Unit 15
Melbourne Business Park
Model Farm Road
Cork

T: 021 434 5366
E: info@ocallaghanmoran.com
www.ocallaghanmoran.com

ENVIRONMENTAL IMPACT ASSESSMENT REPORT

FORGE HILL RECYCLING LTD

FORGE HILL

CORK

Prepared For: -

Forge Hill Recycling Limited,
Forge Hill,
Ballycureen,
County Cork.

Prepared By: -

O' Callaghan Moran & Associates,
Unit 15,
Melbourne Business Park,
Model Farm Road,
Cork.
T12 WR89

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Project	Environmental Impact Assessment Report			
Client	Forge Hill Recycling Ltd			
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	10/04/2018	Draft Initial Client Review	C McGrath MSc R. Povey BSc; N Sandes BSc	Jim O'Callaghan MSc, CEnv, MICWM
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NON-TECHNICAL SUMMARY

1.0 Introduction

1.1 The Applicant

Forge Hill Recycling Ltd (FRH) is one of the largest waste management companies in Munster and operates its waste management facility at Forge Hill under planning permission granted by Cork County Council and a Waste Licence granted by the Environmental Protection Agency (EPA).

1.2 Facility Overview

The site was initially developed in 1969 and has been used for waste management activities since 1987. In 2003 the EPA granted a Waste Licence to the company that then operated the site, which authorised the acceptance, processing and transfer of 82,000 tonnes/year of household, commercial, industrial and construction & demolition waste.

A redevelopment of the site in 2005 involved the demolition of the original waste handling building, the construction of a new waste processing building, weighbridge and offices and the installation of new foul and surface water drainage systems. In 2008 the waste processing building was extended and a second weigh bridge was installed.

In 2009 the waste business was acquired by Greenstar Environmental Services Limited (Greenstar). Greenstar suspended waste operations in September 2011, following which all wastes were removed and the site closed.

In 2015 the site was acquired by the current landowner and leased to FHR. Cork County Council granted FHR a Waste Permit to operate the site as a recycling and transfer facility. The annual tonnage was limited to 49,999 tonnes. In 2016 the waste processing building was extended to allow the internal storage of baled recyclables. In August 2017 the EPA granted FHR a Waste Licence, which authorised the acceptance and sorting of 82,000 tonnes of waste.

Mixed dry recyclables (paper, plastics, cardboard, metal cans) are separated before being sent them to overseas recycling facilities. Non-recyclable residues, which are the result of inadvertent contamination by the waste producers, are sent to other waste processing facilities where they are used to produce solid recovered fuel, which is used as an alternative for fossil fuels (oil, coal and natural gas).

1.3 Proposed Development

It is proposed to increase the amount of waste accepted annually from 82,000 to 100,000 tonnes. To accommodate this a new waste reception building (1,460m^2) will be constructed at the north-eastern side of the existing waste processing building. A second smaller

extension (140m^2) to the south-east of the building will accommodate possible future reconfigurations of the waste processing equipment.

All waste handling will be carried out inside the building. It is proposed to store a small amount (maximum 50 tonnes at any one time) of baled metal cans in a designated area under an overhang at the southern elevation of the new waste reception building.

The construction of the new waste intake area requires the relocation of the existing eastern boundary fence of the operational area. A short section of a treeline and undergrowth along the outside of the fence will be removed and an area of disturbed ground to the east of this will be paved.

While waste processing will normally run from 6 am to 12 am, occasionally it may be necessary to operate 24 hours a day. In addition, housekeeping and maintenance works will be carried out between 12 pm and 6 am. Similarly, waste acceptance will normally be between 6 am and 12 pm, but on occasion waste acceptance may happen outside these hours.

The construction works will involve the excavation of soils and general ground disturbance, which will be a source of noise and potentially dust emissions. In the operational stage all waste acceptance and processing will continue to be carried out inside the buildings. Waste delivery and transfer vehicles movements will be scheduled for outside the morning and evening peak traffic hours.

2.0 Planning and Waste Management Policy

2.1 Planning Policy

The Cork County Development Plan 2014-2020 sets out the development strategy (policies and objectives) for the sustainable future growth of the County. In relation to waste management, it is policy to implement the current Waste Management Plan for the Region.

2.2 Waste Management Policy

The foundation policy statement on waste management *"Changing Our Ways"* bases national policy on the EU Waste Management Hierarchy, which in descending order is:

- Prevention,
- Preparing for Reuse,
- Recycling,
- Other Recovery (including energy recovery); and
- Disposal.

The most recent Policy Statement '*A Resource Opportunity Waste Management Policy In Ireland 2012*' is also based on the EU Waste Management Hierarchy and sets out how the higher tiers can reduce Ireland's reliance on finite resources, virtually eliminate reliance on landfill and minimise the impact of waste management on the environment. It is a policy objective that when waste is generated, the maximum value must be extracted from it by ensuring that it is reused, recycled, or recovered.

2.2.1 Waste Management Plan for the Southern Region

The underlying strategic approach of the Plan is to improve the quality of waste along the entire treatment supply chain. In this regard, pre-treatment facilities are typically the first destination for waste and are vital in extracting high-quality outputs for onward treatment.

2.2.3 Compliance with Policy Objectives

The proposed development is consistent with the current planning objectives and national and regional waste policies, as it will increase the pre-treatment capacity to get the maximum value from the waste and will contribute to the achievement and maintenance of national and regional recycling and recovery targets.

2.3 Need for the Development

The proposed development is required to allow FHR to expand to meet the needs of its customers and to continue to contribute to the achievement of national waste recovery and recycling targets.

3. Alternatives Examined

The FHR facility already has planning permission and an EPA licence to operate and is located in an area that is easily accessible to its customers. The only alternative for FHR is to acquire another site and obtain a separate planning permission and EPA licence. This offers no environmental or economic benefits to FHR and is not consistent with regional waste management policy, which recognises the environmental benefits of using existing waste management facilities compared to greenfield developments.

3.1 The Do Nothing Alternative

If the development does not proceed FHR will not be able to expand its business and increase its waste recovery/recycling rates.

4. Site Description

4.1 Site Location

The facility is located on the southern fringe of Cork City and accessed from the Forge Hill Road via a junction on the N27 Kinsale Road.

4.2 Site Layout

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

It is proposed to construct an extension at the eastern side of the existing processing building to accommodate the increase in the waste acceptance rate. A smaller extension will be added to the southern side of the building to allow for future changes to the waste processing equipment. The construction of the larger extension will require the demolition of the power wash storage hut, paving the open area in the east of the site and minor alterations to the drainage system.

4.3 Site Services

The site is serviced by electrical and mains water supplies and has a connection to the foul sewer. Sanitary wastewater from the staff welfare facilities goes to the foul sewer. Rainwater from the building roofs and the parts of the yards that are not vulnerable to contamination is piped to a stream. Rainwater from the other areas of the site goes to the foul sewer.

4.4 Waste Activities

FHR takes in mixed paper, plastics, cardboard, food and drink containers and mechanically sorts them to separate these into the different types and to remove the non-recyclable materials. The recyclable materials are then baled and stored before being sent to overseas recycling facilities. The non-recyclable residues (e.g. contaminated packaging) are sent to other waste management facilities in Ireland for processing to produce solid recovered fuel (SRF).

The site opening hours are 6am to 11.30pm Monday to Friday; 6.30am to 5.30pm Saturday acceptance hours are 06:30 and 23:30, Monday to Friday inclusive, 06:30 to 17:30 Saturdays and 8.30am to 5.30pm on Sundays and Bank Holidays. It may occasionally be necessary to operate outside these hours to accommodate waste acceptance and reducing backlogs

4.5 Oils & Chemical Storage

Diesel is not stored on-site and the mobile plant is refuelled by an oil tanker. Drums of hydraulic and engine oil that are used for servicing the equipment are stored inside the power wash hut. 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. Following the demolition of the power wash hut, the hydraulic and engine oil will be stored inside the processing building.

4.4 Environmental Emissions & Monitoring

Actual and potential emissions associated with the waste activities include rainwater run-off, sanitary wastewater, dust, noise and odours. The EPA licence requires regular monitoring of the surface water, groundwater dust deposition rates and noise emissions.

4.5 Accidents & Emergencies

FHR has adopted a Corrective and Preventive Action Procedure and prepared a Safety Statement that identifies and evaluates the major on-site potential hazards and describes the control measures in place to mitigate the hazards associated with operations.

The EPA licence requires FHR to ensure that documented procedures are in place in relation to the prevention of accidents that have a possible impact on the environment and to address emergencies.

FHR has completed a Fire Risk Assessment that identifies the fire prevention and control measures implemented at the site, which include the provision of fire walls, flame detectors, sprinkler system, fire hydrants and extinguishers and a firewater retention capacity.

FHR has carried out an Environmental Liability Risk Assessment (ELRA) that assesses the environmental effects, including impacts on humans, of incidents and accidents that might occur at the site.

5 Climate

5.1 Receiving Environment

The climate in the area is mild and wet, with the prevailing wind direction from the west.

5.2 Impacts

The additional wastes will result in an increase in energy (diesel and electricity) consumption associated with their transport and processing, with a consequent increase in greenhouse gas emissions.

5.3 Do Nothing

If the development does not proceed there will be no change to the greenhouse gas emissions from the existing operations.

5.4 Prevention & Mitigation Measures

The mitigation measures include the use of energy efficient equipment and carrying out energy audits.

5.5 Assessment of Impacts

All new greenhouse gas emissions contribute to a cumulative negative environmental effect on climate, unless offset by mitigation or compensatory measures.

5.6 Residual Impacts

The proposed development will, in conjunction with current operations, have an on-going, imperceptible, negative impact on climate.

6 Traffic

6.1 Receiving Environment

Forge Hill Road links Pouladuff Road to the N27 Airport Road. The staggered signalised junction between Forge Hill Road and the N27 (known locally as the Bull McCabe's junction) is the main access route to the site. At the junction between Forge Hill and the Pouladuff Road to the north of FHR there are significant delays during the evening peak traffic periods.

Traffic counts at Bull McCabe's junction carried out over three days in January 2018 established that the highest flows occurred on Thursday 18th January and that there were three peak periods 7.30am to 9.30am, 1pm to 2pm and 4.30pm to 6pm. The peak period for traffic generation from the site coincides with the morning and mid-day peak periods and the morning peak is the critical time for Bull McCabe's junction.

6.2 Impacts

The proposed development does not require the recruitment of additional staff and there will be no change to the number of staff car movements. There will be one additional daily truck movement.

6.3 Do Nothing Scenario

If the development does not proceed there will be no change in the volumes of traffic associated with the facility.

6.4 Prevention & Mitigation Measures

The visibility splays at the entrances will be maintained and kept free of all obstacles that might cause a visual obstruction. Waste delivery and consignment times will be scheduled to avoid periods of peak traffic. All drivers will be instructed to access the site via Bull McCabe's junction. Additional street lighting, tactile paving and pedestrian crossings will be provided at the site entrances to enhance pedestrian safety on Forge Hill Road.

6.5 Assessment of Impacts

The existing local and regional road networks have the capacity to accommodate the slight increase in traffic associated with the proposed development.

6.6 Residual Impacts

The proposed development, in conjunction with current operations, will have an on-going, slight, negative, impact on the road network, but due to the ability to schedule waste deliveries and consignments outside peak traffic period could have an on-going slight, positive impact on junction capacity.

7. Soils and Geology

7.1 Receiving Environment

The site is underlain by a layer of made ground, which is on top of approximately 3m of sandstone derived till. The underlying bedrock comprises sandstones, mudstones and siltstone.

7.2 Impacts

The development involves the excavation of the made ground and subsoils for the foundations and formation level for the floors of the extensions and placing a concrete slab over the unpaved area in the east of the site.

7.3 Do Nothing Scenario

If the proposed development does not occur FHR will continue to operate as a waste management facility, with no change to the impacts on soil and geology.

7.4 Prevention & Mitigation Measures

The current prevention and mitigation measures include inspection and repair as required of the paved areas; the routine integrity surveys of the surface water and foul water drainage systems; the adoption of an emergency response procedure and staff training on appropriate spill response actions.

7.5 Assessment of Impacts

At present there are no direct or indirect emissions to ground and the proposed change will not give rise to any new discharges. The construction of the extensions will involve the excavation and removal of subsoils. Following the construction the entire site will effectively be either paved, or occupied by buildings that prevent accidental seepages to the soils.

7.6 Residual Impacts

The proposed development, in conjunction with current operations, will have a permanent slight, negative impact on the soils, but no impact on the bedrock.

8. Water

8.1 Receiving Environment

The site is in the catchment of the Tramore River. The Tramore River (Coastal) is designated as a Transitional Water Body (surface water in the vicinity of a river mouth that is partly saline, but which is substantially influenced by freshwater flows) under the Water Framework Directive (Directive 2000/60/EC).

The subsoils at the site are not significantly water bearing. The bedrock aquifer is classified as a locally important aquifer, which is only moderately productive in local zones

8.2 Impacts

Rainwater run-off from the building roofs and sections of the yard where the risk of contamination is low discharges to a tributary stream of the Tramore River. The flow rate is regulated by an underground balance tank located in the north-west corner of the site. Run-off from yard areas where there is the potential for contamination discharges to the foul sewer.

The proposed development requires minor alterations to the existing foul and surface water drainage layout, which will result in an increase in the volumes of roof water going to the stream and a reduction in the volume of yard run-off going to sewer, but there will be on change to the quality of either discharge. There are no current direct or indirect emissions to groundwater and the proposed development will not result in any new emissions.

There is the potential for oil leaks from the mobile plant and firewater run-off in the event of a fire. The potential pathways to the stream is the surface water drainage system. The pathways to groundwater are infiltration through damaged paving and leaks from the storm and foul water drains.

8.3 Do Nothing Scenario

If the development does not proceed FHR will continue to operate as a waste management facility, with no change to the potential impacts on water.

8.4 Prevention & Mitigation Measures

The current mitigation measures include the provision of an oil interceptor on the surface water drains that discharge to the stream; the provision of a flow balance tank to regulate the flow to the stream; the installation of shut off valves on the surface water and foul water drains; impermeable paving across the operational areas; routine integrity surveys of the surface water and foul water drains; the provision of firewater retention capacity and the adoption of an emergency response procedure.

8.5 Assessment of Impacts

The proposed development will not result in any change to the quality of the surface water discharge. Although the total volume of rainwater run-off to the stream will increase there will be no change to the flow rate as this will be controlled by the balance tank.

The development will not give rise to any new emission to ground and ground water and will have no discernible impact on groundwater quality. Paving the open area in the east of the site will reduce groundwater recharge within the site boundary.

8.6 Residual Impacts

The proposed development, in conjunction with the current operations, will have no impact on surface water and groundwater quality and will have an imperceptible, permanent, negative impact on the quantitative status of the bedrock aquifer.

9 Biodiversity

9.1 Receiving Environment

Within the site the habitat classification for the buildings and yards is BL3 -buildings and artificial surfaces, which includes buildings roads, car parks, pavements, runways, yards, and some tracks, paths, driveways and sports grounds. These habitats are typically not species diverse.

The area between the boundary fence at the eastern side of the operational area and the landholding boundary (ca 450m^2) includes a fragmented linear treeline (ca 70m), along the outside of the fence, with disturbed ground further east. The treeline comprises predominantly common ash with ivy and bramble undergrowth. The habitat classification for the treeline is WL2 Treeline and the disturbed ground is ED3.

Outside the site the land use is a mix of commercial and industrial operations and are classified as BL3 Buildings and artificial surfaces. There are hedgerows (WL1) and planting along both sides of Forge Hill Road, immature trees in plantings outside the northern and southern side boundaries and a small landscaped grassed area (GA2) with a short line of laurel outside the western boundary and at the southern boundary.

To the east of the landholding boundary, between it and the N27, is a an earthen mound that is naturally recolonising (BL2) and a field that had formerly been used for agricultural purposes, but is now deteriorating to scrub (WS1).

A small area of Japanese knotweed was identified in the south-east corner of the site. FHR commissioned a specialist contractor to eradicate the plants and three treatments have been carried out, with further treatments planned in 2018 to ensure complete eradication.

Given the facility layout and operations the likelihood of the presence of protected species within the site is very low; however there is the potential for the treeline in the east of the site to serve as a roost for bats.

The site is not in either a Special Area of Conservation (SAC), or a Special Protection Area (SPA). The closest sites are Cork Harbour SPA (Site Code 004030) and Great Island Channel SAC (Site Code 001058) which are 3.5km to the east. Rainwater run-off from the facility discharges to a tributary of the Tramore River, which flows into Lough Mahon, part of Cork Harbour

9.2 Impacts

The proposed development will result in the loss of the treeline in the east of the site and the paving of the area of disturbed ground. It will not result in any loss of habitat outside the site

boundary, nor will it result in any change to the surface water discharge to the tributary of the Tramore River.

9.3 Do Nothing Scenario

If the proposed development does not proceed the current activities will continue, with no change to the risk presented to biodiversity.

9.5 Prevention & Mitigation Measures

The mitigation measures in place to protect surface water and groundwater apply equally to the protection of biodiversity. Before the fence on the eastern boundary of the operational area is moved the specialist contractor appointed to eradicate the Japanese knotweed will advise the fencing contractor on the actions to ensure that any soils excavated in the treated area remain in that area so that the accidental movement of the knotweed is avoided.

Prior to the removal of the treeline in the east of the site, a bat survey will be conducted by an ecologist. Should bats be identified the removal of the trees will be carried out in accordance with the ecologist's recommendations.

9.6 Assessment of Impacts

The proposed development will not result in any changes to the current emissions to surface water and will have no discernible impact on surface water and ground water quality. It will result in the removal of the treeline in the east of the site, which is potential roosting site for bats. It will have no impacts on habitats outside the boundary and will have no significant effect on any Natura 2000 Site.

9.7 Residual Impacts

The proposed development will have an imperceptible, permanent, negative impact on the treeline habitat within the site, but will not give rise to any impacts on habitats outside the boundary.

10. Air

10.1 Receiving Environment

The facility is on the eastern side of Forge Hill Road and the surrounding land use is primarily commercial, with industrial estates/business parks to the north and south and other commercial developments on the western side to the road. The closest residences are approximately 80m to the north-west and 120m to the east. The EPA ambient air quality databases and monitoring carried out by FHR indicate the air quality in the vicinity of the site is good.

10.2 Impacts

The impacts on air quality associated with the operation of waste management sites include, depending on the nature of waste accepted and the processes carried out, odours, particulates (dust) and exhaust gases from vehicles and mobile plant.

10.3 Do Nothing Scenario

If the proposed development does not proceed the current operation will continue, with no change to the potential impacts on air quality.

10.4 Prevention & Mitigation Measures

The Construction Environmental Management Plan, which will be prepared before construction starts, will include all of the mitigation measures set out in this EIAR, including dust prevention and control and any additional measures required by the conditions attached to planning permission.

FHR implements the control measures specified in the EPA licence that are designed to ensure waste activities do not give rise to adverse impacts on air quality or nuisance and impairment of amenity outside the site boundary. All waste reception, processing and storage, with the exception of a small amount of baled metal wastes continue to be carried out inside the waste processing building.

The yards are regularly cleaned using the on-site road sweeper. The vehicles that deliver the wastes are typically fitted with Selective Catalytic Reduction to reduce the nitrous oxide levels in the exhaust gases. It is FHR policy not to allow engine idling.

10.6 Assessment of Impacts

FHR only accepts dry recyclables predominantly from source segregated collections; however a level of contamination with organic/putrescible matter is unavoidable and this gives rise to the potential for odours. A detailed assessment of the likelihood of the site operations being a source of odour nuisance completed has established that the risk is negligible.

Most of the dust generated in the construction stage is deposited close to the source and any impacts are typically within 100m of the construction area. Any impacts will be short term.

There will be additional vehicle exhaust emissions associated with the increased traffic; however traffic associated with FHR's activities contributes less than 1% to the overall traffic in the area and the additional movements, 1 truck movement during peak period, will have no discernible impact of local air quality

10.7 Residual Impacts

The proposed development, in conjunction with the current operations, will have an on-going imperceptible, negative impact on air quality.

11 Noise

11.1 Receiving Environment

The surrounding land use is primarily commercial, with industrial estates/business parks to the north and south and other commercial developments on the western side to the road. The closest residential properties are approximately 80m to the north-west and 120m to the east.

11.2 Impacts

The sources of noise emissions are staff vehicles, waste transport vehicles and the waste processing and handling equipment. Emissions only occur during the waste acceptance and operational periods.

11.3 Do Nothing Scenario

If the proposed development does not proceed there will no change to the existing noise emissions.

11.4 Prevention & Mitigation Measures

All construction will be carried out in accordance with the measures specified in the Construction Environmental Management Plan. All waste reception, processing and storage will, with the exception of the storage of a small amount of baled metal wastes outside the new large extension, will continue to be carried out inside buildings. There is acoustic cladding on the southern and eastern walls of Building 2. The building doors are typically only opened to allow vehicles to enter and exit the buildings.

11.5 Assessment of Impacts

The noise monitoring carried out in compliance with the EPA licence requirements has confirmed that noise emission from the current operations are not a source of off-site nuisance. The noise emissions associated with the proposed development will be consistent with those from the current activities and will not give rise to nuisance or impairment of amenities at off-noise sensitive locations.

11.6 Residual Impacts

The proposed development will, in conjunction with the current operations, have an on-going, imperceptible, neutral impact.

12 Landscape & Visual Impact

12.1 Receiving Environment

The facility is located within an established and developed industrial zone, is not in an area designated as highly sensitive and is not overlooked by any designated views or prospect

areas. On a site specific level, the buildings are consistent with other commercial and industrial buildings in the area.

12.2 Impacts

The development involves the construction of extensions to an existing warehouse type building. The small extension to the southern elevation of the existing building and the loading dock on north-western side of the main extension will be visible from the southern and northern site entrances respectively. The baled metal waste storage area will not be visible from public viewing points.

12.3 Do Nothing Scenario

If the development does not proceed the FHR facility will continue to operate in its current configuration, with no change to the external appearance of the buildings.

