamber and does not pass through the interceptor. The water in the western chamber is kept at a high level for use for fire-fighting by means of a high level overflow pipe into the eastern chamber ($90m^3$). This chamber is used for flow attenuation and also serves as a firewater retention facility. A level activated submersible pump is used to control the water level in the chamber by pumping it out via a rising main to an inspection chamber (SW-1) at the western boundary.

There is a pipe from SW-1 to an unnamed stream to the west of the site. This stream joins the Tramore River, approximately 370m to the north of the site. There is a manual shut off valve on the system at SW-1.

Under normal conditions the roof-water flows directly to the balancing tank, while run-off from the paved areas, other than those connected to the foul sewer, passes through the oil interceptor and into the western chamber. During a heavy rainfall event the water level in the eastern chamber will increase if the inflow rate is higher that the pump capacity. If the tank fills the water will enter an overflow pipe near the top of the chamber. This pipe connects to SW-1.

In the event of an incident that has the potential to contaminate surface water the emergency response actions include switching off the pump in the balancing tank and closure of the valve at SW-1.

Despite the above, there is an inherent risk that storm water runoff may pick up pollutants from a metal storage area located at the south-east corner of the site and pass through the adjacent storm water gully, before being transported in the direction of the stream located to the west of the site. This stream flows into Cork Harbour via the Tramore River, which is the site of Cork Harbour SPA, and Great Island Channel SAC further downstream. It is considered likely that storm water passing through this metal storage area will experience an increase in the concentration of dissolved metals. The oil interceptor, being designed to intercept insoluble liquids, will not have

the potential to intercept soluble materials and prevent them from leaving the site. The significance of this consequence is dependent on the concentration and volume of the discharge. For the purpose of this report, the precautionary principle is employed and it is assumed to be significant in the absence of rigid alternative evidence.

The metal storage area and storm water gully are shown in Figure 4 overleaf. The nearby stream, which storm water is discharged into is shown in Figure 5.

Figure 4. locations of Metal storage area, storm water gully and nearby stream (Source: Brian O'Kennedy & Associates Ltd)

