

M1 Business Park – Zones A & F



Environmental Impact Assessment Report Volume 1: Non-Technical Summary M1 Vida Ltd March 2024



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CLIENT REF:	GEO0003-1		SO. . 70
DEVELOPMENT	M1 BUSINESS PARK ZONES A & F,		O O A
ADDRESS	ROWANS BIG & ROWANS LITTLE, DUBLIN.		
REVISION	DATE	ORIGINATOR	REVIEWER
DRAFT FOR CLIENT	22/03/2024	TK/JB	EG
REVIEW			
FINAL	10/04/2024	TK/JB	EG
UPDATED FINAL	18/04/2024	TK/JB	EG

1. Non-Technical Summary

1.1 Preface

PECEIVED. This document is the Non-Technical Summary (NTS) of the Environmental impact Assessment Report (EIAR) addressing the development of the proposed provision of civil infrastructure to service future-planned commercial properties on the lands located on the western side of the M1 Business Park and M1 motorway, referred to as "Zone A" and "Zone F", within the townlands of Rowans Big and Rowans Little, Lusk, Co. Dublin, (hereafter referred to as the proposed development).

2. The Project

2.1 Site Location

The site is located within the townlands of Rowans Big and Rowans Little c. 5.5km northwest of the town of Lusk and c. 5.2km southwest of Balbriggan in Co. Dublin (see below). The site encompasses approximately 34 hectares and is accessed by the Bhailsigh Road (L1140), off the M1 motorway at Junction 5 as shown in Figure 2-1 below



Figure 2-1: Site Location Map

2.2 The Proposed Works

The proposed development comprises the provision of the key civil intrastructure to facilitate the future development of the lands for a logistics/warehousing development. This development will become an extension of the existing M1 Business Park at Courtlough.

The Business Park Development proposals comprises of the demolition of all existing buildings on site, provision of internal roads and services infrastructure (surface water, foul and water supply) to facilitate the future development of the lands including public lighting, utility connections (power and telecommunications) and Sustainable Drainage Systems (SuDS). Provision of new access roads from 'Bhailsigh Road' (L1140) to Zone A and Zone F and new shared cycle and pedestrian routes over the M1 motorway via the (L1140) towards the R132. Upgrades and modifications to the existing roundabout along the L1140. All ancillary landscaping, road works, boundary treatments and site development works to support the development. All future developments will be subject to their own respective planning application approvals.

The proposed Project will consist of the following:

- Demolition of a single-storey 200-square-metre (m²) house, an abandoned water storage reservoir and associated pump stations, all located on the western boundary of Zone A;
- Demolition of 13 No. existing buildings consisting of agricultural sheds, stables, warehouses and residential dwellings located in Zone F;
- Provision of civil infrastructure to service future-planned commercial properties on the lands located on the western side of the M1 Business Park and M1 motorway, referred to as Zone A and F;
- Zone A and F lands are located north and south of Bhailsigh Road (L1140), respectively, which connect to Junction 5 of the M1 Motorway and are located in the townlands of Rowan's Big and Rowan's Little;
- Preparation of indicative Masterplan for Zone A and F which contains layouts of the future planned commercial properties, consisting of mixed-use, warehousing and distribution units including associated loading bays for HGVs, service compounds, ESBN substations and parking areas to service each commercial unit site, which would be subject to individual planning permission applications;

2.3 Overview of the Operating Process

2.3.1 Site Preparation Activities

The following works will be completed prior to infill of materials to prepare the site:

The following works will be completed to prepare the site, prior to construction of the proposed development:

Stakeholder Engagement with Existing Service Providers

Stakeholder engagement with service providers and division and management of existing services at the site including;

- Civil infrastructure consisting of main access roads including pedestrian/cycle paths.
- Watermains, surface water and foul drainage networks.
- Utility services including power and telecommunications.

Security:

- Security controls such as CCTV and alarm systems as required
- A site boundary in the form of hoarding or fencing will be established around each of the Zone A and F entrances in the interim until permanent accesses are established before any significant construction activity commences in that working area. The hoarding/fencing shall be 2.4m high to provide a secure boundary to what can be a dangerous environment for those that have not received the proper training and are unfamiliar with construction operations.