12.4 Prevention & Mitigation Measures

Given the location and scale of the development prevention and mitigation measures, including a landscaping plan, are not required.

12.5 Assessment of Impacts

The FHR facility is in an area already extensively developed for commercial and industrial use and is not in a location of scenic value or outstanding natural beauty. The design of the buildings, while functional, is consistent with the existing buildings and surrounding developments.

The north-western docking bay of the main extension and the western elevation of the smaller extension will be visible from the site entrances. The proposed development is not visually intrusive and does not negatively affect the local landscape character.

12.6 Residual Impacts

The proposed development will have long term, slight, neutral impact on the existing landscape character and visual amenity.

13 Population & Human Health

13.1 Receiving Environment

The surrounding land use is primarily commercial, with the lands to the north and south comprising industrial estates/business parks and other commercial developments on the western side to the road. The closest residential properties are approximately 80m to the north-west and 120m to the east, with a large residential estate approximately 270m to the west.

In the 2106 Census the population of Cork City and Suburbs was 208,689. The daytime working population of the city and suburbs exceeded 100,000 in April 2016. Of those, 60,706 resided and worked in the area, with 41,433 travelling into the city and suburbs. The majority of those who commuted into the city and suburbs came from Cork county (91%), followed by Waterford City and County (2%) and Kerry (2%). .

13.2 Impacts

Waste management facilities, depending on the types of waste accepted potential sources of odours, dust, noise, vermin and pests. While odours do not present a direct risk to health, they can be a significant nuisance and cause of discomfort that can indirectly affect human health. Traffic associated with a waste activity can, depending on the size, location and capacity of the local road network, be a cause of congestion that affects local residents.

An incident at the site, for example a fire, presents a risk to site staff and there is the potential, depending on the weather conditions, for smoke to affect occupants of the nearby commercial and residential properties.

13.3 Do Nothing Scenario

If the proposed development does not proceed the current operations will continue and there will be no change to the potential for impacts on population and human health.

13.4 Prevention & Mitigation Measures

FHR already implements the control measures specified in the EPA Licence that are designed to ensure waste activities are not a cause of odour, noise, dust and pest nuisance. All waste reception and processing is and will continue to be carried out inside the building. The roller shutter doors are typically only opened to allow vehicles to enter and exit the buildings. Although the wastes do not contain significant amounts of materials that are attractive to bird, vermin and insects FHR has contracted a specialist pest and vermin control contractor who visits the site regularly.

13.5 Assessment of Impact

While the annual waste intake will increase there will be no change to either the types of waste accepted, or the method of processing. Odours have never been a significant source of impairment of the amenity outside the facility and the EPA has never identified odours form the site as being matter of concern.

Noise emissions from the operations have also never been a source of impairment of the amenity outside the facility. The proposed development will include for occasional waste acceptance and operation 24/7. The night time noise surveys have established that noise from site operations are not audible at the nearest noise sensitive locations.

The traffic assessment has confirmed that the local road network and key junction have the capacity to accommodate the movement of the additional 18,000 tonnes of waste without causing congestion.

13.6 Residual Impacts

The proposed development, will in conjunction with current operations, have an on-going imperceptible, negative impact on human beings associated with noise emissions and traffic movements.

14 Archaeology, Architecture and Cultural Heritage

14.1 Receiving Environment

There is no record of any archaeological feature, protected structure, or cultural heritage feature within the site boundary and it is not in a designated conservation area.

14.2 Impacts

The development requires excavation in areas that are already covered in concrete and underlain by made ground. The new paving in the east of the site will be in the carriageway of the old Kinsale Road.

14.3 Do Nothing Scenario

If the development does not proceed the facility will continue to operate in its current configuration and the potential for impacts on the archaeology, architecture and cultural heritage will remain unchanged.

14.4 Prevention & Mitigation Measures

Prevention and mitigation measures are not required.

14.5 Assessment of Impact

The development will have no impact on any known archaeological, architectural or cultural feature and is highly unlikely to have any impact on any unknown feature.

14.6 Residual Impacts

The development will have no impact on any known archaeological, architectural or cultural heritage features.

15 Material Assets & Resource Consumption

15.1 Receiving Environment

Land use in the immediate vicinity is predominantly commercial and does not have any significant amenity value for members of the general public. The site is in a designated 'Existing Built Up Area' for which it is a planning policy objective to promote uses that include

waste materials treatment, recovery and transport operations. Site activities are a very minor contributor to traffic movements in the area and involve diesel and electricity and water consumption.

15.2 Impacts

There will be a slight increase in traffic movements and energy consumption. There will be no change to the nature of the emissions. Increasing the recycling/recovery rate will contribute to the achievement and maintenance of regional and national waste management targets. The development will also contribute to maintaining employment levels at the facility.

15.3 Do Nothing Scenario

If the proposed development does not proceed, there will be no increases in traffic movements and natural resource consumption.

15.4 Prevention & Mitigation Measures

FHR implements the nuisance control measures specified in the EPA licence to prevent impacts on local amenities and also applies resource consumption control measures to minimise usage.

15.5 Impact Assessment

Current operations are not a source of adverse environmental nuisance or impairment of amenities outside the site boundary and the local road network has the capacity to deal with the increase in traffic. There will be an increase in resource consumption (diesel, electricity, water) due to the additional traffic and waste processing. The proposed development will have a slight socio-economic benefit associated with assisting in maintaining local employment levels.

15.6 Residual Impact

The proposed development will not have any adverse impact on amenity values and socio-economic activities in the locality. It will have a slight negative impact in relation to the consumption of fossil fuels, but it will have a slight positive local economic benefit.

16 Interaction of the Foregoing

There are actual and potential direct, indirect and cumulative effects of the changes due to interaction between relevant receptors, which are Population & Health, Air, Noise and Traffic.

Population & Health / Air / Noise

The proposed development has the potential to impact on human beings from noise, dust, and vehicle exhaust emissions. The proposed building design and method of operation has taken account of these emissions and effective mitigation measures have been identified.

Human Beings / Traffic

The proposed development will result in an increase in traffic; however the local road network and junctions have the capacity to accommodate the additional traffic movements and they will not give rise to congestion.

Climate / Traffic

The development will result in an increase in greenhouse gas emissions associated with the extra traffic movements and waste processing.

Cumulative Effects

The assessment of the impacts of the proposed development took into consideration the impacts of the existing facility. The noise and ambient air quality surveys were conducted during typical operational hours and the predictive assessments include the impacts of both the existing emissions and those associated with the proposed development.

PREAMBLE

This Environmental Impact Assessment Report (EIAR) examines the potential impacts and significant effects on the environment of the proposal to increase the amount of waste accepted annually at the Forge Hill Recycling Ltd waste management facility at Forge Hill, Cork.

The facility operates under a planning permission granted by Cork County Council and a Waste Licence issued by the Environmental Protection Agency. The proposal to increase the amount of waste that can be accepted annually requires planning permission and a revision of the EPA licence. This EIAR will form part of the planning application to Cork County Council and the licence review application to the EPA.

The information contained in the EIAR complies with the requirements of Article 5 (1)(a) to (e), Article 3(1)(a) to (e), and Annex IV of Directive 2014/52/EU on the effects of certain public and private projects on the environment (EIA Directive). The assessment of the impacts on climate includes the implications for climate change. The assessment of impacts on biodiversity includes an evaluation of the significance of effects on Natura 2000 Sites. The likely effects of major accidents and/or natural disasters have also been assessed.

The EIAR follows a grouped format structure where each prescribed topic is dealt with in a separate chapter The chapters present information on the elements of the proposed development of relevance to the subject topic; describe the existing (receiving) environment; identify the direct and indirect significant effects associated with the current operations and the proposed development; propose measures to avoid, prevent, reduce or, if possible, offset any identified significant adverse effects on the environment, and assess the impacts and the residual impacts.

Impacts are assessed in terms of the likely natural or physical changes to the environment resulting either directly, or indirectly from the proposed development, taking into consideration a 'do nothing' scenario, cumulative effects and emergencies. The assessment of effects on human health is confined to the impacts of the operations on occupants of commercial/residential premises outside the site boundary and members of the public using Forge Hill Road and does not assess the risks to safety of FHR's staff, as this is regulated by the Health & Safety Authority.

The significance of an effect is determined by a combination of objective (scientific) and subjective (social) concerns and the potential for the development to either cause significant effect on an aspect of the environment that has been formally or systematically designated as being of importance, or to significantly alter the existing character of some aspects of the environment. The following objective criteria were used to determine the significance of an effect:

- The magnitude and spatial extent of the impact;

- The nature of the impact;
- The intensity and complexity of the impact;
- The probability of the impact;
- The expected onset, duration, frequency and reversibility of the impact;
- The accumulation of the impact, with the impact of other existing and or/approved projects, and
- The possibility of effectively reducing the impact.

Impacts are, where possible, described in terms of quality, significance and duration.

Quality: Positive, Neutral, Negative.

Significance: Imperceptible; Slight; Moderate; Significant; Profound.

Duration: Temporary <1 year; Short-term 1-7 years; Medium Term 7-15 years; Long Term 15-60 year; Permanent >60 years. Where impacts are associated with daily operations the duration is described as on-going

The evaluation of the significance of an impact was based on current knowledge and method of assessment.

Public Consultation

FHR notified the Council and its neighbours of its intention to apply for planning permission and review of the EPA licence.

Project Team

O'Callaghan Moran & Associates (OCM) were the prime consultants and unless otherwise referenced were responsible for the assessment of impacts. OCM has twenty years' experience in the completion of environmental impact assessments for large scale waste management and industrial developments and has particular expertise in geology, hydrogeology, hydrology, socio-economics and environmental risk assessment.

O'Callaghan Moran & Associates – Prime Consultants

Address: Unit 15,
Melbourne Business Park,
Model Farm Road,
Cork.
Telephone: 021 - 4345366
e-mail: info@ocallaghanmoran.com

Brian O' Kennedy & Associates Ltd Building and Drainage Design

Address Shannon House
Church Road
Douglas
Cork
Telephone 021 4899854
Email brian@bok.ie

MHL Consulting Engineers Traffic & Transport Assessment

Address Carraig Mór House,
10 High Street,
Douglas Road,
Cork.
Telephone 021-4840214
E-Mail info@mhl.ie

SLR Consultants Odour Impact Assessment.

Address 7 Dundrum Business Park
Dundrum Rd
Dublin 14

Fehily Timoney & Company Fire Risk Assessment

Address Core House,
Pouladuff Road,
Ballypheane,
Cork
Telephone (021) 496 4133
E-Mail

Damian Brosnan Acoustics-Noise Assessment

Telephone: 086 813 1195

Email: damianbrosnan@gmail.com

Address

Difficulties in Compiling the Required Information

OCM did not encounter any particular difficulties in compiling the required information.

1 INTRODUCTION

1.1 The Applicant

Forge Hill Recycling Ltd (FHR) operates one of the largest merchant waste management facilities in the Southern Waste Region and currently provides recycling and recovery services to waste management companies operating in Cork and Kerry.

1.2 Facility Overview

1.2.1 Site History

The site was initially developed in 1969 and waste operations began in 1987. Cork County Council granted a Waste Permit to the then operator in 1991. In 2003 the Environmental Protection Agency (EPA) granted a Waste Licence (WO-173-01) to the then operator IPODEC that authorised the acceptance of 82,000 tonnes/year of household, commercial, industrial and construction & demolition waste.

A redevelopment of the site in 2005 included the demolition of the old waste transfer and office building and the construction of a new waste processing building, office, weighbridge and electrical substation; installation of new foul and surface water drainage systems including oil interceptors and a storm water balance tank; provision of bin/truck and wheel wash area, and paving the open yards with a concrete slab. In 2008 the waste processing building was extended, a weigh bridge was installed in the northern section of the site and car parking was provided.

In 2009 the licence was transferred to Greenstar Environmental Services Limited (Greenstar). Greenstar suspended waste activities in September 2011, following which the all wastes were removed from the site. The license was surrendered in May 2016.

In 2015 the site was acquired by the current landowner and leased to FHR. In December 2015 Cork County Council granted FHR a Waste Facility Permit to operate the site as a recycling, recovery and transfer facility. The annual tonnage was limited to 49,999 tonnes.

In 2016 an extension to the western elevation of the waste processing building was completed to allow the internal storage of baled recyclables. In August 2017 the EPA granted FHR a Waste Licence (W0290-01) that authorised the acceptance of 82,000 tonnes of was annually. A copy of the licence is in Appendix 1.

1.2.2 Waste Activities

FHR 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)

Waste acceptance hours are 06:30 and 23:30, Monday to Friday inclusive, 06:30 to 17:30 Saturdays and 0830 to 17:30 Sundays and Bank Holidays. Operational hours are 06.00 and 24.00 Monday to Friday inclusive, 06:00 to 18:00 Saturdays and 08:00 to 18.00 Sundays and Bank Holidays.

1.3 Proposed Development

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 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 relocation of the eastern boundary fence of the operational area to eastern edge of the landowners holding, for which planning permission has already been granted. The works will require the removal of a treeline that is parallel to the fence and paving an area disturbed ground (ca 450m^2) between the fence and the property boundary.

All waste acceptance, processing and storage will continue to be carried out inside the buildings, with the exception of the current external storage of an enclosed trailer containing non-recyclable residues and the proposed storage of baled metal wastes.

It is proposed to operate the facility and accept waste 24 hours/day, 7 days a week. While the processing line will normally run for 18 hours daily (06.00 to 24.00) it may on occasion be necessary to operate for 24 hours. In addition, housekeeping and maintenance works may be carried out between 24.00 and 06.00.

Waste acceptance will normally be between 06.30 and 23.30 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.

2 PLANNING & WASTE MANAGEMENT POLICY

2.1 Introduction

This Chapter presents an overview of national and regional waste policies and demonstrates how the proposed development is consistent with their objectives. It is based on the Cork County Development Plan 2014-2020; The Ballincollig Carrigaline Municipal District Local Development Plan 2017; national Waste Policy Statements and the Southern Regional Waste Management Plan (2015-2021).

2.2 Planning Policy

2.2.1 Cork County Development Plan 2014-2020

The Plan sets out the development strategy (policies and objectives) for the sustainable future growth of the county. Section 11.7, which addresses waste management, recognises there is a continuing need to divert as much as possible from landfill through the provision of facilities and services that include a bring-bank network, civic amenity sites, biological treatment plants, kerbside recycling, and the introduction of a separate organic waste collection service.

It is policy to ensure the provision of quality, cost effective waste infrastructure and services that reflect and meet the needs of the community and to ensure that the 'polluter pays principle' is observed in all waste management activities.

It is a specific objective to implement the provisions of the European Union (EU) Waste Management Hierarchy and the current Waste Management Plan for the Region. This means that developments in the county must take account of the provisions of the Waste Management Plan and observe those that relate to waste prevention and minimisation, waste recycling facilities, and the capacity for source segregation.

The site is in an industrial area within the boundary of the Cork City South Environs area, which is designated as an 'Existing Built-Up Area' in the Ballincollig Carrigaline Electoral Area Local Area Plan. It is an objective of the Plan (Objective ZU 3-7) to promote the development of industrial areas for uses that *inter alia* include waste materials treatment and recovery and transport operations. In the case of Existing Built-Up Areas' the character of the surrounding area must be taken into consideration

2.3 Site Planning History

Details of the planning permissions granted for development at the site are in Table 2.1

Table 2.1 Planning Permissions

Applicant	Planning Reference	Permission Sought
Howard Rotavators	367/69	Erection of warehousing and offices
Howard Rotavators	908/69	Erection of warehousing and offices
Howard Rotavators	1468/69	Erection of warehousing and offices
Howard Rotavators	1981/73	Extension to existing offices and warehousing
Howard Rotavators	3967/79	Extension to existing offices
VESI	02/4286 (PL 04.202198)	Demolition of existing waste transfer and office building and construct a new office building, waste transfer buildings and an electricity substation
VESI	06/5945	Construct ESB substation control room and new site entrance.
VESI	06/10127	Demolition of existing recycling building and construction of new recycling building, extension to waste transfer building and new site exit.
FHR	15/6426 (PL 04.246477)	Alterations to existing MRF, including demolition of part of the existing MRF building and extension of the existing MRF building, changes to the façade and a new boundary fence.
FHR	18/04299	Retention of 2 No. extensions to the existing MRF, modifications to the façade.

2.4 Waste Management Policy

2.3.1 National Waste Management Policy

The foundation policy statement on waste management *"Changing Our Ways"* was published by the Department of the Environment and Local Government in September 1998. This statement firmly bases national policy on the EU Waste Management Hierarchy. In descending order, the current preference is: -

- Prevention;
- Preparing for Reuse;
- Recycling;
- Other Recovery (including energy recovery); and
- Disposal.

The 2002 policy statement *'Preventing and Recycling Waste - Delivering Change'* identified initiatives to achieve progress at the top of the Waste Hierarchy so as to prevent waste arising and increase recycling rates.

In '*Waste Management – Taking Stock and Moving Forward' 2004*, the significant improvement in recycling rates achieved since 1998 was recognised, but the need for further expansion was emphasised. The statement confirmed that Ireland's national policy approach remained *'grounded in the concept of integrated waste management, based on the internationally recognised waste hierarchy, designed to achieve, by 2013, the ambitious targets set out in Changing Our Ways'.*

In 2006, the National Biodegradable Waste Strategy was published. Its primary focus was to achieve the targets set for the quantity of biodegradable municipal waste that can be landfilled. A key element was the collection of source separated household and commercial food waste or "brown bin" material and its treatment, primarily biological treatment.

In 2008, the Government initiated a review of waste policy, to identify possible changes to policy at national level that would assist Ireland to move towards a sustainable resource and waste policy, including minimising the creation of waste and self-sufficiency in the reuse and recycling of materials. The review also addressed the application of alternative waste management technologies.

The EU Waste Framework Directive 2008/98/EC was introduced to co-ordinate waste management in Member States, with the objective of limiting the generation of waste and optimising the organisation of waste treatment and disposal. The Directive, which also established the first EU wide recycling targets, was transposed into Irish Law by the European Communities (Waste Directive) Regulations 2011 (S. I. No. 126 of 2011).

In response, the Government initiated a further review of national waste policy, one of whose objectives was to provide the necessary measures to ensure that waste undergoes recovery operations in accordance with Articles 4 and 13 of the Directive. A consultation document issued by the Department stated that classification of a treatment process as a recovery activity depends on the level of success in either recovering materials, or producing heat and/or power.

The most recent policy statement '*A Resource Opportunity '* is also based on the EU Waste Management Hierarchy and encompasses a range of measures across all the tiers namely, prevention and minimisation, reuse, recycling, recovery and disposal.

The statement sets out how the higher tiers can reduce Ireland's reliance on finite resources, virtually eliminate reliance on landfill and minimise the impact of waste management on the environment. It is a policy objective that when waste is generated the maximum value must be extracted from it by ensuring that it is reused, recycled or recovered.

2.3.2 Southern Region Waste Management Plan 2015-2016

Cork is part of the Southern Waste Management Region, which covers 42% of the land mass of the country with a population of over 1.5 million people. The settlement pattern is evenly

split between urban and rural areas, with the four cities of Cork, Limerick, Waterford and Kilkenny having the highest population and the strongest centres of economic activity.

In the Southern Region 860,425 tonnes of Municipal Solid Waste (MSW) was collected in 2012. Of this 59% percent was recovered which was in line with the national rate. Unmanaged waste remains a problem in the region which local authorities intend to tackle over the period of the plan.

Plan targets are to achieve a recycling rate of 50% for all managed municipal waste by 2020 and to reduce to 0% the amount of untreated municipal waste to landfill in favour of higher value pre-treatment processes and indigenous recovery processes

It is policy (Policy E1) that future authorisations by the local authorities, the EPA and An Bord Pleanála of pre-treatment capacity in the region must take account of the authorised and available capacity in the market. The Plan states that the consideration of pre-treatment authorised and available capacity at existing sites in the Region prior to authorisation of future pre-treatment activities may have a positive effect on the environment in terms of potentially reducing the scale of development of new green field sites.

The Plan does not identify specific technologies and/or locations for future waste related activities. Rather it highlights capacity need, and concludes that guidance on proper siting of future waste-related activities (including expansion of existing facilities) is the most appropriate method at this stage of the planning hierarchy to address the potential for impact on the environment.

The role of the waste industry is discussed in Section 17.2.8 of the Plan and includes *inter alia* to:

- Cooperate with designated lead authorities and local authorities to implement the objectives, policies, actions and targets contained in the plan;
- Provide sustainable waste management infrastructure/technology in keeping with the waste hierarchy and the principle of self- sufficiency, and
- Communicate with the public to encourage better waste management behaviours and better quality recycling.

2.5 Energy Policy

EU Directive 2001/77/EC sets Ireland a national target of sourcing 16% of all energy consumption from renewables by 2020. Potential energy sources, such as non-recyclable combustible waste, can be processed to produce alternatives to fossil fuels, so as to assist in achieving the target.

2.6 Climate Change

The National Climate Change Strategy charts the way to achieve and maintain reductions in greenhouse gas emissions under the Kyoto Protocol. In 2009, the EU Commission agreed a

package of proposals to deliver on the EU's commitments to fight climate change and promote renewable energy up to 2020 and beyond.

The package seeks to achieve a 20% reduction in total EU greenhouse gas emissions by 2020 (relative to 1990 levels) and, at the same time, to increase to 20% the amount of renewables in energy consumption.

To meet the 2020 target, it is essential that greenhouse gases emissions are reduced at a national level and the waste sector must contribute to this reduction. The diversion of biodegradable waste from landfill reduces methane emissions, while fuel manufactured from non-recyclable wastes replaces fossil fuels.

2.7 Compliance with Policy Objectives

FHR's existing operation and the proposed development are consistent with objectives of the current national and regional waste policy objectives and contribute to the achievement and maintenance of national and regional recycling and recovery targets.

2.8 Need for the Development

The proposed development is necessary to allow FHR to meet the needs of its customers, whose dry recyclable collection rates are increasing, and will contribute to the achievement of national waste recovery and recycling targets.

3 ALTERNATIVES EXAMINED

3.1 Introduction

This Chapter describes the reasonable alternatives to the proposed development that were considered, including site location, treatment technologies and configurations, and a 'Do Nothing' scenario.