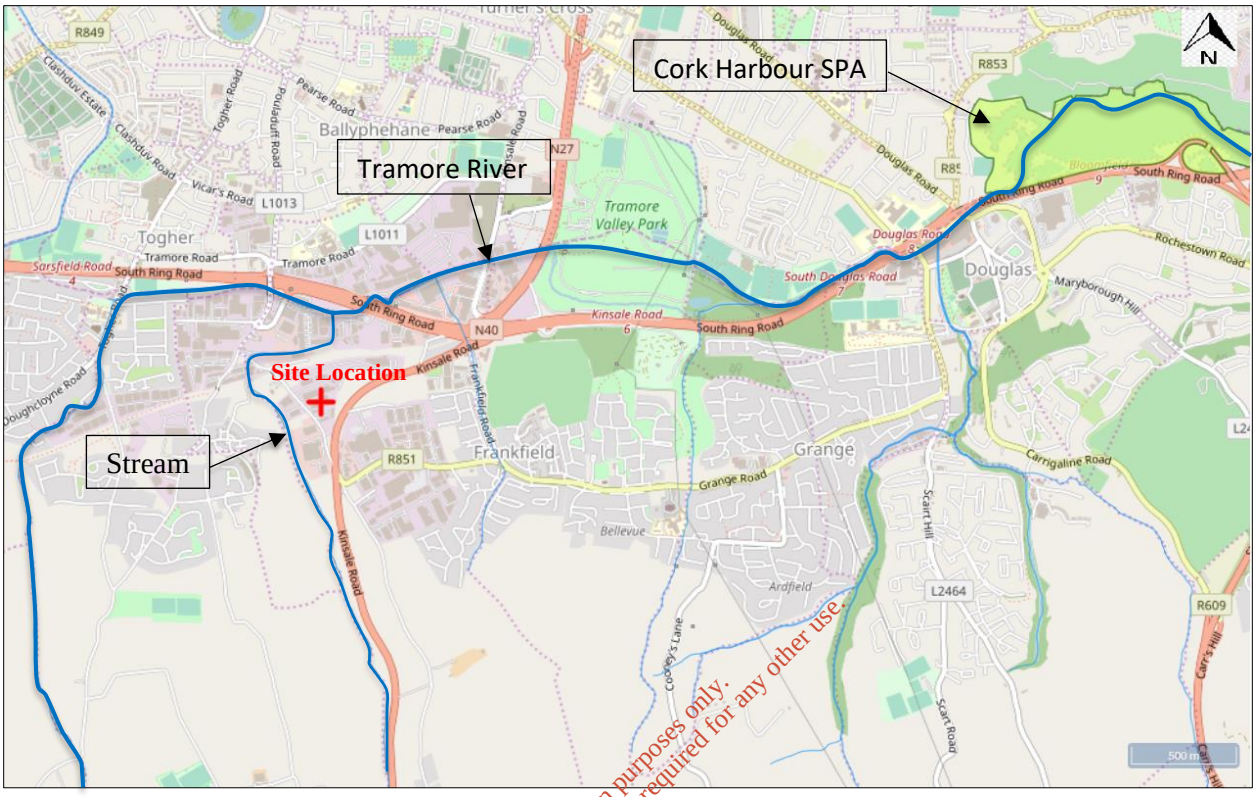

Figure 5. Water pathway between proposed site and Cork Harbour SPA (Source: EPA Maps, 2019)

Storm Water Containment Measures

The drainage layout has been altered in response to the risk of contamination of the watercourse. Run-off from the metal storage area is now diverted to sewer. However, in the context of Appropriate Assessment this is considered a mitigation measure, which cannot be taken into account at the screening stage (see footnote on page 5). The rest of this screening assessment will thus proceed as if no such measures were in place. They are discussed later in Section 4.3.

(iii) Emissions

The EPA licence requires weekly monitoring of the quality of the surface water discharge to the stream, which is conducted at SW-1. The monitoring includes pH, temperature, conductivity, total organic carbon (TOC), total suspended solids (TSS), biochemical oxygen demand (BOD), chemical oxygen demand (COD), total ammonia, total nitrogen, and mineral oil.

The EPA licence does not specify emission limit values for the discharge, but does stipulate that is should not be of environmental significance. The monitoring results confirms the discharge does not present any environmental risk to the receiving water.

The licence requires weekly monitoring of the emissions to foul sewer to ensure they comply with the specified emission limit values. The monitoring carried out between September 2016 and February 2018 confirm the emission complies with the limit values.

Groundwater quality monitoring is carried out biannually and the results have established that the water quality is goof.

Potential and actual emissions from the facility, in addition to the surface water and foul water discharges, include noise, odour and dust. The routine monitoring carried out in accordance with the EPA licence conditions has established that site operations noise and dust emissions do not result in nuisance or impairment of amenity outside the site boundary.

In summary, Table 3 below details the likely effects the proposed project will have on the European Sites within the 15-km sensitivity zone.

Table 3. Likely changes to the integrity of European Sites by virtue of proposed project

Site Name	Reduction in habitat area	Disturbance to key species	Habitat or species fragmentation	Reduction in species density	Changes in key indicators of conservation value	Climate change
Cork Harbour SPA	Possible	Possible	Possible	Possible	Possible	None envisaged
Great Island Channel SAC	Possible	Possible	Possible	Possible	Possible	None envisaged

2.2.6 **Other Plans or Projects in the Area**

In assessing the potential for "in-combination" effects, the research undertaken for this screening exercise took note of the following documentation:

- Existing planning applications.

Figure 6 is taken from Cork City Council's Planning Enquiry System. From examining the available information, there appears to be a number of recent planning applications in the vicinity of the project site. This includes application number 1938707. This involves an application for "Permission for retention...for the constructed (circa 2006) additional mezzanine ancillary office floor area at first floor level, change of use of part of existing warehouse ground floor area to ancillary offices and service area, material alterations to existing external elevations and associated site works". Another recent application in the vicinity of Forge Hill Recycling is application number 185498. This application involves the "Construction of 28 No. dwelling houses (change of house type and layout to part of the permitted residential development as granted under 04/7674, extended under 10/5240 and 13/5025 and associated site works on sites 10-17 Laharran West 1-20 Brook Glen". It is believed that these applications, along with any other applications in the

vicinity will not interact with the project site in any way that would negatively affect nearby European sites.

Figure 6. Planning applications in the vicinity of the proposed site

2.2.7 Potential Impacts on European Sites within the Project's Sensitivity Zone

Cork Harbour SPA and Great Island Channel SAC are both at risk of indirect negative impacts by way of storm water contamination (as per Section 2.2.5). Changes to the drainage layout have already been completed in response to this issue, but these changes are considered mitigation measures for the purpose of this report. Mitigation measures cannot be taken into account at the screening stage.