3.2 Existing Site

The facility is specifically designed and has established use for waste management and has the capacity to accommodate the proposed development. The features that render it suitable for the proposed development are:

- Existing authorisation to accept and process dry recyclable wastes;
- Readily accessible location for FHR's existing commercial customer base, and
- Existing ground conditions (soil type/geology/hydrology) and distances from sensitive environmental receptors minimise the risk of unexpected emissions giving rise to pollution.

3.3 Alternatives

The only alternative to the proposed development is to construct a new waste management facility at a different location. This would require the acquisition of land, the construction of new waste processing buildings and supporting infrastructure (offices, maintenance workshops, weighbridge), and the provision of new site services (surface water, foul water, power, water supply and security).

The development of a new facility offers no environmental advantages compared to the proposed development within the existing facility.

3.4 Alternative Technologies

The current method of waste acceptance and processing is consistent with best practice in the waste industry complies with the Best Available Technologies for waste management and storage.

3.5 The Do Nothing Alternative

If the licence review is not granted the facility will continue to operate in its current configuration and FHR will not be able to expand its waste recycling/recovery capacity.

4 FACILITY DESCRIPTION

4.1 Introduction

This Chapter presents an overview of the existing facility location, layout and method of operation and describes the proposed development. More information on the absorption capacity of the natural environment is presented in Chapters 5 to 16, which also assess the impacts associated with the existing operations and the proposed development.

4.2 Site Location

The facility is located on the southern fringe of Cork City (Figure 4.1). It is accessed from the Forge Hill Road via a junction on the N27 National Primary Road (Kinsale Road) leading from the N40 Southern Ring Road to Cork Airport.

4.3 Surrounding Land Use

The site is bounded to the north and south by industrial and commercial premises; to the west by a public road (Forge Hill), 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.

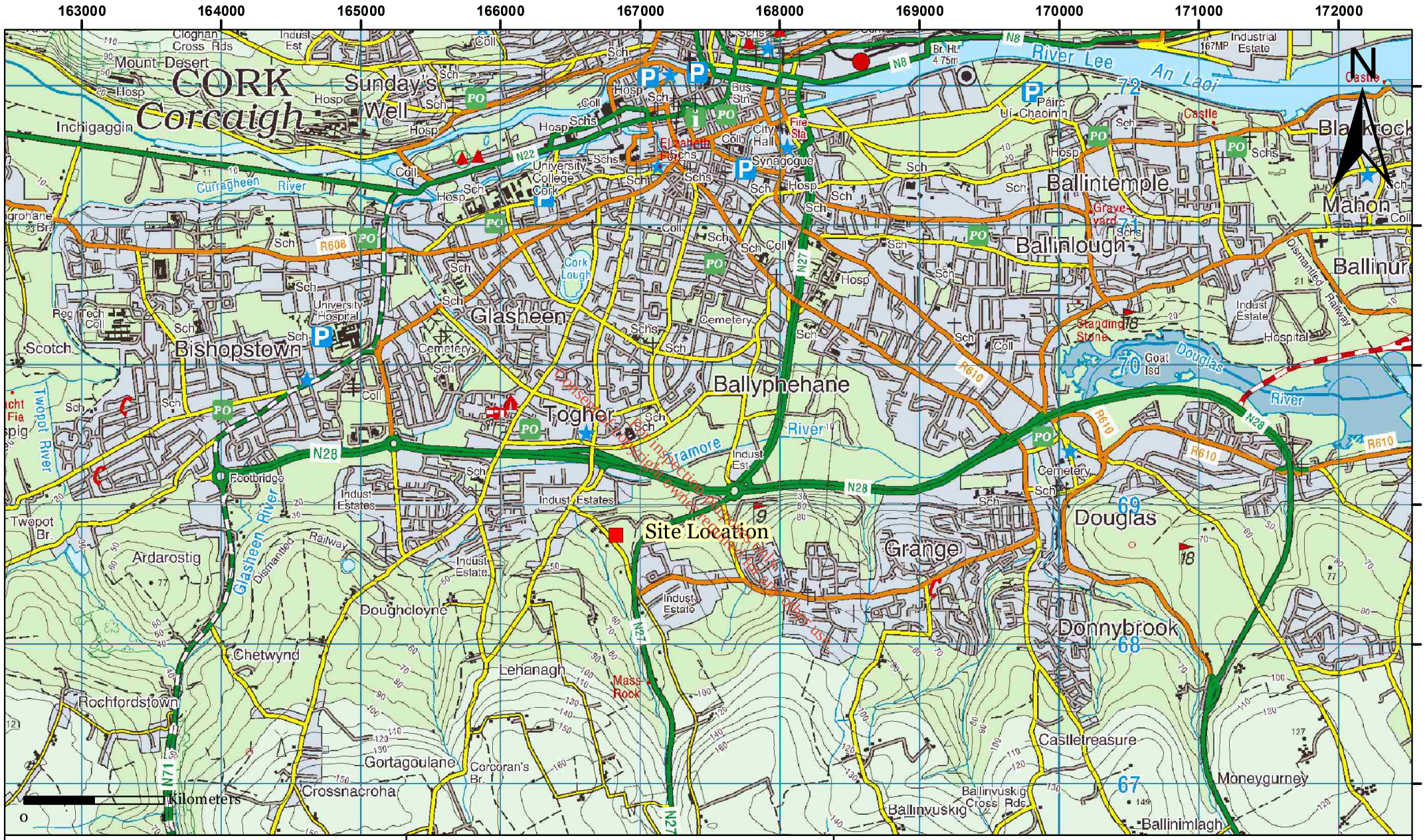
4.4 Site Layout

4.4.1 Existing Layout

The existing site layout is shown on Drawing No.14/4347-PL-07. It covers 10,110 m^2 and comprises a waste processing building (3,796m^2) two storey office; an electrical substation (40m^2), a power wash storage hut; two weighbridges, paved open yards (5,864m^2) and an unpaved area (450m^2) in the east of the site

The waste processing building is 9.37m to the eaves and 11.84m to the apex. It comprises three adjoining buildings -Buildings 1 (1,314) in the centre, and Building 2 (1,429m^2) in the eastern side and Building 3 (1,053m^2) at the western side. The buildings are portal steel frame with brick and mass concrete walls to 3.5m and double skinned cladding to the full height and on the roof. Building 2 has acoustic insulation panelling on the eastern and southern walls. All the floors are mass concrete

A security fence surrounds the current operational area and there are two access/exit points off Forge Hill Road, at the south-western and north-western boundaries respectively. There is a ca 5m high litter fence along the south-eastern boundary. To the east of the operational area, between it and the property boundary, is an area of disturbed ground.



O'Callaghan Moran & Associates, Unit 15 Melbourne Business Park, Model Farm Road, Cork. Tel. (021) 4345366 email: info@ocallaghanmoran.com	CLIENT Forge Hill Recycling Ltd.
	TITLE Site Location

Details:
■ Site Location

Figure 4.1

Buildings 1 and 2 are divided by a wall that has a large opening at the southern end and a smaller opening at the northern end to allow operation of the processing equipment and internal movement. There is a fire wall between Buildings 1 and 3 that has an access door that automatically closes when the fire alarm is activated.

Currently all waste delivery vehicles enter by the southern gate and leave via the gate at the northern boundary. All wastes are off-loaded in a designated intake area at the eastern side of Building 2. The waste delivery vehicles access the off-loading area via a doorway on the eastern elevation. The vehicles that transfer waste from the site are loaded at a docking ramp and the north-western corner of Building 3.

There is a weighbridge to the south of the processing building and another in the north west of the site. The area to the west of the processing building is bitumen paved and is used as a car park. There is a concrete paved yard to the south and east of the processing building. A small area around the site offices is not paved, but is covered with gravel.

There is a washing area in the north-east corner of the yard, which in the past had been use to clean vehicles and skips using a hand held power washer, but now given the nature of the wastes handled is seldom used. A waste quarantine area is provided inside the building. There is a designated fire quarantine area to the east to the entrance to Building 2. An engineered depression in the yard north of Building 1 that is filled with water is used, if required, as a wheel wash for trucks leaving the site.

4.4.2 Proposed Layout

The proposed development is shown on Drawing No. 14/4347-PL-01. It involves the construction of an extension (Building 4, 1,468 m^2) to the east and north of the existing processing building and a smaller extension (140m^2) at the south-eastern side of Building 2.

The larger extension will become an additional waste intake area and will also be used store loose wastes. The building eaves, apexes, construction details and external finishes will be same as the existing building. There will be an internal firewall between the extension and the existing building. The building floor will be mass concrete and will be 300mm below ground level, with a 100mm ramp at the entrances to provide firewater retention capacity.

The smaller extension is to allow for possible future reconfiguration of the processing plant. The building eaves, apexes, construction details and external finishes will also be same as the existing building.

The construction will require the demolition of the vehicle/bin wash hut at the north-eastern corner, the realignment of the eastern boundary fence, paving of the area of disturbed ground in the east of the site and the relocation of the designated fire quarantine area. A new bunded oil storage tank will be located in the south-eastern corner of the site.

All waste delivery vehicles will enter the intake buildings (Buildings 2 and 4) via roller shutter doors. The wastes will be off-loaded onto the floor and then moved into a below ground feed hoppers from where they will be transferred by a conveyor to the waste processing area in Buildings 1 and 2. A new docking ramp and access door at the north-west corner of the extension will be used to load the baled materials into articulated trailers.

Drawing No. 14/4347-PL-01

4.5 Site Security

There is a palisade fence around the southern, eastern and western boundary of the operational area with fencing, a block wall and two security gates (north and south) on the western boundary. There is a CCTV surveillance and a monitored alarm system.

4.6 Services

The site has connections to the mains water supply, the municipal foul sewer and telecom services. There is an electricity substation at the western boundary and a ring main fitted with 4 No. fire hydrants around the existing processing building.

4.7 Foul Water Drainage

4.7.1 Existing System

Sanitary wastewater from the toilets and waste water from the staff welfare facilities discharge directly to the Irish Water foul sewer. As part of the redevelopment of the site in 2005 three separate surface water drainage systems were installed, one of which collects run-off from areas of the site, which due to the operations and waste types that were carried out at the time 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.

4.7.2 Proposed System

The drainage layout is shown on Drawing No.14/4347/PL-03 new intake building will enclose the drains serving the apron in front of the access door on the eastern side Building 2 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.

4.8 Surface Water Drainage

4.8.1 Existing System

The drainage system is shown on Drawing No. 14/4347/PL-02. Rainwater run-off from 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.

Drawing No 14/2347/03 Foul Water

Drawing No 14/4347/PL-02 Surface Water

A float 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, which is fitted with a manually operated shut-off valve, to an unnamed stream to the west of the site. This stream joins the Tramore River, approximately 370m to the north of the site. Both tank chambers are fitted with alarms that alert staff when the water level is either too low in the western chamber or too high in eastern one.

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 a fire the emergency response actions include switching off the pump in the balancing tank and closure of the valve at SW-1.

4.8.2 Proposed System

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.

4.9 Facility Management

The Facility Manager has completed the FAS Training Programme and has 11 years' work experience in the waste industry. Facility staff include general operatives, plant drivers, and maintenance and office staff.

Condition 2 of the EPA licence requires FHR to adopt an Environmental Management System (EMS). FHR has prepared documented EMS which comprises an Environmental Manual and a series of EMS Procedures (EP01 to EP18) and EMS Records (ER01 to ER15).

The EMS requires the implementation of an Environmental Management Programme and the development of a Schedule of Environmental Objectives and Targets that provides for a review of all operations and processes, including environmental training and awareness and emergency response actions.

4.10 Traffic Management

Currently there is a one way traffic movement system around the site. All waste transport vehicles and private cars enter the site through the southern gate and leave via the northern one. There are car parking spaces to the west of the processing building and along the southern site boundary.

Following the construction of the extensions there will be a change to the internal traffic management system. All vehicles arriving at the site will enter via the southern gate. Those

vehicles delivering the wastes will be weighed in on the southern weighbridge and then drive along the yard south of the existing processing building to the intake buildings, where they will be off-loaded. The vehicles will then drive to the southern weighbridge where they will be weighed before exiting the site via the southern weighbridge.

The articulated trailers used to transfer the processed wastes will enter via the southern gate and then drive into the western yard where they will turn and reverse to the docking bays. Once loaded the vehicles will be weighed out on the weighbridge in the north-west of the site and leave via the northern entrance.

4.11 Waste Types & Quantities

The current licence authorises the acceptance of 82,000 tonnes of municipal dry recyclable waste. It is proposed to increase the annual intake 100,000 tonnes. The sources are primarily households and commercial dry recyclable collections and the materials include mainly paper, card, plastic bottles, plastic film, steel cans and aluminium cans. The composition of the additional wastes will be the same as those already accepted. The actual amount of each particular waste type may vary but the overall maximum annual input will not be exceeded.

4.12 Waste Acceptance Procedure

All incoming waste is subject to documented waste acceptance procedures that have been approved by the EPA. The wastes are delivered by hauliers that have an up to date Waste Collection Permits and waste is not accepted from either members of the public, or waste companies that do not have a contract with FHR.

All deliveries are weighed on the incoming weighbridge and the origin of the waste, the relevant List of Waste code and the weight are recorded. The driver is then directed to the intake area, where the wastes are off-loaded. The wastes are visually checked and any load deemed unsuitable is moved to a designated quarantine area for a more detailed inspection. If the materials are found to be unsuitable they are either returned to the customer, or sent to an appropriate waste management facility.

4.13 Waste Processes

The mixed wastes are mechanically separated by type (plastic, paper , cardboard, metals) and then baled and stored prior to transfer to other facilities for further processing, for example paper mills, steel mills, aluminium smelters and plastics factories. 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).

4.13.1 Plant & Equipment

The processing plant, which has the capacity to process 23 tonnes/hour, comprises;

- Grab Machine – to load materials into the process line.
- Metering Bunker – to regulate the feed rate.
- OCC Screen – to remove large flat fractions from the mix (e.g. large sheets of cardboard).
- OCC Optical Sort – to capture cardboard.
- Ballistic Separator – to separate materials by size and shape (2D, 3D and fines).
- Optical Separators (5 No.) – to separate plastic and paper fractions using the reflection and refraction properties of each material. Each optical separator is strategically placed and set up differently to capture different materials.
- Eddy Current Separator – to capture non-ferrous metals, particularly aluminium cans.
- Over-band Magnet – to capture ferrous metals, particularly steel cans.
- Balers (2 No.) – to produce bales of paper, cardboard, plastic film, plastic bottles, aluminium cans, steel cans, etc.
- Forklifts (2 No.) – to move bales to storage and to haulage vehicles.
- Teleporter – to move material to the balers.

The proposed development will involve the provision of a below ground feed hopper and a conveyor in the new intake area that will transfer the mixed recyclables to the existing process line.

As required by the EPA licence those items of plant critical to the efficient and adequate processing of waste at the facility (including inter alia waste loading vehicles and ejector trailers) have a 100% duty and 50% standby capacity and provision has been made for contingency arrangements and/or back up and spares in the case of breakdown.

FHR has a plant and equipment preventative maintenance programme, which is carried out on-on-site by a contractor.

4.13.2 Waste Storage

The EPA licence requires the preparation of a waste storage plan that identifies discrete storage areas across the site and specifies the sizes of stockpiles, the recommended separation distances and the maximum amount of waste stored that can be stored on site at any one time. A copy of the revised storage plan that takes into consideration the proposed development is in Appendix 2. The maximum amount of waste on site at any one time will be 1,551 tonnes.

4.13.3 Waste Acceptance and Operational Hours

Current waste acceptance hours are 06:30 and 23:30, Monday to Friday inclusive, 06:30 to 17:30 Saturdays and 0830 to 17:30 Sundays and Bank Holidays. Current operational hours are 06.00 and 24.00 Monday to Friday inclusive, 06:00 to 18:00 Saturdays and 08:00 to 18.00 Sundays and Bank Holidays.

Waste acceptance will normally be between 06.00 and 00.00 hours; however on occasion waste may be accepted outside these hours. Similarly waste processing will typically be between 06.00 and 24.00 hours; however maintenance and cleaning will be carried outside these hours. It may on occasion be necessary to process waste between 00.00 and 06.00 hours to clear backlogs of waste that arise, for example due to plant breakdown.

4.14 Oil / Chemical Storage

At present fuel is not stored on-site. The diesel powered mobile plant are refuelled on-site as required by tanker fuel delivery trucks. Small quantities of oils such as hydraulic oil (1 No. 205 litre drum) lubricating oils and coolants (5 No. 205 litre drums) for plant maintenance purposes are stored in a bunded pallet in the power wash hut.

To provide a contingency back-up to the 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. This will only be used to re-fuel the plant outside of the normal fuel tanker delivery hours. The tank will comply with the design requirements specified in Condition 3.6 of the EPA licence.

The hydraulic and lubricating oils and coolants will be stored in a bunded pallet inside the processing building.

4.15 Waste Generation

The staff welfare facilities and office generate small amounts of food waste, plastic and paper. The plant and equipment preventative maintenance programme generates small amounts of waste oils.

4.16 Nuisance Control

FHR implements the nuisance control measures specified in the EPA licence to mitigate the impacts of noise, dust, litter and odours and minimise the risk of site activities being a source of nuisance to neighbours and members of the general public. Site staff carry out daily nuisance and litter inspections and daily litter picks.

4.17 Emissions

Actual and potential emissions associated with the waste activities include, rainwater run-off, contaminated run-off, dust, noise and odours.

4.18.1 Air

There are no point emission sources associated with the proposed development. Potential fugitive emissions include dusts in the construction stage and odours, dust and vehicle exhausts in the operational stage. Vehicle exhausts contain a range of compounds that affect air quality,

for example nitrous oxide, carbon monoxide, methane, carbon dioxide, benzene and particulates.

FHR only accepts mixed dry recylable material, which if not contaminated, are not a source of odours;however a certain level of contamination with potentially odorous biodegradable matter.

4.18.2 Surface Water

The only emission to surface water is rainwater run-off from the building roofs and open yards where the risk of contamination is low. The emission is weather dependent and periodic.

4.18.3 Foul Water

Sanitary wastewater and water from the staff welfare facilities discharges to the foul sewer. Rainwater run-off from areas of the site where there is the potential for contamination to occur also discharges to the foul sewer.

4.18.4 Ground / Groundwater

There are not and will not be any direct or indirect emissions to ground and groundwater.

4.18.5 Noise

Noise emissions will occur during the construction and operational stages. The waste transport vehicles, the fixed and mobile waste handling and transport plant and equipment are sources of noise emissions. Emissions occur during the waste acceptance and processing periods.

4.18 Emission Controls

All waste reception and processing and the majority of the storage are and will be carried out inside the processing building. The roller shutter doors are typically only opened to allow vehicles to enter and exit. The only materials stored externally are small amounts of non-recyclable residues in a fully enclosed trailer and bales of metal waste. These measures effectively mitigate noise and dust emissions and control odour emissions.

The processing does not generate any wastewater and the concrete paved building floors are regularly inspected and cleaned as required.

Rainwater run-off from the yard areas where there is the potential for contamination to occur is collected separately and passed through a Class 1 Oil Interceptor before being discharged to the Irish Water foul sewer. Run-off from the remaining yards passes through another Class I Interceptor before entering the flow balancing tank, from where it is discharged to the stream at a regulated rate.

During extended periods of dry weather the open yards are cleaned using the on-site road sweeper to control dust emissions.

There are shut-off valves on the foul and surface water drainage systems that can be closed in the event of an incident that has the potential to generate significant volumes of contaminated water. Ramps at the entrance doors in conjunction with the reduced floor level in Building 4 and the surface water balance tank provide firewater retention capacity.

4.19 Environmental Monitoring

The EPA licence specifies the environmental monitoring that must be carried out, which includes weekly surface water and foul water sampling and testing; quarterly dust deposition assessments; biannual groundwater monitoring and noise surveys as required. The current monitoring locations are shown on Figure 4.2. The results are submitted to the EPA, who also carry out independent monitoring as part of its regulatory compliance regime. Following the construction of Building 4 noise monitoring locations B3 and B4 and dust monitoring point D4 will be relocated to positions agreed with the EPA.

4.20 Incidents

There have been no incidents at the site that had the potential to give rise to surface water, soil or groundwater pollution.