3 Screening Conclusion

As per Section 2.2.7 above, this screening exercise has found potential for significant negative impacts to 2 European Sites occurring within the zone of influence of the project site.

For this reason, Stage 2 – Appropriate Assessment, must be carried out.

4 Stage 2 - Natura Impact Statement (NIS)

In accordance with Section 1.1.3 of the screening report (see Page 4) and with the NPWS guidance document (2009), as the proposed project has the potential to have significant negative impacts on a Natura 2000 site (European Site), Appropriate Assessment must be carried out. NPWS guidance (2009) states the following:

"At Stage 2, the impact of a project or plan alone and in combination with other projects or plans on the integrity of the Natura 2000 site is considered with respect to the conservation objectives of the site and to its structure and function."

This NIS will contain the following sections:

1. Qualifying Features and Conservation Objectives of Cork Harbour SPA and Great Island Channel SAC
2. Description of Potential Impacts
3. Mitigation Measures
4. Conclusion Statement

4.1 Qualifying Features and Conservation Objectives of European Sites

The screening report identified 2 European Sites within the proposed project's 15-km zone of influence – Cork Harbour SPA and Great Island Channel SAC. The qualifying features and conservation objectives of these sites are shown once again in the table overleaf. A site synopsis (produced by the NPWS) for each of these sites is available in Appendix I.

Table 4. Qualifying Features and Conservation Objectives – Cork Harbour SPA

Site Name and Code	Qualifying Interests [Natura 2000 Code] *Denotes priority habitat	Conservation Objectives
Cork Harbour SPA [004030]	[A004] Little Grebe *Tachybaptus ruficollis* [A005] Great Crested Grebe *Podiceps cristatus* [A017] Cormorant *Phalacrocorax carbo* [A028] Grey Heron *Ardea cinerea* [A048] Shelduck *Tadorna tadorna* [A050] Wigeon *Anas penelope* [A052] Teal *Anas crecca* [A054] Pintail *Anas acuta* [A056] Shoveler *Anas clypeata* [A069] Red-breasted Merganser *Mergus serrator* [A130] Oystercatcher *Haematopus ostralegus* [A140] Golden Plover *Pluvialis apricaria* [A141] Grey Plover *Pluvialis squatarola* [A142] Lapwing *Vanellus vanellus* [A149] Dunlin *Calidris alpina alpina* [A156] Black-tailed Godwit *Limosa limosa* [A157] Bar-tailed Godwit *Limosa lapponica* [A160] Curlew *Numenius arquata* [A162] Redshank *Tringa totanus* [A179] Black-headed Gull *Chroicocephalus ridibundus* [A182] Common Gull *Larus canus* [A183] Lesser Black-backed Gull *Larus fuscus* [A193] Common Tern *Sterna hirundo* [A999] Wetlands	To maintain the favourable conservation condition of the qualifying interests in Cork Harbour SPA (see left).

Table 5. Qualifying Features and Conservation Objectives – Great Island Channel SAC

Site Name and Code	Qualifying Interests [Natura 2000 Code] *Denotes priority habitat	Conservation Objectives
Great Island Channel SAC [001058]	[1140] Mudflats and sandflats not covered by seawater at low tide [1330] Atlantic salt meadows (*Glauco-Puccinellietalia maritimae*)	• To maintain the favourable conservation condition of the habitat 'Mudflats and sandflats not covered by seawater at low tide' • To restore the favourable conservation condition of the habitat 'Atlantic salt meadows (*Glauco-Puccinellietalia maritimae*)'

4.2 Description of Potential Impacts

As described in the screening report, there is a risk of contaminated water entering Cork Harbour SPA and Great Island Channel SAC as a result of storm water discharge from the proposed site.

The following is considered a worst-case scenario: If, for the sake of argument, a large quantity of metal contaminated storm water was discharged from the site into the nearby stream, it would make its way to Cork Harbour SPA and Great Island Channel SAC via the Tramore River. If the concentration were high at this point, it is expected that many of the bird species identified in Table 4 would be negatively impacted owing to the consumption of contaminated food items, which includes aquatic plants, invertebrates and small fish.