4.21 Safety and Hazard Control

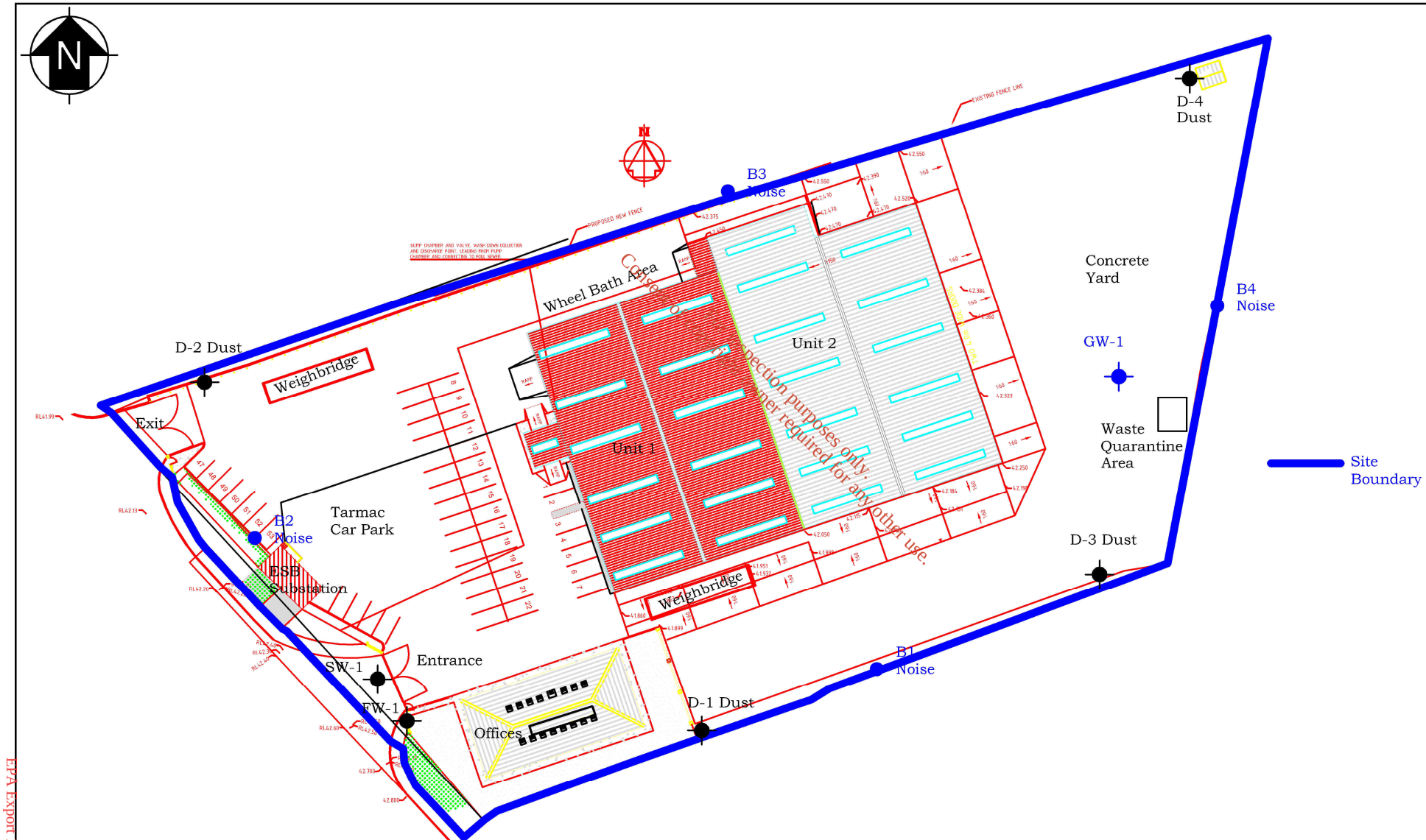
FHR has adopted a Corrective and Preventive Action Procedure (EP07) and prepared a Safety Statement that identifies and evaluates the major on-site potential hazards and describes the control measures in place to mitigate the hazards associated with current operations. A copy of EP07 is in Appendix 3.

All site staff receive the appropriate training for their particular roles. All personnel and visitors are obliged to comply with site guidelines regarding access to and from the facility and on-site traffic movement. All site personnel are provided with and are obliged to wear, personal protective equipment (PPE) appropriate for their particular functions. PPE includes facemasks, gloves, safety glasses, steel-toed footwear, overalls, reflective jackets and helmets.

4.22 Accidents and Emergencies

An emergency is an accident/incident that has the potential to result in environmental pollution and harm to human health & safety. The EPA licence requires FHR to ensure that an Emergency Response Procedure (ERP) is in place that addresses any emergency situation that may originate on-site. FHR has prepared an ERP and a copy (EP09) is in Appendix 3.

In the event of a breakdown of equipment or any other occurrence which results in the closure of the facility, any waste arriving at or already present will be transferred directly to alternative waste management facilities until such time as the FHR facility is fully operational. Spill kits are provided as required in vehicles and at appropriate locations around the facility to quickly contain any spills of potentially polluting liquids.



O' Callaghan Moran & Associates.
Unit 15 Melbourne Business Park
Model Farm Road, Cork, Ireland.
Tel. (021) 4345366
email: info@ocallaghanmoran.com

CLIENT

Forge Hill Recycling Ltd.

FIGURE No.
4.2

TITLE

Monitoring Locations

SCALE
NTS

REV.
A

4.22.1 Fire

FHR has completed a Fire Risk Assessment in accordance with the EPA licence requirements and a copy is in Appendix 4. The prevention and control measures in place include:

- Implementation of a Fire Safety Management Plan.
- Restriction on the amount of combustible waste on site at any one time.
- Fire wall between Buildings 2 and 3.
- Provision of flame detectors linked to a fire alarm.
- Provision and maintenance of fire extinguishers and hose reels inside the processing building and fire extinguishers in the office.
- Sprinkler system on the existing waste intake area and the two balers, where there is a risk of ignition sources.
- Provision of fire hydrants and fire-fighting water storage tank.
- Emergency Response Procedures and staff training, and
- Provision of firewater run-off retention capacity.

The sprinkler system in the existing waste intake area is fed by the water in the western chamber of the surface water balance tank. The system is pressurised and linked to the fire alarm. Once the alarm is activated the valves open to release the water. The pressure drop activates the pump in the balance tank to maintain the supply to the sprinklers.

A firewall will be provided between Building 3 and Building 4 and a water sprinkler system linked to the alarm, to the same specification at the current one, will be installed on the new waste intake area before it becomes operational.

The only areas where there is the potential for a fire to occur is inside the waste processing building and the office. FHR completed a Firewater Retention Assessment to estimate both the volume of firewater run-off that would be generated in the response to a fire and the available retention capacity. The volume of firewater generated would be 1,126 m^3, while the available retention capacity is 1,296m^3. A copy of the Firewater Retention Assessment is in Appendix 5.

4.22.2 Environmental Liability Risk Assessment (ELRA)

The EPA licence requires FHR carry out an ELRA that assesses the environmental effects, including impacts on humans, of incidents and accidents. FHR has completed the ELRA for its existing operations and the proposed development and it has established the incident that would have the most significant impact is a fire the waste processing building. A copy of the ELRA is in Appendix 6.

5 CLIMATE

5.1 Introduction

This Chapter describes the climate at the site and the impacts of the proposed development on the climate and microclimate, including a 'do nothing' scenario and an assessment of cumulative effects. It identifies the mitigation measures that are and will be implemented to reduce the significance of the effects and assesses the impacts and the residual effects.

5.2 Methodology

The assessment was based on Met Eireann data for monitoring station at Cork Airport[1], which is 2 km to the south of the site and Ireland's Greenhouse Gas Emissions Projections 2016 - 2035 published by the Environmental Protection Agency (EPA) (2017). The EPA is the responsible authority for reporting on climate change

Greenhouse gas emission projections are a valuable analytical tool to inform how Ireland will comply with 2020 targets under the EU Effort Sharing Decision[2]. The EPA prepares the projections annually, in collaboration with relevant State and other bodies, to ensure consistency with economic forecasts and with projected activity in relevant sectors including energy, agriculture and industry.

5.3 Proposed Development

The proposed development involves the expansion of waste activities from 82,000 tonnes/year to 100,000 tonnes/year and will involve the construction of a two extensions (1468 m^2 and 140 m^2) to the existing waste processing building. There will be no significant changes to either the waste types, or the processing plant and equipment and there will be no new emission points to atmosphere.

Processing the additional waste will result in an increase in diesel and electricity consumption with associated extra greenhouse gas emissions. The additional traffic associated with the increased waste inputs will also result in more greenhouse gas emissions.

[1] "Contains Met Éireann Data licensed under a Creative Commons Attribution-ShareAlike 4.0 International licence"

[2] Decision No 406/2009/EC of the European Parliament and of the Council of 23 April 2009 on the effort of Member States to reduce their greenhouse gas emissions to meet the Community's greenhouse gas emission reduction commitments up to 2020

5.4 Receiving Environment

The climate in the area can be described as mild and wet, with the prevailing wind direction from the west. The average rainfall, potential evapotranspiration and wind direction is shown in Table 5.1.

Table 5.1 Meteorological Data: Cork Airport

Rainfall	
Annual average	1,228 mm
Average maximum month (Dec)	150 mm
Average minimum month (July)	77 mm
Potential Evapotranspiration	
Average Annual	516 mm
Wind	
Prevailing direction	West
Prevailing sector	West

Locally the ground slopes downwards from south to north, but the site itself is generally level and effectively entirely covered by buildings and paved yards. The slope and site layout influence the micro-climate, but not to any significant extent.

5.5 Impacts

It is now internationally accepted there is a link between greenhouse gas emissions and climate change. Direct emissions from waste management facilities are associated with on-site processing and off-site electricity power generation, while indirect emissions are linked to the vehicles transferring wastes to and from the site and staff transport.

The EPA Projections Report states that a development may have an influence on global climate where it represents "a significant proportion of the national contribution to greenhouse gases". Based on the nature and size of the existing operation and the proposed development, the greenhouse gas emissions will not be significant in terms of the national emissions and Ireland's agreed limits under Kyoto Protocol. Thus the development will not affect the global climate.

The increased waste inputs will result in an increase in indirect emissions from the additional traffic movements. Under the EU Effort Sharing Decision Ireland's 2020 target is to achieve a 20% reduction of non–Emissions Trading Scheme (ETS) sector emissions (i.e. agriculture, transport, residential, commercial, non-energy intensive industry and waste) compared to 2005 levels. The EPA projects that by 2020 non-ETS sector emissions will be 4% to 6% below 2005 levels.

In 2017 the EPA projected that between 2013-2020 Ireland will cumulatively exceed its compliance obligations by 12 million tonnes of CO^2 equivalent under the 'With Measures' scenario and 3 million tonnes under the 'With Additional Measures' scenario.

Emissions from agriculture and transport are key determinants in meeting the targets and emissions from both sectors are projected to increase up to 2020. However, emissions from the waste sector are projected to decrease by 46% by 2020, primarily due to the reduction in the volumes of waste disposed to landfill and an increase in energy recovery.

5.6 Do Nothing Scenario

If the development does not proceed FHR will not be able to avail of an opportunity to increase its waste recycling and recovery rates and there will be no change to the greenhouse gas emissions.

5.7 Prevention & Mitigation Measures

Waste processing requires significant energy inputs and energy costs are a major element of the business overheads. Condition 7 of the EPA licence requires FHR to carry out an energy audit to identify all practicable opportunities for energy use reduction and efficiency. FHR has commissioned this audit and the recommendations will be incorporated into the Environmental Objectives and Targets in the facility's Environmental Management System.

Diesel fuelled plant engines are only turned on when wastes are being processed and FHR has a policy of not allowing engine idling. This also applies to waste transport vehicles accessing the facility.

5.8 Assessment of Impacts

All greenhouse gas emissions, regardless of the source, contribute to a cumulative negative environmental effect, unless offset by mitigation or compensatory measures. The proposed development will result in increased energy consumption and traffic, with a consequent increase in greenhouse gas emissions. This will be off-set somewhat by FHR's involvement in the production train for the SRF, which is a replacement for fossil fuels.

5.9 Residual Impacts

The proposed development will, in conjunction with current operations, have an on-going, imperceptible, negative, impact on climate.

6 TRAFFIC & TRANSPORT

6.1 Introduction

This Chapter describes existing road traffic conditions and the impacts of the proposed development on the local and regional road network, including a 'do nothing' scenario and an assessment of cumulative impacts. It identifies the mitigation measures implemented to reduce the significance of the impacts and assesses impacts and the residual effects.

6.2 Methodology

The assessment of impacts is based on the Traffic and Transport Assessment (TTA) completed by MHL Consulting Engineers (MHL). The full TTA report, which describes the methodologies applied, is in Appendix 7. MHL conducted a scoping exercise with Cork County Council's Traffic and Transport Department which identified that the Forge Hill/Kinsale Road Signalised Junction (Junction 1) should be selected for analysis.

The analysis was based on 12-hour junction turning count surveys over a three-day period, Thursday 18th January 2018 through to Saturday 20th January 2018. The assessment years include the base year 2018, the opening year 2020, and the design years 2025 and 2035 for both the morning (AM) and afternoon (PM) peak hours.

6.3 Proposed Development

The proposed development involves the construction of a new waste reception area to allow FHR to increase the total authorised intake from 82,000 tonnes/year to 100,000 tonnes.

It is proposed to obtain approval to accept waste and operate the facility 24 hours/day, 7 days a week. Waste acceptance will normally be between 06.00 and 24.00 hours; however on occasion waste may be accepted outside these hours.

The changes will facilitate FHR receiving waste at off-peak periods between 06:00 and 00:00. As FHR is a merchant facility waste acceptance times are not linked to household waste collection times and can be scheduled to avoid congested peak periods on the local roads network.

6.4 Receiving Environment

6.4.1 Local Road Network

Forge Hill Road links the Pouladuff Road (and the nearby Pouladuff Interchange with the N40 South Ring Road) to the N27 Airport Road. Junction 1, referred to above, serves as the main access junction to the facility. It is a staggered cross roads signalised junction on the N27 Airport Road (known locally as the Bull McCabe's Junction).

A second junction, Junction 2 is a priority junction of Forge Hill and the Pouladuff Road with Forge Hill operating as the secondary road. This junction experiences significant delays during evening peak periods. The drivers of the articulated trucks that deliver materials to the facility are instructed to avoid this route due to the sub-standard nature of the road and the junctions.

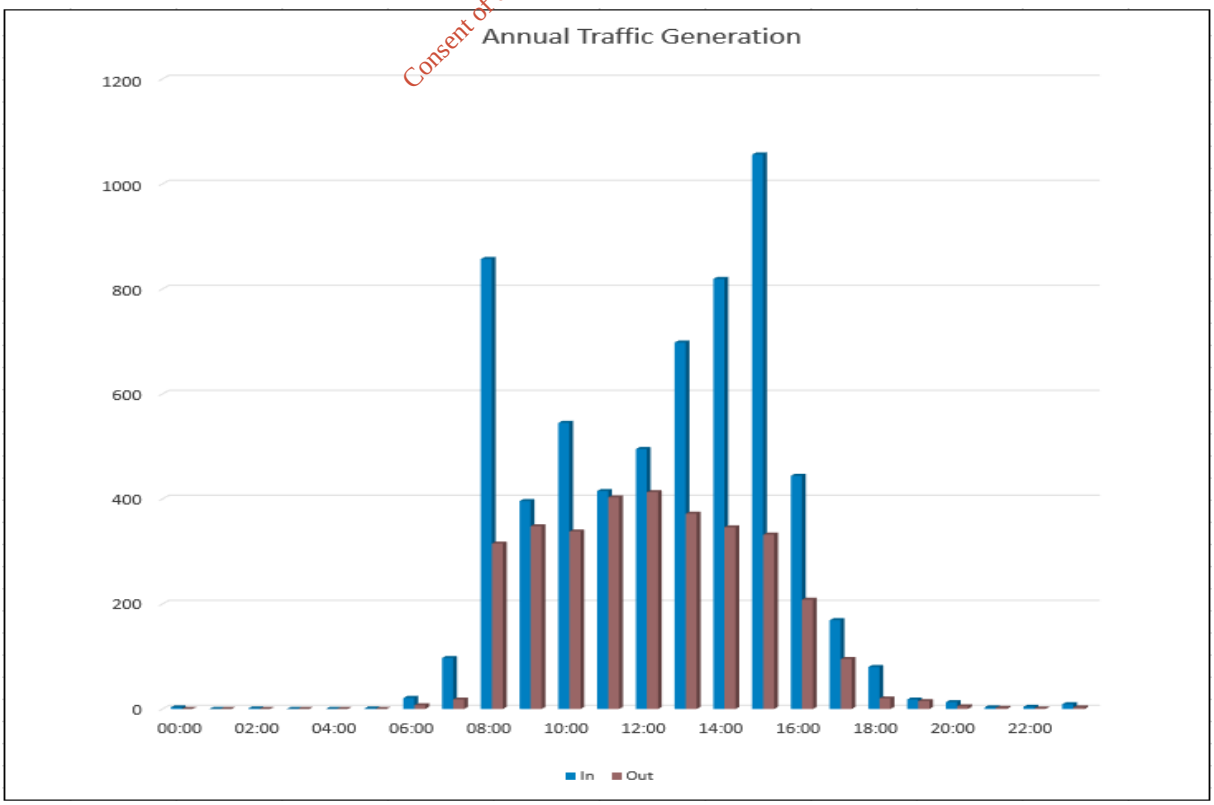
6.4.2 Current Traffic Flows

The traffic counts at Junction 1 over the 12-hour time periods for each of the three days established that the highest flows occurred on Thursday 18th January and that there were three peak periods 07:30-09:30, 13:00-14:00 and 16:30-18:00.

6.4.3 Existing Traffic Generated by FHR

The FHR weighbridge records were used to calculate the annual traffic movements (in and out) in 2017 associated with the annual waste acceptance rate, which was 82,000 tonnes. The traffic movements are shown on Figure 6.1, which includes the timing of the movements.

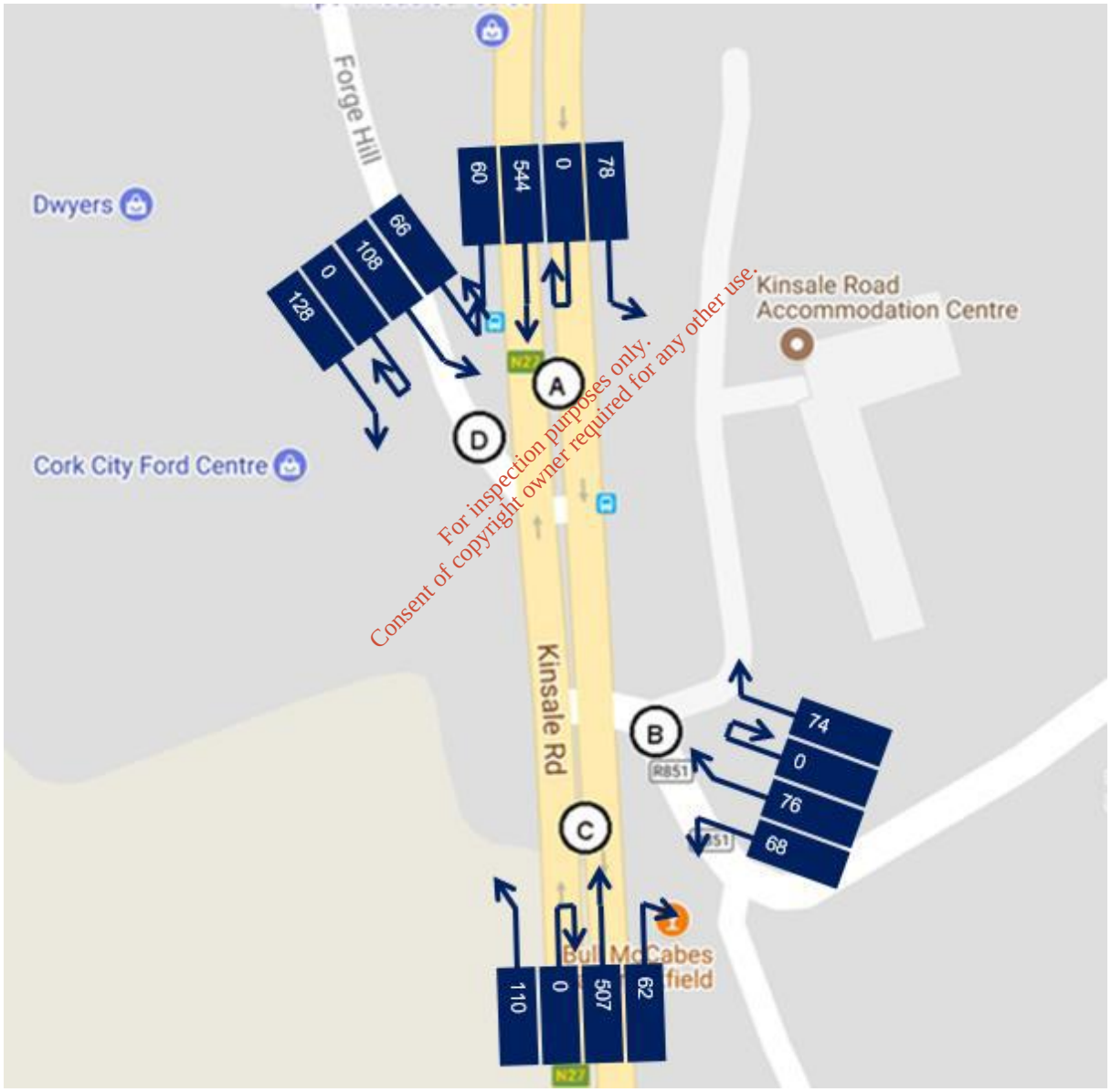
Figure 6.1 Annual Traffic Generation



The busiest time period (between 14:00-15:00) coincides with one of the three peak periods identified at Junction 1. The weighbridge records indicated that in the 'worst-case scenario' for traffic generation (14:00 - 15:00), a total of 5 heavy goods vehicles (HGV) entered the site with none leaving. The bulk of trips to and from the site use Junction 1 as the main access to the site.

Figure 6.2 shows the 1-hour traffic movements at Junction 1 between 14:00-15:00 on Thursday 18th Jan 2018. There was a two-way flow of 548 vehicles on the Forge Hill Road for the same time period.

Figure 6.2 Traffic Movements at Junction 1 14.00-15.00 18th January 2018



A two-way flow of 34 HGV was recorded over a 24-hour period in March 2017, which is considered to be the 'worst case' in terms of traffic generation at the current authorised waste intake rate. The peak hourly flow was 5 HGVs (articulated trailers). This means that the peak hourly HGV movements associated with FHR contribute approximately 1.1% to the traffic flow on Forge Hill Road. This is less than the 5% outlined in the Traffic Management Guidelines

Thresholds for Transport Assessments in areas where congestion exists. For the morning peak, the percentage contribution is lower again at 0.6%.

The peak period for traffic generation from the facility coincides with the morning and mid-day peak periods for background traffic flows. The morning peak between 08:00-09:00 is the critical time for the N27 (Junction 1).

However as the traffic movements associated with the facility comprises a very low percentage of the overall traffic flow in the area, it was considered that the analysis of Junction 1 for the morning peak period would adequately assess the impact of the proposed development on the surrounding roads network.

6.5 Impacts

6.5.1 Traffic Generation

The proposed development does not require the recruitment of additional staff and therefore will not result in an increase in private vehicle movements. A prediction of the traffic that will be generated by the proposed development was determined by means of a transport and trip attraction based on the proposed increase in the annual waste intake. This found that the proposed development has the potential to generate a maximum of 6 HGV movements at peak operational hours.

6.6 Do Nothing Scenario

If the development does not proceed there will be no change in the volumes of traffic associated with the facility.

6.7 Prevention and Mitigation Measures

The visibility splays at the entrances will be maintained and kept free of all obstacles that may cause a visual obstruction. Waste delivery and consignment times will be scheduled to avoid periods of peak traffic. All drivers will continue to be instructed to only access the site via Junction 1. The southern entrance will be widened and additional street lighting, tactile paving and slightly raised pedestrian crossings will be provided at both entrances to facilitate vehicle access and pedestrians walking along Forge Hill Road.

6.8 Assessment of Impacts

A traffic analysis was undertaken for the Opening Year – 2020 plus five and fifteen years from this date i.e., Opening year +5 – 2025 and Opening year +15 - 2035. The traffic growth associated with the proposed development will remain the same over the period 2020 to 2035.

The Transport Infrastructure Ireland (TII) "Project Appraisal Guidelines for National Roads Unit 5.3 – Travel Demand Projections – PE-PAG-02017, October 2016" was used to calculate growth factors for the existing road network traffic. Table 6. 1 shows the calculated growth factors to convert from 2018 to 2020, 2018 to 2025 and from 2018 to 2035.

Table 6.1: Future Growth Rates for Opening year, Opening year +5 Opening Year +15

		Cars/Light Goods Vehicles	Heavy Goods Vehicles	Combined
Count %		95%	5%	
2018	2020	1.021	1.048	1.022
2018	2025	1.074	1.178	1.079
2018	20135	1.136	1.416	1.150

LinSig Ver.3 was used to model the traffic at Junction 1 for the following scenarios;

- • 2018 – Base year (AM)
- • 2020 – Opening year (with / without development) (AM)
- • 2025 – Opening year +5 (with / without development) (AM)
- • 2035 – Opening year +15 (with / without development) (AM)

The model outputs include details of demand flow, ratio of flow to capacity' (RFC), start queue length and queuing delay for each arm of the junction. The RFC allows an assessment of the existing junction design and capacity. For traffic signal-controlled junctions an RFC of 0.90 or less is considered acceptable during the peak period. An RFC of this value indicates that at peak times the junction is at 90% of its operational capacity and therefore has a practical reserve capacity of 10%.

The modelling established that Junction 1 has an RFC of 86.0%. Projections of future RFC's were made by applying the TII medium growth rates to background traffic flows and these are presented in Table 6.2

Table 6.2 : Projected RFCs at Junction 1

Year	RFC (%)
2020	87.9
2025	92.8
2035	99

An RFC > 90% at a traffic signal-controlled junction indicates the junction has reached capacity, with significant delays being experienced. The modelling indicates that Junction 1 can operate within capacity for the morning peak period up to 2020, but exceeds capacity prior to 2025. These results are the same with and without the proposed development.

The traffic modelling conclusion is that the proposed development will have a slight negative impact on the surrounding roads network if the deliveries and consignments occur at the peak hours. Scheduling the HGV movements associated with the development to outside the peak periods could result in a slight a positive impact on the junction capacity.

6.9 Residual Impacts

Given the low level of traffic generated by the proposed development and the ability to schedule the waste deliveries and consignments to outside peak traffic periods the development will have an on-going, slight, negative impact on the traffic flows, but could have an on-going slight, positive impact on junction capacity.

7 SOILS & GEOLOGY

7.1 Introduction

This Chapter describes the soils and bedrock conditions at the facility and the impacts the proposed development will have on the receiving environment within the site boundary, including a 'do nothing' scenario. It identifies the prevention and mitigation measures that are and will be implemented to reduce the significance of the impacts and assesses the residual effects.

7.2 Methodology

The assessment took into consideration the Institute of Geologists of Ireland (IGI) 'Guidelines for the Preparation of Soils Geology and Hydrogeology Chapters of Environmental Impact Statements' (2013) and the EPA guidelines described in the Introduction.

As the proposed development does not involve any significant ground disturbance, other than excavations for foundations and the new floor for the main extension, a site investigation was not required. A desk study was completed based on a review of databases maintained by the Geological Survey of Ireland (GSI) and Teagasc.

7.3 Proposed Development

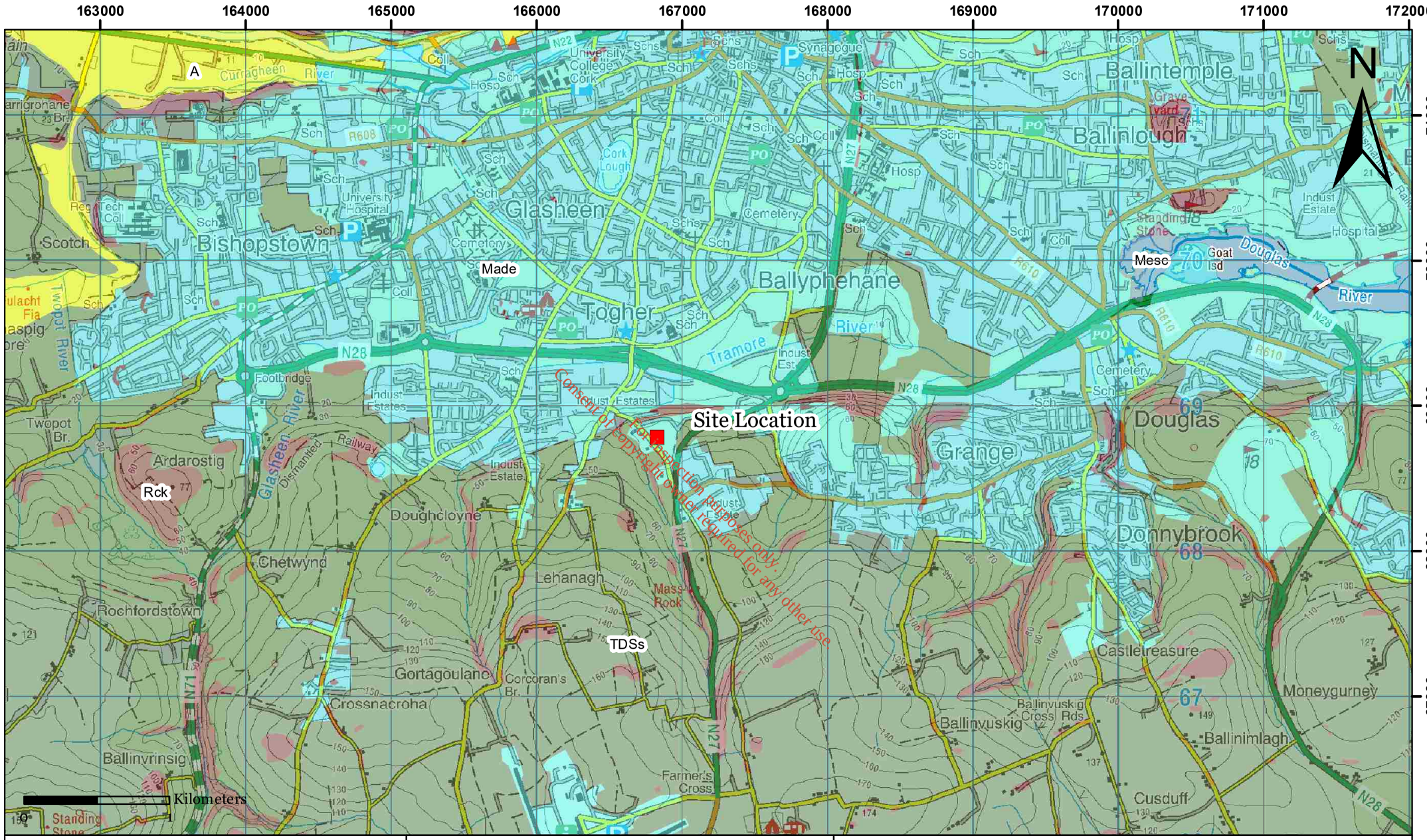
The proposed development involves the construction of a two new extensions (1468m^2 and 140m^2 respectively) to the existing waste processing building and paving of an open area (ca. 450m^2) in the east of the site.

In the operational phase, waste acceptance and processing will be carried out inside the buildings. With the exception of baled metal waste and an enclosed trailer used to transfer non-recyclable residual wastes, all waste storage will be inside the processing building. There will be no new point emission points to the ground. A small (1000 litre) diesel storage tank will be installed in bund on a paved area in the south-east corner of the site. The tank will be provided with secondary containment and will be used as a back-up to the normal method of refuelling the mobile plant.

7.4 Receiving Environment

7.4.2 Soils

The soil distribution is shown on Figure 7.1. The GSI information indicates the site is underlain by made ground.



O'Callaghan Moran & Associates,
Unit 15 Melbourne Business Park,
Model Farm Road, Cork.
Tel. (021) 4345366
email: info@ocallaghanmoran.com
Environmental Management for Business

CLIENT
Forge Hill Recycling Ltd.

TITLE
Subsoils

Details:
- Site Location
- A - Alluvium undifferentiated
- Made - Made Ground
- Mesc-Estuarine sediments (silts/clays)
- Rck - Bedrock at surface
- TDSs - Sandstone till (Devonian)

Figure 7.1

It is probable, based on the soils classification of the surrounding lands, that the made ground is underlain by Devonian sandstone derived till. The available information (GSI vulnerability rating) indicates that the subsoil is less than 3m thick.

7.4.3 Bedrock

The GSI bedrock map (Figure 7.2) shows the site to be underlain by the Gyleen Formation, which comprises sandstones, mudstones and siltstone.

7.5 Impacts

The development involves the excavation of the soils and subsoils for the foundations, and formation level for the floor (300mm below ground level) of the main extension. The excavated soil will be removed from the site.

In the construction stage there will be the potential for spills/leaks to occur when refuelling vehicles and mobile plant that could impact the exposed subsoils. In the operational stage there will be no direct or indirect emissions to ground, but there is the potential for accidental oil leaks from the mobile plant and oil storage tank and the generation of contaminated firewater run-off in the event of a fire.

7.6 Do Nothing Scenario

If the proposed development does not proceed FHR will continue to operate and there will be no direct impact on the soils associated with the construction of the new building.

7.7 Prevention and Mitigation Measures

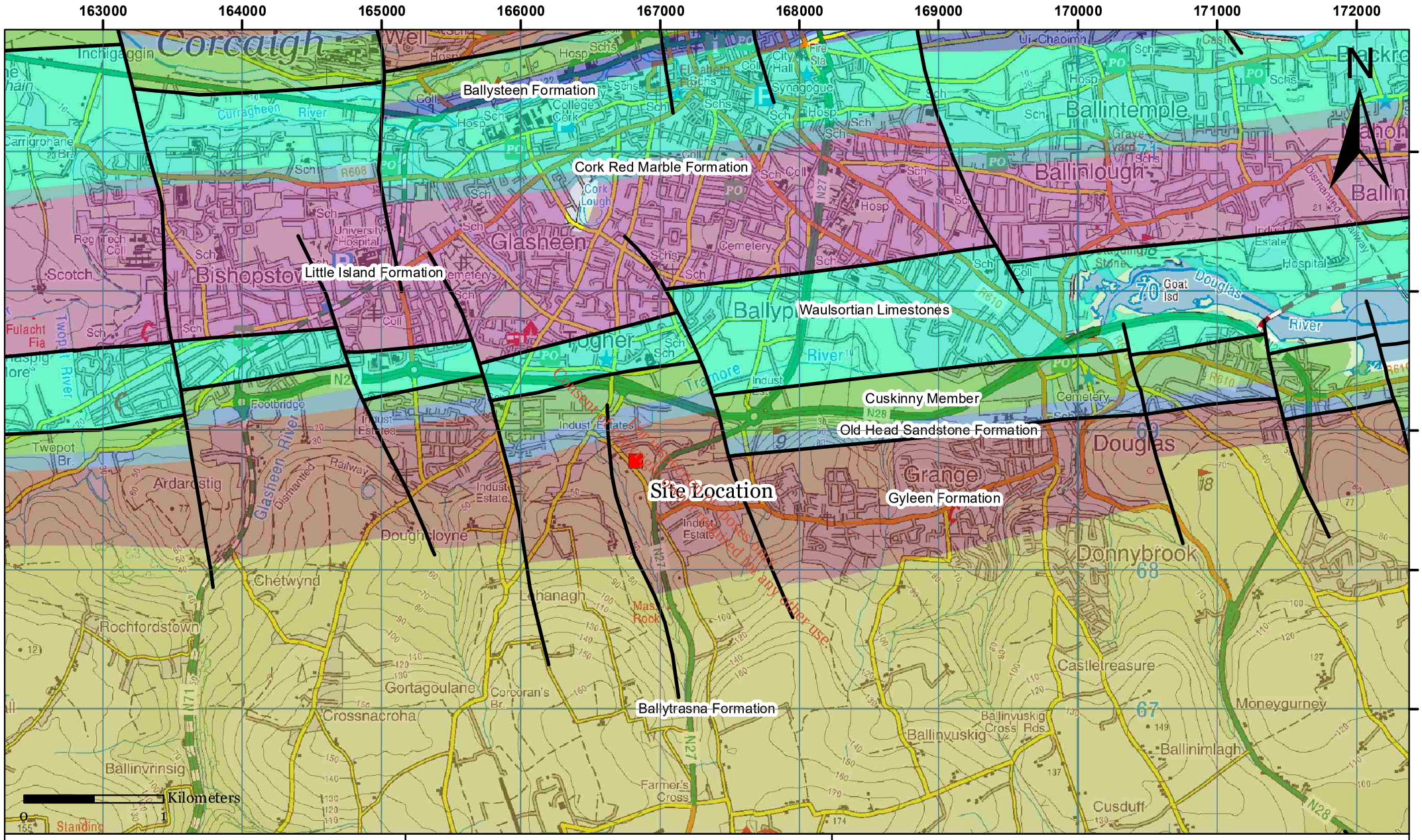
The following measures will be implemented during construction stage:

- A Construction Environmental Management Plan will be prepared that will include all of the construction mitigation measures set out in this EIAR and any additional measures required by the conditions attached to planning permission;

- Site managers, foremen and operatives, including all subcontractors, will be trained in identifying pollution risks and the appropriate preventative measures;

- The working area will be clearly delineated prior to the commencement of works and will be kept to the minimum necessary to effectively complete the works. All equipment and machinery will be checked regularly for oil leaks, and

- All site personnel will be trained and aware of the appropriate action in the event of an emergency, such as the spillage of potentially polluting substances.



O'Callaghan Moran & Associates,
Unit 15 Melbourne Business Park,
Model Farm Road, Cork.
Tel. (021) 4345366
email: info@ocallaghanmoran.com
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CLIENT

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TITLE

Bedrock Geology

Details:

- Site Location
- Faults
- Ballysteen Formation-Dark muddy limestone, shale
- Ballytrasna Formation-Purple mudstone & sandstone
- Cork Red Marble Formation-Red brecciated calcilutite limestone
- Cuskinny Member-Flaser-bedded sandstone & minor mudstone
- Gyleen Formation-Sandstone with mudstone & siltstone
- Little Island Formation-Massive and crinoidal fine limestone
- Old Head Sandstone Formation-Flaser-bedded sandstone & mudstone
- Waulsortian Limestones- Massive unbedded lime-mudstone

Figure 7.2

The current operational prevention and mitigation measures required by the EPA licence and those proposed include:

- The inspection and repair as required of the paved areas;
- The routine inspection and survey of the surface water drainage system;
- Provision and maintenance of spill containment and clean up equipment;
- Provision of bunded pallets for the drums of lubricating and hydraulic oils;
- Provision of a bund for the new diesel storage tank;
- The adoption of an emergency response procedure and staff training on appropriate incidents and emergency response actions, and
- FHR have completed a firewater retention assessment of the proposed development to determine the available storage capacity for contaminated firewater generated in the response to a fire. The assessment concluded that the retention capacity will exceed the volume of firewater arising.

7.8 Assessment of Impacts

The proposed development will involve ground disturbance and the removal of subsoils from the site. Once the construction stage is completed practically the entire site will be paved and occupied by buildings that will prevent infiltration of contaminants from the ground surface to the soils and underlying bedrock.

There are no direct or indirect emissions to ground and the proposed development will not give rise to any new discharges.

7.9 Residual Impacts

The proposed development, in conjunction with current operations, will have a permanent slight, negative impact on soils, but no impact on the bedrock.

8 WATER

8.1 Introduction

This Chapter describes the surface water and the groundwater conditions at the site and the impacts that the proposed development may have on the receiving environment within and outside the site boundary, including a 'do nothing' scenario. It identifies the prevention and mitigation measures that are and will be implemented to reduce the significance of the impacts, and assesses the residual effects.

8.2 Methodology

The assessment of surface waters was based on a review of the South Western River Basin District (SWRBD) Management Plan and databases maintained by the EPA, the National Parks and Wildlife Service (NPWS) and the Office of Public Works (OPW); information contained in the EPA licence application[3], and the results of monitoring carried out by FHR in accordance with the EPA licence requirements.

The assessment of groundwater was based on a review of SWRBD Plan and databases maintained by the GSI, Teagasc and the EPA and the results of groundwater monitoring carried out by FHR.

8.3 Proposed Development

The proposed development involves the construction of a two new extensions to the existing waste processing building and the paving of an open area in the east of the site.

All waste acceptance and processing will continue to be carried out inside the buildings. An enclosed trailer used to transport the non-recyclable residual wastes and baled metal will be stored outside the building. There will be no new point emission points to the ground/groundwater. The surface water drains within the footprint of the main extension will be sealed. A small (1000 litre) diesel storage tank will be installed on a paved area in a bund in the south-east of the site.

The changes will not generate a new process wastewater and there will be no new point emission points to groundwater. Rainwater run-off from the roofs of the extensions will discharge to the surface water balance tank, while run-off from the new paved area in the east of the site will go to foul sewer.

[3] Current Licence Reg No. W0291-01

8.4 Receiving Environment

8.4.1 Surface Water

8.4.1.1 Regional Hydrology

The regional drainage pattern is shown on Figure 8.1. Forge Hill Road is in the catchment of the Tramore River (Coastal) (IE_SW_19_1717), which is designated as a Transitional Water Body (surface water in the vicinity of a river mouth that is partly saline, but which is substantially influenced by freshwater flows).

The SWRBD Plan contains reports on the 'Status' of each Water Body. Status means the condition of a watercourse and is defined by its ecological and chemical status, whichever is worse. Waters are ranked in one of five status classes, High, Good, Moderate, Poor and Bad.

The EU Water Framework Directive (WFD) requires measures to be implemented to ensure waters achieve at least 'Good Status' by 2021, and that their current status does not deteriorate. Where necessary, for example in heavily impacted or modified watercourses, extended deadlines (2027) have been set for achieving the following objectives:-

- Prevent Deterioration
- Restore Good Status
- Reduce Chemical Pollution
- Achieve Protected Areas Objectives

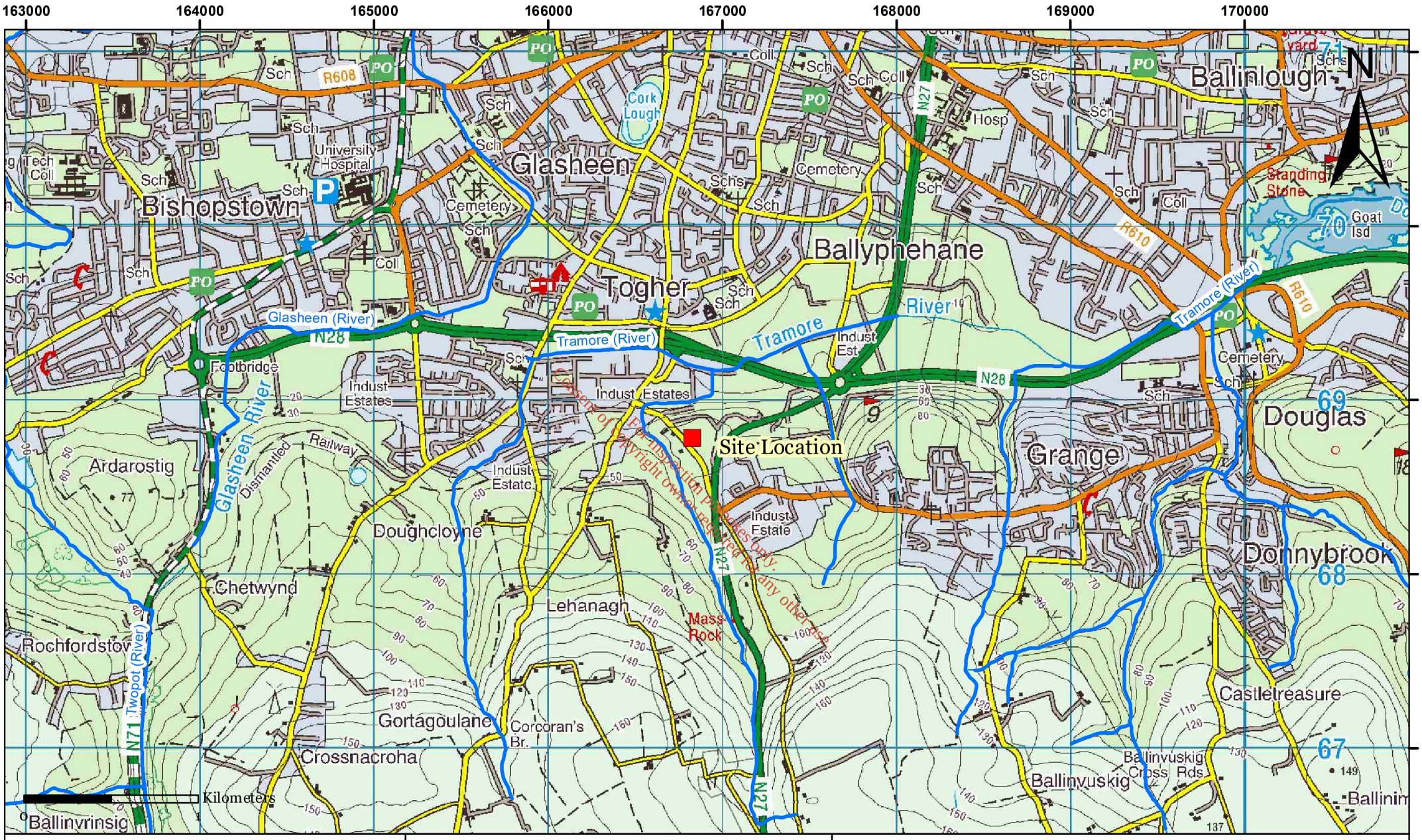
The objectives for particular watercourses are based on 'Pressure and Impact Assessments' of point and diffuse emissions, land use (e.g. peat harvesting, quarrying, industrial and residential use) and morphological conditions (e.g. river depth and width, structure and substrate of river bed) to identify those Water Bodies that are 'At Risk' of failing to meet the WFD objectives.