Wetlands such as Cork Harbour SPA and Great Island Channel SAC provide many critical functions in global ecology, including providing habitat and food for diverse species. Heavy metals are stable and persistent in the environment because they cannot be degraded. They pose risks not only to humans but also to plants and animals because of their extremely toxic effects. Heavy metals tend to accumulate in the living organisms since they are not readily biodegradable and cause various diseases and disorders. Animals eating or drinking cadmium sometimes get high blood pressure, liver disease and nerve or brain damage. The release in aquatic environment and accumulation of copper could result in toxicity to aquatic life in Cork Harbour SPA and Great Island Channel SAC. It can be extremely toxic as it can damage nerves, liver, kidney and bones. It can also block functional groups of vital enzymes. Lead can affect the growth and respiration of organisms in marine ecosystems. Lead causes damage to central nervous system (Jenela Priscy *et al.*, 2017).

Cork Harbour SPA is widely recognised as an internationally important wetland site. It supports over 20,000 wintering waterfowl. Salt marshes are scattered throughout Cork Harbour SPA and provide high tide roosts for birds (NPWS, 2015). If contaminated material entered Cork Harbour SPA it could contaminate many organisms within the mudflats, including food items for protected waterfowl. If the protected birds of Cork Harbour SPA were to ingest contaminated food items, there is a chance they may suffer from some of the symptoms mentioned above, which could potentially reduce bird numbers in Cork Harbour SPA.

The effects on Great Island Channel SAC are likely to be less obvious. Heavy metals, as mentioned above, are known to accumulate in the tissues of plants, which up to a point would exhibit no signs of ill-health. If a sufficient concentration is accrued, a plant can be expected to exhibit altered metabolism, reduced growth and potentially death. Atlantic salt meadows (one of the habitats protected by the SAC) exists as a function of its plant assemblages. Large-scale floral deaths could theoretically alter the landscape such that this habitat ceases to exist. This is considered extremely unlikely, even in severe contamination events. Mudflats and sandflats are not as closely-tied to macroflora as Atlantic salt meadows – contamination events are unlikely to be as obviously detrimental to the persistence of this habitat. However, as mentioned, the fauna that inhabit and utilise this habitat will be negatively impacted in the event of significant contamination.

4.3 Mitigation Measures

As mentioned in the screening report, mitigation measures to prevent contaminated surface water leaving the site could not be accounted for at the screening stage. However, they will be addressed in this section.

4.3.1 Storm Water Containment

Storm water run-off that arises from the metal storage area of the site will be collected by a foul water gully and directed to the municipal foul sewer via a Class 1 Oil Interceptor. It will no longer be collected by the aforementioned storm water gully, which is now decommissioned. This will prevent the risk of any contaminated storm water entering the nearby stream via the storm water drains located around the site. Figure 7 overleaf shows the location of the foul water gully which will collect storm water run-off from the metal storage area.

Taking into account the the above-mentioned mitigation, it is considered that there will be no risk of contamination to the stream located west of the site which flows into Cork Harbour SPA and Great Island Channel SAC. As such, it is considered that with this protective measure in place, the integrity of the qualifying features and conservation objectives of Cork Harbour SPA and Great Island Channel SAC will not be negatively impacted.

Figure 7. Location of metal storage area, foul water gully, metal storage area (Source: Brian O'Kennedy & Associates Ltd)

4.4 Conclusion Statement

The project discussed in this report involves a proposal from Forge Hill Recycling Ltd to increase the waste acceptance rate from 82,000 tonnes to 100,000 tonnes. This will require planning permission and a revision of the EPA licence.

To accommodate this, an extension (1,468m^2) comprising a new additional intake and storage area will be constructed at the north-eastern elevation of the waste processing building. A second, smaller extension (140m^2) to the south-eastern elevation will be built to accommodate possible future reconfigurations of the waste processing equipment.

The construction of the large extension requires the demolition of the power wash hut; the relocation of the eastern boundary fence of the operational area to eastern edge of the landowners holding; the removal of a treeline that is parallel to the fence and paving of the area of disturbed ground (ca 450m^2) between the fence and the property boundary.

There is a stream located approximately 200 metres west of the proposed site. This stream flows into Cork Harbour SPA ~3.5 km downstream and Great Island Channel SAC ~10.5 km downstream via the Tramore River.

A metal storage area in the yard was deemed to pose a risk to the quality of storm water discharging from the site into the aforementioned stream. The integrity of the two above-mentioned downstream European Sites was thus deemed to be at risk.

As a mitigation measure, the storm water gully located near the metal storage area has been decommissioned and storm water from this area now discharges to a municipal foul sewer via a Class 1 Oil Interceptor. This measure is considered adequate to avoid any risks to Cork Harbour SPA and Great Island Channel SAC entirely.

The proposed activities, incorporating the above-mentioned mitigation, are deemed to pose **no likely significant risks** to the integrity of any Natura 2000 sites.

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APPENDIX I

SITE SYNOPSES

SITE NAME: Cork Harbour SPA

SITE CODE: [004030]

SITE NAME: Great Island Channel SAC

SITE CODE: [001058]

SITE SYNOPSIS

SITE NAME: CORK HARBOUR SPA

SITE CODE: 004030

Cork Harbour is a large, sheltered bay system, with several river estuaries - principally those of the Rivers Lee, Douglas, Owenboy and Owennacurra. The SPA site comprises most of the main intertidal areas of Cork Harbour, including all of the North Channel, the Douglas River Estuary, inner Lough Mahon, Monkstown Creek, Lough Beg, the Owenboy River Estuary, Whitegate Bay, Ringabella Creek and the Rostellan and Poulnabibe inlets.

Owing to the sheltered conditions, the intertidal flats are often muddy in character. These muds support a range of macro-invertebrates, notably *Macoma balthica*, *Scrobicularia plana*, *Hydrobia ulvae*, *Nepthys hombergi*, *Nereis diversicolor* and *Corophium volutator*. Green algae species occur on the flats, especially *Ulva* spp. Cordgrass (*Spartina* spp.) has colonised the intertidal flats in places, especially where good shelter exists, such as at Rossleague and Belvelly in the North Channel. Salt marshes are scattered through the site and these provide high tide roosts for the birds. Some shallow bay water is included in the site. Rostellan Lake is a small brackish lake that is used by swans throughout the winter. The site also includes some marginal wet grassland areas used by feeding and roosting birds.

The site is a Special Protection Area (SPA) under the E.U. Birds Directive, of special conservation interest for the following species: Little Grebe, Great Crested Grebe, Cormorant, Grey Heron, Shelduck, Wigeon, Teal, Mallard, Pintail, Shoveler, Red-breasted Merganser, Oystercatcher, Golden Plover, Grey Plover, Lapwing, Dunlin, Black-tailed Godwit, Bar-tailed Godwit, Curlew, Redshank, Greenshank, Black-headed Gull, Common Gull, Lesser Black-backed Gull and Common Tern. The site 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.

Cork Harbour is an internationally important wetland site, regularly supporting in excess of 20,000 wintering waterfowl. Of particular note is that the site supports internationally important populations of Black-tailed Godwit (1,896) and Redshank (2,149) - all figures given are five year mean peaks for the period 1995/96 to 1999/2000. Nationally important populations of the following 19 species occur: Little Grebe (57), Great Crested Grebe (253), Cormorant (521), Grey Heron (80), Shelduck (2,009), Wigeon (1,791), Teal (1,065), Mallard (513), Pintail (57), Shoveler (103), Red-breasted Merganser (121), Oystercatcher (1,809), Golden Plover (3,342), Grey Plover (95), Lapwing (7,569), Dunlin (9,621), Bar-tailed Godwit (233), Curlew (2,237) and Greenshank (46). The Shelduck population is the largest in the country (over 10% of national total). Other species using the site include Mute Swan (38), Whooper Swan (5), Pochard (72), Gadwall

(6), Tufted Duck (64), Goldeneye (21), Coot (53), Ringed Plover (73), Knot (26) and Turnstone (113). Cork Harbour is an important site for gulls in winter and autumn, especially Black-headed Gull (3,640), Common Gull (1,562) and Lesser Black-backed Gull (783), all of which occur in numbers of national importance. Little Egret and Mediterranean Gull, two species which have recently colonised Ireland, also occur at this site.

A range of passage waders occurs regularly in autumn, including such species as Ruff (5-10), Spotted Redshank (1-5) and Green Sandpiper (1-5). Numbers vary between years and usually a few of each of these species over-winter.

Cork Harbour has a nationally important breeding colony of Common Tern (102 pairs in 1995). The birds have nested in Cork Harbour since about 1970, and since 1983 on various artificial structures, notably derelict steel barges and the roof of a Martello Tower. The birds are monitored annually and the chicks are ringed.