'At Risk' does not necessarily mean that the Water Bodies have already been adversely impacted, but that there is a likelihood that one will fail to meet its objectives unless appropriate management action is taken.

The Tramore River (Coastal) Water Body is ranked as being of 'Moderate' Status based on Macroinvertebrate and Overall ecological status. The 'General' physio-chemical status of the water body is also 'Moderate'. A copy of the Surface Water Body Status Report is in Appendix 8.

8.4.1.2 Local Hydrology

There are no surface water features either on, or immediately adjacent to the site. The facility is in the catchment of a small stream to the west of the site, which is a tributary of the Tramore River (Figure 8.2). The stream rises approximately 2 km south of the site, at an elevation of 140m OD.



O'Callaghan Moran & Associates,
Unit 15 Melbourne Business Park,
Model Farm Road, Cork.
Tel. (021) 4345366
email: info@ocallaghanmoran.com

CLIENT
Forge Hill Recycling Ltd.

TITLE
Hydrology

Details:
- Site Location
- Rivers

Figure 8.1

It flows north and passes approximately 140 m to the west of the site and enters the Tramore River, approximately 370 m north of the facility. The Tramore River enters a tidal basin called the Douglas River that subsequently flows into Lough Mahon.

Figure 8.2 : Local Drainage Pattern

8.4.1.3 Site Drainage Systems

With the exception of a small gravelled area around the side and rear of the offices, the area of disturbed ground in the east of the site and narrow landscape strips along the north-eastern boundary and the front of the office, the entire site is either paved or covered with buildings. As described in Sections 4.7 and 4.8 there are three separate surface water drainage.

Rainwater run-off from the building roofs discharges directly to a flow balancing tank in the west of the site. Run-off from the open yards, where contamination is unlikely to occur, is passed through an oil interceptor before it enters the balance tank. The water from the balance tank is piped to the tributary stream of the Tramore River, which is to the west of the site.

Rainwater run-off from the paved areas, where there is the potential for contamination to occur, discharges to the foul sewer via a second oil interceptor. Rainfall on the unpaved areas percolates to ground.

8.4.1.4 Surface Water Quality

The EPA licence requires a weekly assessment of the quality of surface water discharging from the site. This includes monitoring for 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 results of the monitoring carried out between August 2017 and April 2018 are in Appendix 8. 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.

8.4.2 Groundwater

8.4.2.1 Aquifer Classification

The available information indicates that the subsoils at the site are not significantly water bearing. The bedrock aquifer is classified by the GSI as a locally important aquifer, which is only moderately productive in local zones (Ll) (Figure 8.2). A search of the GSI groundwater abstraction well database identified the closest well to the site is ca 200m to the north-east. This well was drilled in 1968 and is reported as being 71.6 m deep, with a poor yield (21.8 m^3/day) and is used for industrial supply.

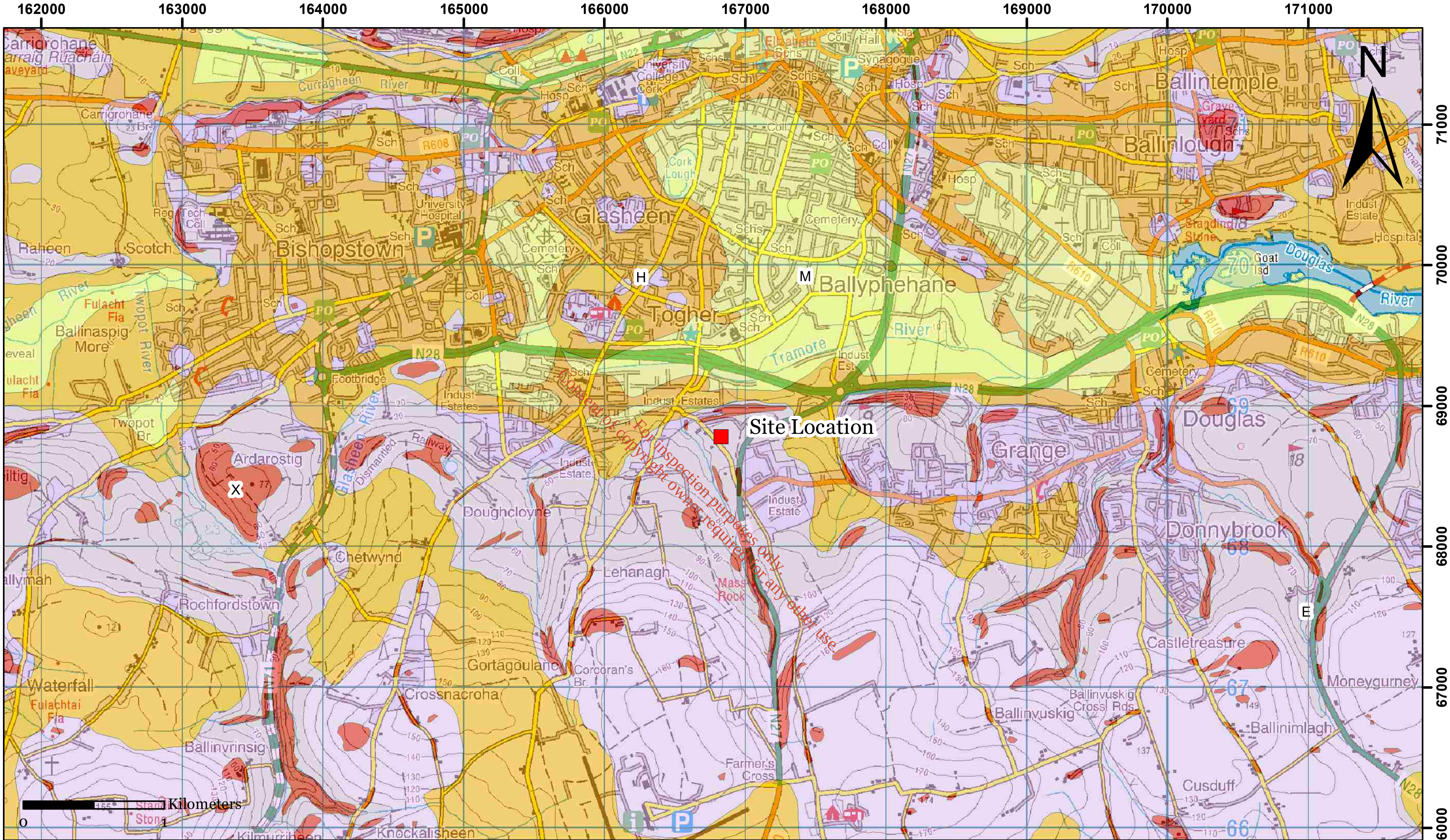
The main hydrogeological controls on groundwater recharge are subsoil permeability, subsoil thickness, saturated soils and the ability of the underlying aquifer to accept percolating water. The effective rainfall is 784 mm/year and the GSI database indicates an average groundwater recharge of 20% (159 mm/year) in the vicinity of the site.

8.4.2.2 Aquifer Vulnerability

Aquifer vulnerability is defined by the GSI as the intrinsic geological and hydrogeological characteristics that determine the ease with which groundwater may be contaminated by human activities. Vulnerability categories range from Extreme to High to Moderate to Low and are dependent on the nature and thickness of subsoils above the water table. The aquifer vulnerability map (Figure 8.3) indicates Extreme Vulnerability (E).

8.4.2.3 Groundwater Flow Direction

Based on the topography, the local direction of groundwater flow is considered to be towards the unnamed stream to the west and north of the site. There is one on site groundwater well, which is in the eastern section of the site, as shown on. This well appears, based on the topography, to be either up or side gradient of the operational areas.



O'Callaghan Moran & Associates,
Unit 15 Melbourne Business Park,
Model Farm Road, Cork.
Tel. (021) 4345366
email: info@ocallaghanmoran.com

Environmental Management for Business

CLIENT
Forge Hill Recycling Ltd.

TITLE
Groundwater Vulnerability

Details:

- Site Location
- Bedrock near Surface
- Extreme
- High
- Moderate
- Low

Figure 8.3

8.4.2.4 Groundwater Quality

The groundwater body (GWB) beneath the site is part of the CorkCity_3 Groundwater Body (IE_SW_G_032). The GWB Report, which is in Appendix 9, indicates the status of the water body is 'Good', with the overall objective to 'Protect' the status.

The EPA Licence requires biannual monitoring of groundwater quality in the one on-site monitoring well. The results of the monitoring carried out in 2016 and 2017 are in Appendix 9. The general quality of the groundwater is good.

8.4.2.5 Flood Risk

The site is not listed in either the National Preliminary Flood Risk Assessment (PFRA) and Catchment Flood Risk Assessment and Management (CFRAM) databases, or shown on the OPW flood risk maps that identify areas susceptible to pluvial, fluvial and coastal flooding events.

8.5 Impacts

The surface water drains within the foot print of the large extension, which currently connect to the foul sewer, will be sealed. This will reduce the total volume discharged to foul sewer; however the reduction will be partially off-site by the discharge of run-off from the new paved area in the east of the site to the foul sewer. The roof water from the extensions will be directed to the surface water flow balance tank, which will result in an increase in the volume discharged to the stream. The emissions to both the foul sewer and the stream are weather dependent.

There are no current direct or indirect emissions to groundwater and the proposed development will not result in any new emissions.

In the construction stage there will be the potential for spills/leaks to occur when refuelling vehicles and mobile plant that could impact the exposed subsoils. In the operational stage there is the potential for accidental oil leaks from the mobile plant and oil storage tank, and the generation of contaminated firewater run-off in the event of a fire. The potential pathways to the stream is the surface water drainage system. The pathways to groundwater are infiltration through damaged paving and leaks from the surface water and foul drains.

8.6 Do Nothing Scenario.

If the proposed development does not proceed FHR will continue to operate and there will be no change to the impacts on surface water and groundwater.

8.7 Prevention & Mitigation Measures

The prevention and mitigation measures described in Section 7.7 also apply to the protection of surface water and groundwater. Additional measures include:

- The surface water flow balance tank to regulate the discharge rate to the receiving stream;

- Provision of shut off-valves on the surface water and foul water drainage systems that will be closed in the event of a fire to ensure all firewater run-off is retained within the site and to prevent any impact of the receiving water course and the municipal wastewater treatment plant, and

- The new diesel storage tank will be bunded and located in an area where the rainwater run-off is directed to the foul sewer via the Class I oil interceptor.

- The baled metal wastes will be stored beneath the overhang at the southern elevation of Building 4. Rain water run-off from this area discharges to the foul sewer via the oil interceptor.

8.8 Assessment of Impacts

The proposed development will result in an increase in the volume of rainwater run-off from the site discharged to the stream. As the outflow from the balance tank is regulated by pumping, the tank has the capacity to accommodate the additional volumes.

The metal cans accepted at the site may contain small amounts of residual food stuff and beverages; however most is removed during the mechanical processing. The baling effectively limits any subsequent release of any contaminants. The building overhang above the storage area will provide some protection against rainfall, and rainwater run-off from this area will discharge to the foul sewer and therefore the storage will have no impact on the quality of the surface water discharge to the stream.

The development will not will not give rise to any new direct discharge to ground and groundwater and will have no discernible impact on groundwater quality.

The areas where the extensions will be constructed are already fully paved. The area of disturbed ground in the east of the site (ca 450m^2) will be paved, which will reduce the recharge rate; however given the size of this area the paving will not have a discernible impact on the recharge of the aquifer at a regional scale.

8.9 Residual Impacts

The proposed development, in conjunction with the current operations, will have no impact on surface water and groundwater quality and will have an imperceptible, permanent, negative impact on the quantitative status of the bedrock aquifer.

9 BIODIVERSITY

9.1 Introduction

This Chapter describes the biodiversity of the site and the impacts the proposed development will have on the receiving environment within and outside the site boundary, including a 'do nothing' scenario. It identifies the prevention and mitigation measures that are and will be implemented to reduce the significance of the impacts and assesses the residual effects.

9.2 Methodology

The Convention on Biological Diversity (CBD) defines 'biological diversity' or biodiversity as 'the variability among living organisms from all sources, including *inter alia* terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are part: this includes diversity within species, between species and of ecosystems'. In this context, the assessment took into consideration ecosystems (habitats and organisms) inside and outside the site boundary.

The current site condition (Refer to Section 4.4) means that the biodiversity value is low. This, in conjunction with the nature of the proposed development, which involves relatively minor disturbance of on-site habitats and no disturbance of any off-site ecosystems, meant that an ecological survey was not required.

The assessment was based on a review of the databases maintained by the National Parks and Wildlife Service (NPWS), a review of the Third National Biodiversity Action Plan (2017 to 2021), a review of the proposed development drawings and site inspections carried out in December 2017 and April 2018.

Habitats were classified using the descriptions and codes in the Heritage Council's 'A Guide to Habitats in Ireland' (Fossitt, 2000) and 'Best Practice Guidance for Habitat Survey and Mapping' (2011).

OCM carried out a screening of the significance of the effects, if any, of the proposed changes on Natura 2000 sites within 10 km of the site to inform a decision on the need for an Appropriate Assessment. The screening concluded that the development would not have any likely significant effects on any Natura 2000 Site and therefore a Natura Impact Statement was not required. The report on the Screening is in Appendix 10.

9.3 Proposed Development

The proposed development involves the construction of two extensions (1,468m^2 and 140m^2 respectively) to the existing waste processing building and increasing the annual waste intake

from 82,000 to 100,000 tonnes. The construction of the large extension requires the demolition of the power wash hut, relocating the security fence to the eastern site boundary, the removal of a treeline that runs parallel to fence and paving the area between the existing and new fence lines.

All waste acceptance and processing will continue to be carried out inside the buildings. There will be no new point emission points to atmosphere, ground, surface water or foul sewer during the operational stage; however the total volume of rainwater run-off discharged to the stream will increase.

9.4 Receiving Environment

9.4.1 Ecosystems Inside Site Boundary

The habitats inside the boundary are shown on Figure 9.1. The buildings and yards are classified as BL3 Buildings and artificial surfaces. BL3 includes all buildings (domestic, agricultural, industrial and community) other than derelict stone buildings and ruins. It also includes areas of land that are covered with artificial surfaces (e.g. roads, car parks, pavements, runways, yards, and some tracks, paths, driveways and sports grounds. These habitats are typically not species diverse.

There is a landscaped grassed area - GA2 Amenity grassland improved- with a short line of cherry laurel (*Prunus laurocerasus*)-WS3 Ornamental non-native shrub- outside the western boundary, between the electrical substation and the northern access gates, with another grassed area (GA2) and more laurel (WS3) outside the security fence south of the southern gate.

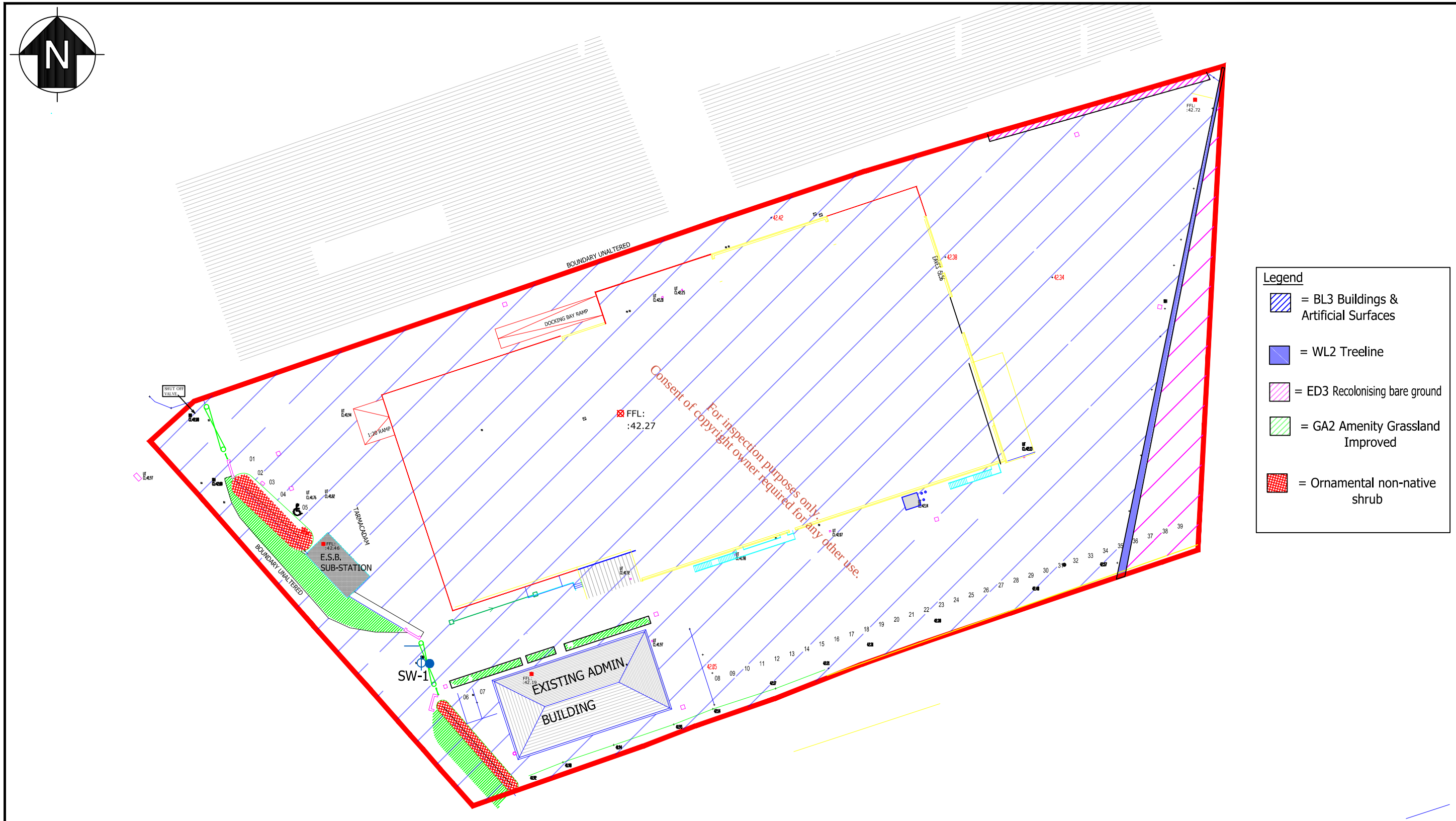
There are narrow landscape grassed strips (GA2) between the southern entrance and the electrical substation and to the front (north) of the office. A narrow landscape strip along the north-eastern boundary has not been seeded and comprises disturbed ground and is classified as ED3 Recolonising bare ground. T

The area between the boundary fence at east of the operational area and the landholding boundary (ca 450m^2) includes a fragmented linear treeline (ca 70m), along the eastern side of the fence, with disturbed ground further east. The treeline was originally on the verge of the old Kinsale Road and comprise predominantly common ash (*Fraxinus excelsior*) with ivy (*Hedera*) and bramble undergrowth. The classification is WL2 Treeline. The disturbed ground, which is the carriageway of the old Kinsale Road, is classed as ED3.

9.4.2 Ecosystems Outside Site Boundary

The site is located in an area that contains a mix of commercial and industrial operations and are classified as BL3 Buildings and artificial surfaces. There are hedgerows (WL1) and planting along both sides of Forge Hill Road, with immature trees in plantings.

To the east of the landholding boundary, between it and the N27, is a an earthen mound that is naturally recolonising (BL2) and a field that had formerly been used for agricultural purposes, but is now deteriorating to scrub (WS1).



O' Callaghan Moran & Associates.
Unit 15 Melbourne Business Park
Model Farm Road, Cork, Ireland.
Tel. (021) 4345366
email: info@ocallaghanmoran.com
environmental management for business

CLIENT

Forge Hill Recycling Ltd.

FIGURE No.

9.1

TITLE

Habitats

SCALE

NTS

REV.

A

9.4.3 Invasive Species

A small area of Japanese knotweed (*Fallopia japonica*) was identified in the south-east corner of the landholding. In 2017 FHR commissioned a specialist contractor (O'Donovan Agri) to eradicate the plants and three treatments have been carried out to date, with further treatments planned in 2018 to ensure complete eradication.

9.4.3 Fauna

Given the layout of the existing facility the likelihood of the presence of protected species within the site is very low; however there is the potential for the treeline along the eastern edge of the current operational area to serve as a roost for bats.

9.4.4 Natura 2000 Sites

The European Union (EU) Habitats Directive (92/43/EC) and the EU Birds Directive (2009/147/EC) identify designated areas (Special Areas of Conservation (SAC) and Special Protection Areas (SPA) respectively) that are collectively known as Natura 2000 Sites.

The site is not in either an SAC, or an SPA. The nearest sites that are potentially susceptible to impacts associated with the proposed development are Cork Harbour SPA (Site Code 004030) and Great Island Channel SAC (Site Code 001058), as shown on Figure 9.2. Rainwater run-off from the facility discharges to a tributary of the Tramore River, which flows into Lough Mahon, part of Cork Harbour

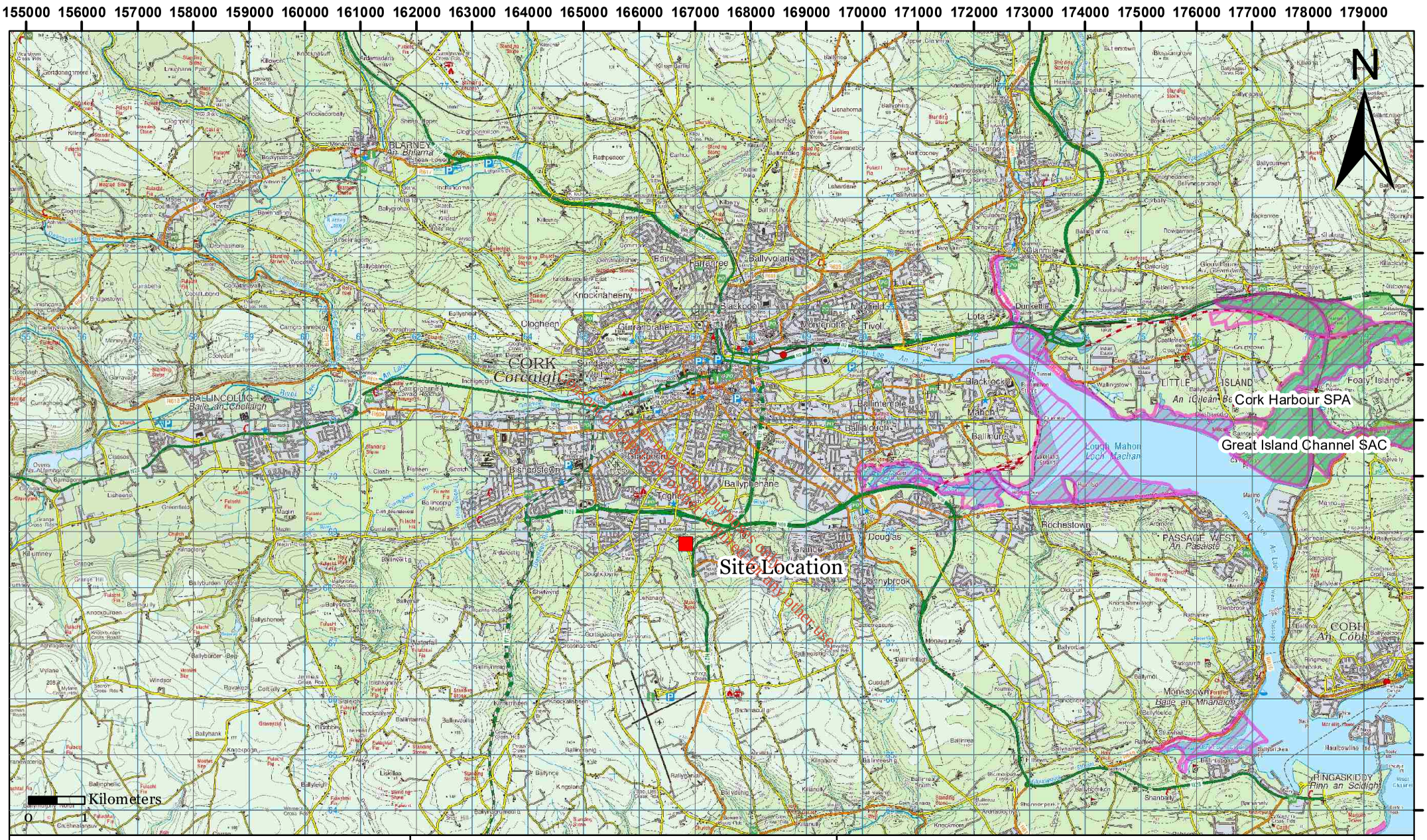
9.5 Impacts

The proposed development will involve the loss of the fragmented treeline and disturbed ground in the east of the site and the landscape strip along the north-eastern boundary. The construction works will involve the excavation of soils and general ground disturbance and there will be will be temporary noise and potentially dust emissions.

In the operational stage all waste acceptance and processing will continue to be carried out inside the buildings. There will be no new point emission points to atmosphere, ground, surface water or foul sewer. The roof water from the extensions will be directed to the surface water flow balance tank, which will result in an increase in the volume discharged to the stream.

9.6 Do Nothing Scenario

If the proposed development does not proceed, the current activities will continue with no change to the risk presented to biodiversity.



O'Callaghan Moran & Associates,
Unit 15 Melbourne Business Park,
Model Farm Road, Cork.
Tel. (021) 4345366
email: info@ocallaghanmoran.com
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CLIENT

Forge Hill Recycling Ltd.

TITLE

Natura 2000 Sites

Details:

- Site Location
- Cork Harbour SPA
- Great Island Channel SAC

Figure 9.2

9.7 Prevention & Mitigation Measures

The prevention and mitigation measures described in Sections 7.7 and 8.7 apply equally to the protection of off-site habitats. In addition care will be taken during the construction stage to prevent damage to the planting outside and parallel to the northern boundary.

Prior to the relocation of the eastern boundary fence the specialist contractor appointed to eradicate the Japanese knotweed will visit the site and advise the fencing contractor on the measures required to ensure that any soils excavated in the treated area remain in that area so that the accidental movement of the knotweed is avoided.

Prior to the removal of the treeline in the east of the site a bat survey will be conducted by an ecologist. Should bats be identified the removal of the trees will be carried out in accordance with the ecologist's recommendations.

9.8 Assessment of Impacts

The biodiversity potential of the site is low, with the exception of the treeline which has the potential to be a bat roost. The loss of the landscape strip along the north-eastern boundary and the paving of the disturbed ground in the east of the site will not have any significant impact on the site biodiversity.

In relation to the potential presence of bats in the treeline, the Habitats Regulations include provision for the protection of individual as well as breeding sites and resting places. This means that precautions must be taken to avoid the deliberate killing or injury of bats and destroying breeding and resting sites.

The commonest and most effective method of avoiding injury/disturbance to bats is to carry out the removal of potential roosts at appropriate times of the year, as the great majority of roosts are used only seasonally. In addition it may be necessary to implement compensatory measures, such as the provision of alternative roosts. If the treeline is of importance to bats the removal will be carried out in accordance with the recommendations of the bat survey referred to in Section 9.7.

The facility is not located within any designated Natura 2000 Site and therefore the development will not result in any direct habitat loss or fragmentation of a Natura 2000 Site. The closest Natura 2000 Site is approximately 3.5km to the east of the site in Cork Harbour. The operational area is extensively developed and almost entirely covered by buildings and paved areas, with the result that it does not support the species for which these Natura 2000 sites were selected.

Rainwater run-off from the building roofs and paved areas where the risk of contamination is low discharges to a tributary of the Tramore River, with the yard run-off first passing through an oil interceptor. The local direction of groundwater flow is considered to be towards the stream.

The surface and groundwater monitoring required by the EPA licence confirms that the current operation is not affecting surface water and groundwater quality and does not present a risk of pollution to the Tramore River.

The Appropriate Assessment Screening for the proposed development concludes that the development does not present a significant risks to the Cork Harbour SPA and the Great Island SAC.

9.9 Residual Impacts

The proposed development will have an imperceptible, permanent, neutral impact on the habitats within the site, will not give rise to any impacts on habitats outside the boundary and will have no significant effects on a Natura 2000 Site

10 AIR

10.1 Introduction

This Chapter describes the ambient air quality and the impacts the proposed development will have on the receiving environment within and outside the site boundary, including a 'do nothing' scenario. It identifies the prevention and mitigation measures that are and will be implemented to reduce the significance of the impacts and assesses the residual effects.

10.2 Methodology

The assessment was based on information derived from ambient air quality databases maintained by the EPA and the dust deposition monitoring carried out by FHR. The latter is done using Bergerhoff gauges specified in the German Engineering Institute VDI 2119 document entitled "Measurement of Dustfall Using the Bergerhoff Instrument (Standard Method).

10.3 Proposed Development

The proposed development involves increasing the annual waste acceptance rates, but there will be no change to either the types of waste accepted, or the method of processing. The increase in the waste intake requires the construction of two extensions to the existing waste processing building. In the operational stage all waste acceptance and processing will continue to be carried out inside the buildings.

10.4 Receiving Environment

The facility is on the eastern side of Forge Hill Road, which connects with the N27 Airport Road. The surrounding land use is primarily commercial, with the lands to the north and south comprising industrial estates/business parks and other commercial developments on the western side to the road. To the east is a field now in scrubland with the N27 further east. The closest residential properties are approximately 80m to the north-west and 120m to the east, with a larger residential estate 270m to the west.

10.4.1 Ambient Air Quality

Under the Clean Air for Europe Directive, EU member states must designate "Zones" for the purpose of managing air quality. For Ireland, four zones were defined in the Air Quality Standards Regulations (2011). The zones were amended on 1 January 2013 to take account of population counts from the 2011 CSO Census and to align with the coal restricted areas in the 2012 Regulations (S.I. No. 326 of 2012). Cork City is in Zone B.

The EPA monitoring station at the South Link Road is the nearest ambient air monitoring point to FHR site where the EPA carries out continuous monitoring for nitrogen dioxide (NO_2), sulphur dioxide (SO_2), carbon monoxide (CO), ozone (O_3) and particulates (PM_{10}). The results of the SO_2, NO_2 and O_3 monitoring carried out between the 31st March and 6th April 2018 are shown on Figures 10.1 and 10.2[4] .

Figure 10.1 : O_3, SO_2 and NO_2 Monitoring Results

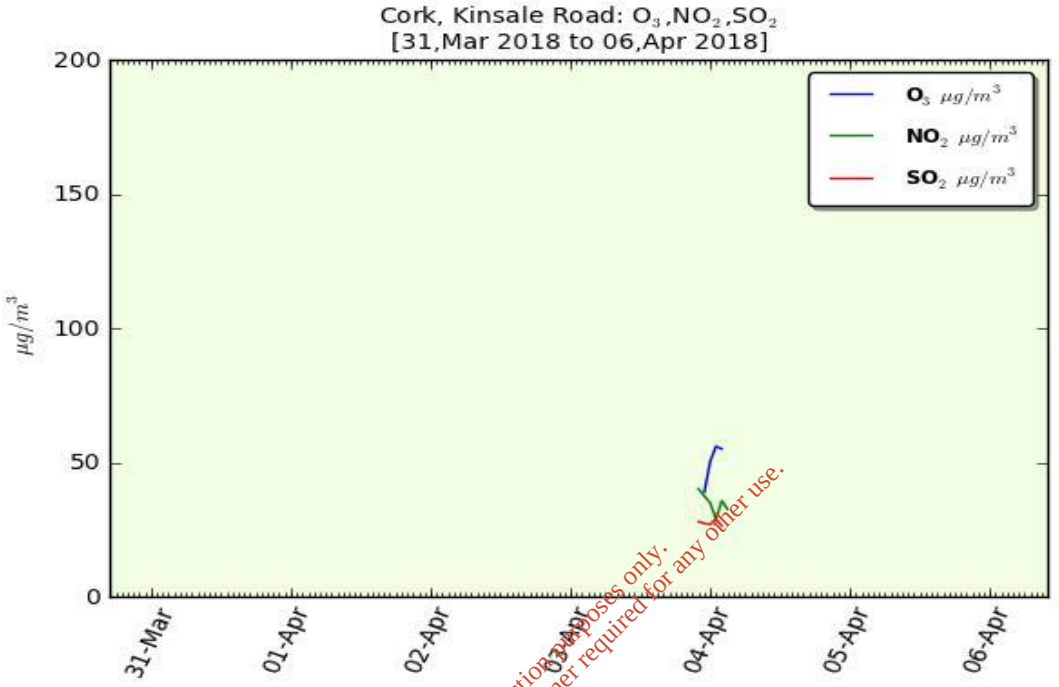
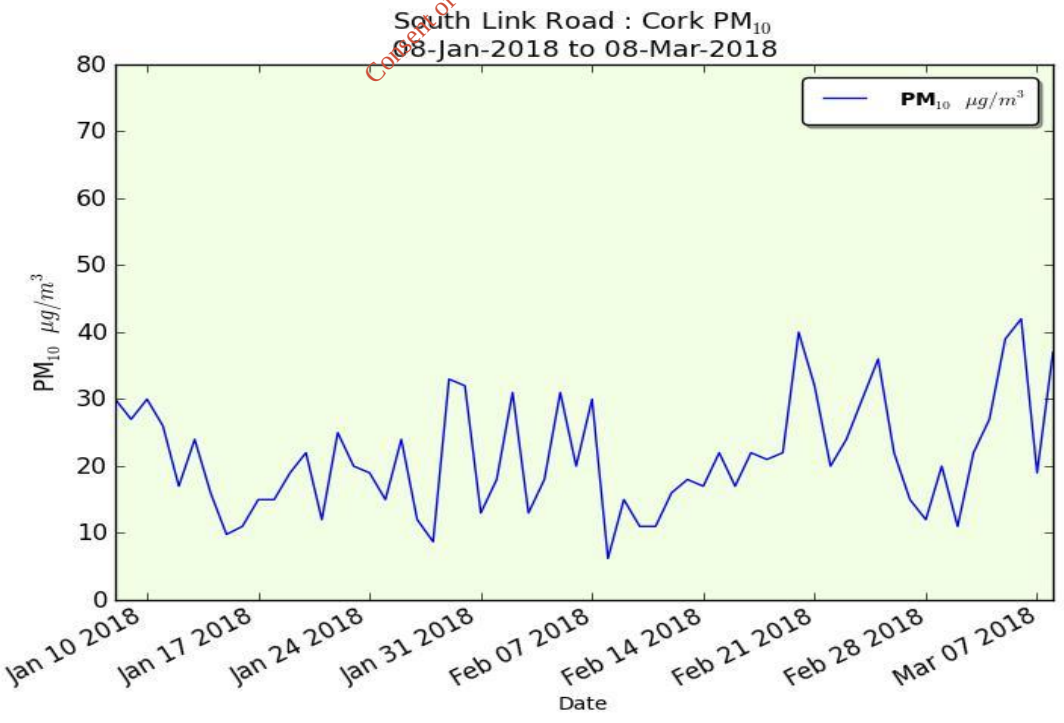


Figure 10.2 PM10 Monitoring Results



[4] Derived from EPA website

The results were all well below the relevant hourly limits, which are 200ug/m^3 for NO_2, 350ug/m^3 for SO_2 and 180mg/m^3 for O^3 and the daily limit of 50ug/m^3 for PM_{10}.

The EPA licence requires FHR to carry out dust deposition monitoring at four locations (D-1, D-2, D-3 and D-4) four times annually. D-1 is on the southern boundary to the south of the weighbridge and main entrance, D-2 is on the western boundary of the, D-3 is on the northern boundary and D-4 is on the eastern boundary.

The results of the monitoring carried out in 2017 are in Table 10.1, which also includes the dust deposition limit (350 mg/m^2/day) specified in the EPA licence. The Air Pollution Act 1987 recognises that dust in certain concentrations can cause nuisance and can be injurious to public health, impact on ecology and generally interfere with amenities or the environment. While there are no statutory limits for dust deposition, the EPA typically sets a limit of 350 mg/m^2/d as an allowable limit for dust deposition.

The result for D-3 (4,757 mg/m^2/day) in Q1 exceeded the dust deposition limit, however, the inorganic particulate faction of the sample, which is representative of site activities was 116 mg/m^2/day and below the limit. The sample was impacted by the presence of vegetative growth (leaves, algae, etc.), which was not derived from site activities.

Table 10.1 Dust Monitoring Results 2017

	Q1 mg/m^2/day	Q2 mg/m^2/day	Q3 mg/m^2/day	Q4 mg/m^2/day	Deposition Limit mg/m^2/day
D-1	237	237	153	57	350
D-2	119	119	282	103	350
D-3	4,757	-	296	103	350
D-4	57	98	231	326	350

The monitoring results indicate that the operations are not a significant source dust emissions.

10.5 Impacts

Emissions from construction works with the potential to impact on air quality include dusts and vehicle/mobile plant exhausts. Dust emissions are dependent on the weather conditions, while vehicle/mobile plant exhausts only occur when the engines are running.

Emissions from the waste processing with the potential to adversely impact on air quality include, depending on the nature of the waste, odours, dust and vehicle/mobile exhaust gases. There is also the potentail for odour emissions form the waste when it is being stored.

10.6 Do Nothing Scenario

If the proposed development does not proceed FHR will continue to operate and there will be no changes to the impacts on air quality.

10.7 Prevention & Mitigation Measures

10.7.1 Construction Stage

The following measures will be implemented during construction stage:

- The Construction Environmental Management Plan will include all of the mitigation measures set out in this EIAR, including dust prevention and control and any additional measures required by the conditions attached to planning permission, and

- Site managers, foremen and operatives, including all subcontractors, will be trained in identifying air pollution risks and the appropriate preventative measures to be taken.

10.7.1 Operational Stage

FHR implements the control measures specified in the EPA licence that are designed to ensure waste activities do not give rise either to adverse impacts on air quality, or nuisance and impairment of amenity outside the site boundary.

All waste reception, processing and storage will, with the exception of the external storage of baled metal wastes and the residual waste trailer, continue to be carried out inside the waste processing building. The roller shutter doors are typically only opened to allow vehicles to enter and exit the building. The building floors and the paved open yards are regularly cleaned using the FHR's mechanical road sweeper.

The HGVs that deliver the wastes are typically fitted with Selective Catalytic Reduction (SCR) systems. A diesel exhaust fuel (AdBlue) is used in the SCR to reduce the nitrous oxide levels in the exhaust gases. It is FHR policy not to allow engine idling.

10.8 Assessment of Impacts

FHR only accepts dry recyclables predominantly from source segregated collections; however a level of contamination with organic/putrescible matter is unavoidable and this gives rise to odours that have the potential to be a cause of nuisance at off-site sensitive receptors.

In 2016 FHR commissioned consultants SLR to complete an odour impact assessment as part of the application for the EPA licence. The assessment included all potentially sensitive receptors, both commercial and industrial, within 250m of the site. The assessment concluded that the potential risk of effects at all of the receptor locations was negligible primarily due to the nature of waste received and the enclosed nature of the building. The assessment findings are relevant to the proposed development and a copy of the SLR report is in Appendix 11.

The potential for dust to be emitted during construction works depends on the type of activity being carried out in conjunction with ambient conditions, including rainfall, wind speed, wind direction and on the distance to potentially sensitive locations. Most of the dust generated is deposited close to the source and any impacts are typically within 100m of the construction area.

The EPA monitoring has established that the air quality in the area is generally good. There will be additional vehicle exhaust emissions associated with the increased traffic; however traffic associated with FHR's activities contributes just over 1% to the overall traffic in the area and the additional movements (1 HGV movement during peak period) will not have any discernible impact of local air quality.

The external storage of the baled metal wastes and residual waste on the enclosed trailer will not be a source of air emissions, apart from exhaust gases from the plant used to move them to the storage area and load them onto the transport vehicles.

10.9 Residual Impacts

The proposed development will, in conjunction with the current waste activities, have an on-going, imperceptible, negative impact on air quality.

11 NOISE

11.1 Introduction

This Chapter describes the existing noise sources and the impacts the proposed development may have on the receiving environment within and outside the facility boundary, including a 'do nothing' scenario. It identifies the prevention and mitigation measures that are and will be implemented to reduce the significance of the impacts and assesses the residual effects.

11.2 Methodology

The assessment was based on the findings of an ambient noise survey carried out at the facility in November 2017 by Damian Brosnan Acoustics (dBA). This report, which includes details of the methodology applied, the weather conditions at the time of the survey and the full set of monitoring results is in Appendix 12.

11.3 Proposed Development

The proposed development involves increasing the annual waste acceptance rates but there will be no alteration to the method of processing. While the processing line will normally run for 18 hours daily (06.00 to 00.00) it may on occasion be necessary to operate for 24 hours. Similarly waste acceptance will normally be between 06.00 and 00.00 hours; however it may sometimes be necessary to accept and transfer waste outside these hours.

The increase in the waste intake requires the construction of two extensions to the existing waste processing building. In the operational stage all waste acceptance, processing and storage will continue to be carried out inside the buildings. The waste transport vehicles movements will be spread over the working day and will typically be outside the morning and afternoon traffic peaks.

11.4 Receiving Environment

The facility is on the eastern side of Forge Hill Road, which connects with the N27 Airport Road. The surrounding land use is primarily commercial, with the lands to the north and south comprising industrial estates/business parks and other commercial developments on the western side to the road. To the east is a field, with the N27 further east. The closest residential properties are approximately 80m to the north-west and 120m to the east, with a large residential estate 270m to west.

11.4.1 Ambient Noise Levels

The EPA licence requires annual daytime, evening and night-time noise monitoring and also specifies noise emission limits for off-site sensitive receptors. The most recent monitoring was carried out in November 2017 at the four boundary (N1, N2, N3 and N4) and three off-site (NSL1, NSL2 and NSL3) stations listed in the EPA licence and shown on Figure 11.1.

Figure 11.1 Noise Monitoring Locations

N1 and N2, are at the western boundary adjacent to Forge Hill Road, while N3 and N4 are the eastern side of the site. The three off-site stations are on Forge Hill Road (NSL1), adjacent to the N27 (NSL2), and at a residential estate to the south-west (NSL3).

Operations were underway throughout the daytime and evening monitoring periods. Night time operations ceased at 00.00, although limited site clean-up and maintenance activities occurred after that. During operating periods, noise emissions arose from the following sources:

- Compressor inside the processing building in continuous operation.
- Waste processing lines in continuous operation, outside of break periods.
- Mobile plant (grab, telescopic handler, clamp truck, forklift truck) in various uses inside the processing building.
- Occasional truck movements in yard during daytime hours.

The daytime, evening and night time results are in Appendix 4 of the dBA report and are summarised below

The soundscape at N1 and N2 throughout the monitoring period was dominated by road traffic on Forge Hill Road, with distant traffic also a significant contributor. Truck movements within the site were audible at both locations. Noise from the compressor was audible at N1, and waste operations were slightly audible at N2. The highest site specific LAeq T level measured was 61 dB, attributable to a nearby truck. In the absence of truck movements, the LAeq T levels associated with the compressor and in-waste processing were markedly lower. Traffic noise intrusion prevented calculation of their contribution during daytime and evening hours. The night-time contribution attributable to FHR operations was 38 dB at both stations.

Stations N3 and N4 are at the eastern side of the site, away from Forge Hill traffic; however, they are closer to the N27, and road traffic remained continuously intrusive. Daytime levels were significantly influenced by on-site truck movements into and out of the processing building. The daytime FHR specific LAeq T levels were 55-75 dB, with the 75 dB level attributable to a truck close to the sound level meter. The absence of yard activity during evening and night-time hours resulted in low site specific LAeq T levels, all of which were below background levels. During these periods waste processing operations were slightly audible.