Cork Harbour is of major ornithological significance, being of international importance both for the total numbers of wintering birds (i.e. > 20,000) and also for its populations of Black-tailed Godwit and Redshank. In addition, it supports nationally important wintering populations of 22 species, as well as a nationally important breeding colony of Common Tern. Several of the species which occur regularly are listed on Annex I of the E.U. Birds Directive, i.e. Whooper Swan, Little Egret, Golden Plover, Bar-tailed Godwit, Ruff, Mediterranean Gull and Common Tern. The site provides both feeding and roosting sites for the various bird species that use it. Cork Harbour is also a Ramsar Convention site and part of Cork Harbour SPA is a Wildfowl Sanctuary.

21.1.2015

SITE SYNOPSIS

Site Name: Great Island Channel SAC

Site Code: 001058

The Great Island Channel stretches from Little Island to Midleton, with its southern boundary being formed by Great Island. It is an integral part of Cork Harbour which contains several other sites of conservation interest. Geologically, Cork Harbour consists of two large areas of open water in a limestone basin, separated from each other and the open sea by ridges of Old Red Sandstone. Within this system, Great Island Channel forms the eastern stretch of the river basin and, compared to the rest of Cork Harbour, is relatively undisturbed. Within the site is the estuary of the Owennacurra and Dungourney Rivers. These rivers, which flow through Midleton, provide the main source of freshwater to the North Channel.

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

[1140] Tidal Mudflats and Sandflats
[1330] Atlantic Salt Meadows

The main habitats of conservation interest in Great Island Channel SAC are the sheltered tidal sand and mudflats and the Atlantic salt meadows. Owing to the sheltered conditions, the intertidal flats are composed mainly of soft muds. These muds support a range of macro-invertebrates, notably *Macoma balthica*, *Scrobicularia plana*, *Hydrobia ulvae*, *Nepthys hombergi*, *Nereis diversicolor* and *Corophium volutator*. Green algal species occur on the flats, especially *Ulva lactua* and *Enteromorpha* spp. Cordgrass (*Spartina* spp.) has colonised the intertidal flats in places, especially at Rossleague and Belvelly.

The saltmarshes are scattered through the site and are all of the estuarine type on mud substrate. Species present include Sea Purslane (*Halimione portulacoides*), Sea Aster (*Aster tripolium*), Thrift (*Armeria maritima*), Common Saltmarsh-grass (*Puccinellia maritima*), Sea Plantain (*Plantago maritima*), Greater Sea-spurrey (*Spergularia media*), Lax-flowered Sea-lavender (*Limonium humile*), Sea Arrowgrass (*Triglochin maritimum*), Sea Mayweed (*Matricaria maritima*) and Red Fescue (*Festuca rubra*).

The site is extremely important for wintering waterfowl and is considered to contain three of the top five areas within Cork Harbour, namely North Channel, Harper's Island and Belvelly-Marino Point. Shelduck is the most frequent duck species with 800-1,000 birds centred on the Fota/Marino Point area. There are also large flocks of Teal and Wigeon, especially at the eastern end. Waders occur in the greatest density

north of Rosslare, with Dunlin, Godwit, Curlew and Golden Plover the commonest species. A population of about 80 Grey Plover is a notable feature of the area. All the mudflats support feeding birds; the main roost sites are at Weir Island and Brown Island, and to the north of Fota at Killacloyne and Harper's Island. Ahanesk supports a roost also but is subject to disturbance. The numbers of Grey Plover and Shelduck, as given above, are of national importance.

The site is an integral part of Cork Harbour which is a wetland of international importance for the birds it supports. Overall, Cork Harbour regularly holds over 20,000 waterfowl and contains internationally important numbers of Black-tailed Godwit (1,181) and Redshank (1,896), along with nationally important numbers of nineteen other species. Furthermore, it contains large Dunlin (12,019) and Lapwing (12,528) flocks. All counts are average peaks, 1994/95 – 1996/97. Much of the site falls within Cork Harbour Special Protection Area, an important bird area designated under the E.U. Birds Directive.

While the main land use within the site is aquaculture (oyster farming), the greatest threats to its conservation significance come from road works, infilling, sewage outflows and possible marina developments.

The site is of major importance for the two habitats listed on Annex I of the E.U. Habitats Directive, as well as for its important numbers of wintering waders and wildfowl. It also supports a good invertebrate fauna.