No site emissions were audible at any stage at the three off-site stations. The noise environment at all three was entirely dominated by road traffic, with traffic remaining significant through the night. Daytime LAeq T levels were 70 dB at NSL1 and slightly lower at NSL2. The absence of local traffic allowed daytime levels to reduce to 48 dB at NSL3 and a similar pattern was evident through the evening and into the night. The lowest noise levels recorded at any station was at NSL3 during night-time hours, when a reduction in distant traffic allowed the LAeq T level fall to 34 dB. The results confirmed that FHR was in compliance with the emission limit values set in the EPA licence.

11.5 Impacts

11.5.2 Construction Stage

The primary noise sources will be the construction plant and equipment, with secondary sources being vehicle movements associated with the delivery of construction materials.

11.5.1 Operational Stage

The sources of noise in the operational stage will be the same as those currently on-site which comprise the waste processing plant, the compressors, mobile plant and waste transport vehicles. The emissions from the compressor and the processing plant will be continuous when the wastes are being processed. Emissions from the mobile plant and waste transport vehicles will only occur when the engines are turned on and the plant and vehicles are moving.

11.6 Do Nothing Scenario

If the proposed development does not proceed FHR will continue to operate and there will be no change to the existing noise sources.

11.7 Prevention & Mitigation Measures

11.7.1 Construction Stage

Construction will be carried out in accordance with the measures specified in the Construction Environmental Management Plan. This will require the works to comply with BS 5228: Part 1: 2009 Noise and Vibration Control on Construction and Open Sites BS5228- Part 1: 2009 Code of Practice for Basic Information and Procedures for Noise Control.

The works will be carried out during the daytime period. All construction vehicles will be fitted with effective and well-maintained silencers. Operators of all mobile equipment will be instructed to avoid unnecessary revving and to limit the hours of site activities that are likely to give high noise level emissions.

11.7.1 Operational Stage

FHR implements the control measures specified in the EPA licence that are designed to ensure waste activities do not give rise to noise emissions that will be a cause of nuisance or impairment outside the facility boundary.

All waste reception, processing and storage, with the exception of the residual waste trailer and baled metals, is and will continue to be carried out inside the waste processing building. There is internal acoustic cladding on the southern and eastern walls of Building 2. The roller shutter doors are typically only opened to allow vehicles to enter and exit the buildings.

11.8 Assessment of Impacts

There will be short term daytime noise emissions during the construction stage, but these will be consistent with those arising during the development of other commercial premises in the area.

The current operations are not a source noise emissions that give rise to off-site nuisance and impairment of amenity. The only new noise emission sources will be the feed hopper and conveyor in the large extension, which will be similar to those already in operation, and the external storage of the baled metals which will involve the movement of the bales from the processing building to the storage area. This will only be carried out in daytime working hours

A noise predictive assessment completed in 2015 before waste activities began and submitted with the application to Cork County Council for a Waste Permit established that noise from the processing plant would not be audible at noise sensitive locations[5].

The noise monitoring carried out in compliance with the EPA licence requirements has confirmed that noise from waste processing is not audible at off-site sensitive locations. Therefore as emissions associated with the proposed development will be consistent with those from the current activities, they will not be a source of nuisance at off-noise sensitive locations.

11.9 Residual Impacts

The proposed development will, in conjunction with the current operations, have an on-going, imperceptible, neutral impact over its lifetime.

[5] Forge Hill Recycling Plant: Waste Permit Application Noise Assessment Report (AWN Consulting 2015)

12 LANDSCAPE & VISUAL IMPACT

12.1 Introduction

This Chapter provides an assessment of the visual impacts of the proposed development on the landscape and visual amenity, which includes a 'do nothing' scenario. It identifies the prevention and mitigation measures that are and will be implemented to reduce the significance of the impacts and assesses the residual impacts.

12.2 Methodology

The assessment was carried out in accordance with the guidelines in the document '*Landscape and Landscape Assessment, Consultation Draft of Guidelines for Planning Authorities*' published by the Department of the Environment and Local Government (June 2000). It took into consideration the policies and objectives relating to landscape in the Cork County Development Plan (2014-2020).

The objective of the assessment was to determine the magnitude and significance of the proposed development to the landscape character and visual setting. This required an evaluation of the character of the landscape, the visual receptor(s) and the scale of the change resulting from the proposed development. In considering the magnitude and significance, the following were taken into account:

- The sensitivity of the view based on public viewing points and the likely sensitivity of those views given the distance to the development site, travelling speed (if relevant), intervening vegetation and land usage;
- The quality and value of the existing landscape;
- The degree to which the development will be visible within the surrounding area, and
- Other cumulative changes in the existing landscape e.g. new road junctions.

The study area was defined by the visibility of the site and an analysis of public viewpoints. The choice of viewpoint was influenced by the presence of private residences, key vantage points and the visibility of the existing structures.

12.3 Proposed Development

The proposed development involves the construction of an extension (Building 4, 1,460 m^2) to the eastern and northern elevation of the existing processing building, which will become the new waste intake area. A new docking ramp and access door will be located at the north-west corner.

A smaller extension (140m^2) will be constructed at the south-eastern elevation of the processing building to allow for possible future reconfiguration of the processing plant. Baled metal wastes will be stored at the southern elevation of the large extension.

The proposed site layout is shown on Drawing No. 14/4347-PL-01 and Drawing No. 14/4347-PL-04 and 14/4347-PL-05 show the elevations, cross sections and contiguous roof levels. For both extensions the building eaves, apexes, construction details and external finishes will be same as the existing building.

12.4 Receiving Environment

12.4.1 Site Location

The FHR facility is in an industrial area designated as an 'Existing Built-Up Area' in the Ballincollig Carrigaline Electoral Area Local Area Plan. The surrounding land use is primarily commercial, with the lands to the north and south comprising industrial estates/business parks and other commercial developments on the western side to the road. To the east is the N27. The closest residential properties are approximately 80m to the north-west and 120m to the east.

12.4.2 Site Layout

The existing site comprises the waste processing building two storey office; an electrical substation, a power wash storage hut; two weighbridges, paved open yards and a small unpaved area..

There is a perimeter palisade security fence along the southern, eastern and northern boundary, with a 3m high block wall outside the fence along the northern boundary, and a section of 2.5m high wall along a section of the road frontage. There two access/exit points off Forge Hill Road, at the southern and northern boundaries respectively.

The waste processing building is 9.37m to the eaves and 11.84m to the apex. It is a portal steel frame structure, with brick and mass concrete walls to 3.5m and double skinned cladding to the full height and on the roof.

Drawing No. 14/4347-PL-01

Drawing No. 14/4347-PL-04

Drawing No. 14/4347-PL-05

12.4.3 Landscape

The County Development Plan defines the sensitivity of a landscape as a measure of its ability to accommodate change or intervention without suffering unacceptable effects to its character and values. In County Cork, the sensitivity of the landscape varies and falls into three broad classifications; Low, Moderate and High.

The site is an area classed as 'Low Sensitivity' which largely encompasses the county's main urban and farming areas. These areas comprise natural enclosing features (e.g. topography, vegetation) that have the capacity to absorb a range of new development.

12.4.3.1 Landscape Character

The site is not in an area designated as being of scenic or of special amenity importance.

12.4.3.2 Landscape Sensitivity

The sensitivity of the landscape is low and the facility does not either significantly interfere with the existing landscape character or eliminate a landscape value.

12.4.3.3 Visibility

The facility has an industrial appearance, given the layout, building design and the colour and nature of the materials used in the building fabric. It is visible from Forge Hill Road (Photograph 1), with viewpoints into the interior of the site at the northern and southern entrances (Photographs 2 and 3); however the wall and landscaping along the rest of the road frontage partially screens the lower sections of buildings from view (Photograph 4).

The site is visible from the business park to the south (Photograph 5), although the litter netting provides partial screening of the eastern yard. The upper section of the buildings are visible from the business park adjoining the northern boundary. The site is not visible from the east.

12.5 Impacts

The development involves the construction of modest extensions to an existing three unit warehouse type complex. The small extension to the southern elevation of the existing building and the loading dock on north-western side of the main extension will be visible from the southern and northern site entrances respectively.

12.6 Do Nothing Scenario

If the development does not proceed, the FHR facility will continue to operate in its current layout, with no change to the external appearance of the buildings.

Photograph 1 View from Western Side of Forge Hill Road Looking North, Office to the Right

Photograph 2 Northern Entrance and North Western Elevation of Process Building

Photograph 3 Southern Entrance, Offices to the Right and Processing Building to the Left

Photograph 4 Screening at Road Frontage

Photograph 5 Southern Elevations of Office and Process Building

12.7 Prevention & Mitigation Measures

Given the location and scale of the development prevention and mitigation measures, including a landscaping plan, are not required.

12.8 Assessment of Impacts

It is an objective of the County Development Plan (Objective ZU 3-7) to promote the development of industrial areas for uses that *inter alia* include waste materials treatment and recovery and transport operations. Where this is proposed in 'Existing Built-Up Areas' the plan requires the character of the surrounding area be taken into consideration.

The FHR facility is in an area already extensively developed for commercial and industrial use and is not in a location of scenic value or outstanding natural beauty. The design of the buildings, while functional, is consistent with the existing buildings and surrounding developments. The north-western docking bay of the main extension and the western elevation of the smaller extension will be visible from the site entrances.

The proposed development is not visually intrusive and does not negatively affect the local landscape character.

12.9 Residual Impacts

The proposed development will have a long term, slight, neutral, permanent impact on the existing landscape character and visual amenity.

13 POPULATION & HUMAN HEALTH

13.1 Introduction

This Chapter describes the socio-economic activity and land uses in the vicinity of the FHR facility and assesses the impacts of the proposed development on the population and human health. The assessment considered a 'do nothing' scenario and identifies the prevention and mitigation measures that are and will be implemented to reduce the significance of the impacts and assesses the residual effects.

13.2 Methodology

The assessment was based on information derived from the current Cork County Development Plan 2014-2020, the Central Statistics Office (CSO), the findings of assessments carried out as in the course of the preparation of this EIA and the results of the environmental monitoring conducted by FHR.

13.3 Proposed Development

The proposed development involves the construction of two extensions to the existing waste processing building to facilitate an increase in the annual waste acceptance rates but there will be no alteration to the method of waste handling and no additional staff will be required.

It is proposed to have the capacity to operate and accept waste 24 hours/day, 7 days a week. While the processing line will normally run for 18 hours daily (06.00 to 00.00) it may on occasion be necessary to operate for 24 hours and in addition housekeeping and maintenance works may be carried out between 00.00 and 06.00. Similarly, waste acceptance will normally be between 06.00 and 00.00 hours, but occasionally waste may be accepted and transferred outside these hours.

All waste acceptance, processing and storage will continue to be carried out inside the buildings. The waste transport vehicles movements will be spread over the working day and will typically be outside the morning and afternoon traffic peaks.

13.4 Receiving Environment

13.4.1 *Land Use*

The surrounding land use is primarily commercial, with the lands to the north and south comprising industrial estates/business parks and other commercial developments on the western side to the road.

The closest residential properties are approximately 80m to the north-west and 120m to the east, with a residential estate approximately 270m to the west.

Figure 13.1 shows an aerial view (2013) of the site and the surrounding area. The vacant lot to the south-west has been developed as a cars sales outlet.

Figure 13.1 Aerial View of Site and Surrounding Area (from Microsoft Bing Maps)

13.4.2 *Population and Labour Force*

The site is in the suburbs of Cork City. In the 2106 Census the population of Cork City and Suburbs was 208,689, an increase of slightly over 10,000 compared to the 2011 census.

The daytime working population of the city and suburbs exceeded the 100,000 mark in April 2016. Of those 60,706 resided and worked the area, with 41,433 workers travelling into the

city and suburbs to work. The majority of those who commuted into the city and suburbs came from Cork county (91%), followed by Waterford City and County (2%) and Kerry (2%). 17% (12,045) of workers who resided in the city and suburbs, travelled outside the area to their place of work.

The average unemployment rate was 12.5%, but the city had 5 unemployment' blackspots' where the unemployment rate was 32.7%.

13.5 Impacts

13.5.1 Human Health & Safety

While odours do not present a direct risk to health they can be a significant nuisance and cause of discomfort that may indirectly affect human health. An incident at the site, for example a fire, would present a risk to site staff and there is the potential, depending on the weather conditions, for smoke to affect occupants of the nearby commercial and residential properties.

13.5.2 Environmental Nuisance

In the construction stage there will be temporary noise and dust emissions. In the operational stage waste management facilities, depending on the types of waste accepted and processes carried out, are potential sources of nuisance (dust, odours noise, vermin and pests) that can significantly adversely impair the environment outside the site boundaries if they are not properly designed and operated.

13.5.3 Traffic

Traffic movement to and from waste management facilities can, depending on the size, location and capacity of the local road network, be a cause of congestion that affects local residents.

13.6 Do Nothing Scenario

If the development does not proceed, FHR will continue to operate in its current form, with no change to the impacts on the population and human health.

13.7 Prevention & Mitigation Measures

The prevention and mitigation measures described in Sections 7.7, 8.7, 10.7 and 11.7 include actions that also apply to the prevention of adverse impacts on human beings.

FHR already implements the control measures specified in the EPA licence that are designed to ensure waste activities are not a cause on odour, noise, dust and pest nuisance. All waste reception, processing and storage, with the exception of the enclosed trailer for the residual waste and the baled metals, is and will continue to be carried out inside the building. The roller shutter doors are typically only opened to allow vehicles to enter and exit the buildings. Although the wastes do not contain significant amounts of materials that are attractive to birds, vermin and insects FHR has contracted a specialist pest and vermin control contractor who visits the site regularly.

13.8 Assessment of Impact

13.8.1 Human Health

While the annual waste intake will increase there will be no change to either the types of waste accepted, or the method of processing. Odours have never been a significant source of impairment of the amenity outside the facility and the EPA has never identified odours form the site as being matter of concern.

13.8.2 Environmental Nuisances

Noise emissions from the operations have never been a source of impairment of the amenity outside the facility. The proposed development will include for occasional waste acceptance and operation 24/7. The only associated emission with the potential to affect humans is noise; however the night time noise surveys have established that site operations are not audible at the nearest noise sensitive locations.

13.8.3 Traffic

The TTA has established that the local road network and key junction have the capacity to accommodate the movement of the additional 18,000 tonnes of waste without causing congestion.

13.9 Residual Impacts

The proposed development will, in conjunction with the current waste activities, have an on-going, imperceptible, negative impact on human beings, which will continue over its operational lifetime.

14 ARCHAEOLOGY, ARCHITECTURE & CULTURAL HERITAGE

14.1 Introduction

This Chapter describes the archaeological, architectural and cultural heritage significance of the facility and its environs and assesses the impact of the proposed development including a 'do nothing' scenario, and the residual impacts.

14.2 Methodology

As the proposed development involves relatively small scale ground disturbance in an area that has already been extensively paved an archaeological field survey was not required. The assessment was based on information derived from the Records of Monuments and Places published by the Department of Arts, Heritage & Gaeltacht, information contained in the Cork County Development Plan and a site inspection.

14.3 Proposed Development

The proposed development involves the construction of two extensions, 1468m^2 and 140m^2 respectively, to the existing waste processing building; the removal of the existing concrete slab from the footprint of the main extension and excavation to ca 300mm below ground level; the demolition of the power wash hut and paving an area of undisturbed ground on what was the carriageway of the old Kinsale Road.

14.4 Receiving Environment

14.4.1 Archaeological and Historical Background

The Sites and Monuments Records Map and the Registered Monuments Manual do not contain any record of any archaeological feature within the site boundary and there are no listed monuments within 1 km of the site.

14.4.2 Architectural Heritage – Protected Structures

There is no record of any protected structure (e.g. medieval structure, church) within the site boundary.

14.4.3 Cultural Heritage

There is no record of any ritual and religious associations, riverine and estuarine sites, find spots of archaeological or heritage objects, designed landscapes, natural landscapes with cultural heritage associations, relic landscapes and folklore associations within the site boundary.

14.5 Impacts

The development requires excavation in areas that have already covered in concrete and underlain by made ground. The new paving in the east of the site will be in the footprint of the old Kinsale Road.

14.6 Do Nothing Scenario

If the development does not proceed the facility will continue to operate in its current configuration and the potential for impacts on the archaeology, architecture and cultural heritage will remain unchanged.

14.7 Prevention and Mitigation Measures

As the proposed development will have no impact on known archaeological, architectural or cultural features and highly unlikely to have any impact on any unknown feature, mitigation measures are not required.

14.8 Assessment of Impact

The proposed development will not result in any disturbance of any known archaeological, architectural or cultural feature.

14.9 Residual Impacts

The development will not have any residual impact on any known archaeological, architectural or cultural heritage features.

15 MATERIAL ASSETS / NATURAL RESOURCES

15.1 Introduction

This Chapter describes the material assets on and in the environs of the site. It identifies the potential impacts, describes the proposed prevention and mitigation measures and assesses the impacts, including residual effects. It also addresses a 'do nothing' scenario.

15.2 Methodology

The assessment was based on information derived from the current Cork County Development Plan 2014-2020, the CSO databases and information on resource consumption provided by FHR.

15.3 Proposed Development

It is proposed to increase the waste intake from 82,000 to 100,000 tonnes/year, which will require the construction of a two new extensions to the existing waste processing building. There will be no change to the types of waste accepted or the waste processing. While the processing line will normally run for 18 hours daily (06.00 to 00.00) it may on occasion be necessary to operate for 24 hours, similarly waste may occasionally be accepted outside these hours.

15.4 Receiving Environment

15.4.1 Surrounding Land Use and Amenity Value

Land use in the immediate vicinity is predominantly commercial and does not have any significant amenity value for members of the general public.

15.4.2 *Infrastructure*

The local and regional road network and the impact of the proposed development is described in Chapter 6.

15.4.3 *Socio-Economic Activity*

The site is in a designated 'Existing Built Up Area' and it is an objective of the County Development Plan to promote the development of such areas for uses that include waste materials treatment and recovery and transport operations. At present there are 42 full time employees based at the site.

15.4.4 Resource Consumption

Current operations requires energy (diesel and electricity) and water (staff welfare) consumption. The proposed increase in the amount of waste accepted will result in increased energy consumption due to the extra waste processing and vehicles transporting the waste to and from the site.

Condition 7 of the EPA licence requires FHR to carry out an energy audit to identify all practicable opportunities for energy use reduction and efficiency. FHR has commissioned this audit and the recommendations will be incorporated into the Environmental Objectives and Targets in the facility's EMS[6].

15.5 Impacts

There will be a slight increase in traffic movements and energy consumption. There will be no change to the nature of the emissions. Increasing the recycling/recovery rate will contribute to the achievement and maintenance of regional and national waste management targets. The development will contribute to maintaining employment levels at the facility.

15.6 Do Nothing Scenario

If the proposed development does not proceed, there will be no socio-economic benefit accruing to FHR. There will be no increase in traffic movements and energy consumption rates will not change.

15.7 Prevention & Mitigation Measures

FHR implements the nuisance control measures specified in the EPA licence to prevent impacts on local amenities and also applies resource consumption control measures to minimise usage. These are described in Chapter 4 Site Description, Chapter 10 Air and Chapter 11 Noise. Diesel fuelled plant engines are only turned on when wastes are being processed and FHR has a policy of not allowing engine idling.

[6] Section 4.9

15.8 Assessment of Impacts

The current operations are not a source of adverse environmental nuisance or impairment of amenities outside the site boundary and the local road network has the capacity to deal with the increase in traffic.

FHR operations have not adversely affected the existing economic activities in the surrounding area, nor have they reduced the potential for the future expansion of such activities. The proposed development will have a slight socio-economic benefit associated with maintaining local employment levels and regional waste recovery and recycling rates but will result in an increase in energy consumption. The increase in energy consumption will be partially off-set by FHR's participation in the SRF production train.

15.9 Residual Impact

The proposed development will not have any adverse impact on amenity values and socio-economic activities in the locality. It will have a slight negative impact in relation to the consumption of fossil fuels, but will have a slight positive local economic benefit in maintaining employment levels.

16 INTERACTION OF THE FOREGOING

16.1 Introduction

Earlier Chapters describe the impacts associated with the proposed development and the proposed mitigation measures. This Chapter discusses the significance of the actual and potential direct, indirect and cumulative effects of the changes due to interaction between relevant receptors, which are Population & Health, Air, Noise and Traffic. It is based on the physical and environmental impacts of the existing facility and the proposed development on the receiving environment.

16.2 Population & Health / Air / Noise

The proposed development has the potential to impact on human beings from noise, dust, and vehicle exhaust emissions. The proposed method of operation has taken account of these emissions and effective mitigation measures have been identified. These measures are described in detail in Chapters 10, 11 and 13.

16.3 Human Beings / Traffic

The proposed development will result in an increase in traffic; however the local road network and junctions have the capacity to accommodate the additional traffic movements and they will not give rise to congestion.

16.4 Climate / Traffic

The development will result in an increase in greenhouse gas emissions associated with the extra traffic movements and waste processing.

16.5 Cumulative Effects

The assessment of the impacts of the proposed development took into consideration the impacts of the existing facility. The noise and ambient air quality surveys were conducted during typical operational hours and the predictive assessments include the impacts of both the existing emissions and those associated with the proposed development.

Table 16.1 Interaction of Impacts

	Climate	Traffic	Soils & Geology	Water	Ecology	Air	Noise	Landscape	Human Beings	Heritage	Material Assets
Climate		√									
Traffic						√			√		
Soils & Geology											
Water					√						
Ecology											
Air									√		
Noise									√		
Landscape											
Human Beings											
Heritage											
Material Assets											

APPENDIX 1

APPENDIX 2

APPENDIX 3

APPENDIX 4

APPENDIX 5

APPENDIX 6

APPENDIX 7

APPENDIX 8

APPENDIX 9

APPENDIX 10

APPENDIX 11

APPENDIX 12