Demolition of Existing Buildings

- Demolition of a single-storey 200-square-metre (m²) house, an abandoned water storage reservoir and associated pump station, all located on the western boundary of Zone A,
- Demolition of 10 No. existing agricultural sheds, stables, warehouses and unoccupied residential homes all located in Zone F.

Ecology:

• Ecological buffer zones will be implemented on site where required and along the watercourse, the Balrickard Stream (EPA Code 08B23) which is a minor tributary of the Bracken River, which transverses Zone F to ensure proposals for

development have no significant adverse impact on the habitats and species of interest.

- Terrestrial mammal pre-construction inspection for terrestrial mammals of conservation importance
- Bats Enhancement of the site with bat boxes is recommended due to the lack of roosting features in the area.
- Bats pre-construction inspection and the control of light spill during construction. A post construction assessment of lighting will be required.
- Aquatic Biodiversity Mitigation is needed in the form of control of silt and petrochemical and dust during construction. A pre-construction survey should be carried out for frogs.
- Bird Fauna Mitigation is needed in the form of timing site clearance outside bird nesting season and control of noise during construction.
- Prior to construction the appointment of an ecologist to oversee enabling works and the implementation of mitigation measures will be carried out. No works will commence on site until the ecologist submits a letter to the local council authority to state that he/she has been appointed and has developed a Construction Environmental Management Plan which includes a) Phasing of the project, b) Full details of the works programme including methodologies for all works, surface water management and watercourse and pond works c) maps containing details of mitigation measures and any invasive species on site within 30m of site works including haul routes, site compounds etc. d) approval of the instream methodologies outlined by Inland Fisheries Ireland.
- Any in stream works to be carried out in full consultation with and to the advice of Inland Fisheries Ireland and the project ecologist.
- Wintering Birds An Ecological Clerk of Works (ECoW) will be appointed to oversee the construction phase and to oversee the implementation of all mitigation including compliance with Wildlife Acts and Water Pollution Acts and ensure that biodiversity in neighbouring areas including birds will not be impacted.

Demolition of Existing Buildings

 Demolition of a single-storey 200-square-metre (m²) house, an abandoned water storage reservoir and associated pump station, all located on the western boundary of Zone A, • Demolition of 10 No. existing agricultural sheds, stables, warehouses and unoccupied residential homes all located in Zone F.

Chapter 6 Biodiversity and the attached Construction Environmental Management Plan (EMP) in **Appendix 4** provides a detailed breakdown of the ecological controls to be put in place prior to and throughout the proposed project.

2.4 Proposed Restoration & Landscaping

A Landscape Management Plan (Drawing No. 23-598-SDA-PD-DR-002) for the planning application has been prepared which is presented in **Appendix 5** of the EIAR. A Landscape Masterplan (23-598-SDA-PD-DR-001) with indicative architectural layout is also attached in **Appendix 5**. The masterplan is indicative only and would be subject to individual planning applications.

2.5 Proposed Project Programme

It is expected that the construction of the proposed development take place over two phases. It is anticipated that Phase 1 will consist of a construction period of 8 months, with Phase 2 involving a construction period of 6 months, as indicated in the indicative Figure 2-2 below. Phase 1 would entail the construction of all the services, utilities and drainage infrastructure required to service both Zone A and F in its entirety.



Figure 2 2: Indicative Construction Phasing

2.6 Site Infrastructure

The site infrastructure outlined below for the construction and operational phase, as NED. 79/08/2024 follows:

Construction Phase

The proposed site infrastructure during the construction phase is likely to include:

- Site Access
- Proposed Wheelwash.
- Surface Water Management.
- Site Plant & Equipment. •
- Site Office & Welfare Facilities •
- Site Security and Boundary Proposals.
- Refuelling (Fuel and Oil Storage) and designated refuelling area.
- Hardstanding, Inspection and Quarantine Area
- Security controls such as CCTV and alarm systems as required

Operational Phase

The proposed site infrastructure during the operational phase will include:

- Provision of civil infrastructure designed to service various mixed-use buildings consisting of 20k- to 105k-square-feet (ft²) units with the potential to combine plots should larger units be required;
- In Zone A and F, the civil infrastructure will consist of primary access roads including pedestrian/cycle paths, watermains, surface water and foul drainage networks. utility ducting for services consisting of power and telecommunications;
- The primary access roads into Zone A and F will consist of 7.5-metre-wide singlecarriageways originating from Bhailsigh Road (L1140) roundabout including segregated cycle tracks and pedestrian footpaths with associated verges;
- Upgrading of the existing Balrickard stream crossing located in Zone F in accordance with the Office of Public Works Section 50 of the Arterial Drainage Act (1945), guidelines;
- Individual access spurs will be provided from the primary access road to each of the future-planned commercial land parcels;
- Provision of pipelines and associated infrastructure for watermains to service future-planned commercial properties; and

 Provision of surface water drainage infrastructure for the access road and associated infrastructure consisting of Sustainable Urban Drainage Systems features such as attenuation ponds, raingardens, bioretention ponds, Naturebased Solutions (NBS) and conveyance networks.

The figure below displays the proposed site infrastructure during the operational phase, namely civil infrastructure to service the future-planned logistics/warehousing business park development.



Figure 2-3: Proposed Site Layout

2.7 Site Access & Transport Route

Site access has been considered for both the construction and operational phase as follows:

Construction Phase

All materials are transported to and from site via road transport using heavy goods vehicles (HGV's). The site accesses on to the L1140 Bhailsigh Road, as shown on planning application 'Site Layout & Level Overall' Drawing No: $16_{206A} - CSE - GEN - XX - DR - C - 1600$).

Material/equipment being delivered to the site from the north/south would access the site via Junction 5 off the M1 motorway turning onto the L1140 and turning into the site.

A Traffic and Transport Assessment has been completed for the proposed development which is presented in Chapter 12 of the EIAR (Volume I).

The Traffic and Transport Assessment concluded that on the busiest construction days, the site will attract/generate a total of 22 Light Vehicles (LV) trips per day (11 inbound in the morning and 11 outbound in the evening) and a total of 60 Heavy Vehicles (HV) trips per day (30 inbound and 30 outbound, spread throughout the day). It was conservatively assumed that 10 HV trips will occur during the network morning peak hour (5 inbound and 5 outbound) and 10 HV trips will occur during the evening peak hour (5 inbound and 5 outbound). All estimated LV trips were assumed to occur during the AM and PM peak hours.

The contractor will be required to implement numerous mitigation measures in relation to traffic and transportation during construction phase. For example, all trucks entering and exiting the site will be covered in tarpaulin, and all trucks exiting the site will pass through a wheel wash. A full suite of mitigation measures will be deployed and are outlined in detail within the Construction Environmental Management Plan (CEMP), **Appendix 4** of the EIAR.

Provided the mitigation measures and management procedures outlined in the Construction Environment Management Plan (CEMP), the Construction Management Plan (CMP), the Construction Traffic Management Plan (CTMP) and the Mobility Management Plan (MMP) are incorporated prior and during the construction phase, the residual impact upon the local receiving environment is predicted to be short-term in nature and slight negative in terms of magnitude.

Operational Phase

The future-planned commercial buildings are not proposed under the subject application, the potential transport impacts associated with them were considered in this assessment. The TTA provided comprehensive review of all the potential transport impacts associated with the overall development during both construction and operational phases. The construction phase assessment specifically addressed the transportation effects associated with the construction of the proposed civil infrastructure outlined in this application, while the operational phase related to the potential future transportation impacts associated with the operation of the futureplanned commercial buildings.

The analysis of the local road network has shown that both the existing and proposed upgraded junctions would operate within capacity for all assessed scenarios during both the AM and the PM peak hours even though changes to their operational capacity will be moderate. Therefore, it can be determined that the peak hour traffic effects during the operational phase of the future-planned commercial buildings will be **brief** in terms of duration – occurring only during the network peak hours and **moderate negative** in terms of magnitude. Outside the network peak hours, however, the traffic effects during the operational phase are likely to be **permanent** in terms of duration, but **not significant** in terms of magnitude.

Whilst the estimated increase in traffic over the baseline conditions is considered moderate, the proposed upgraded roundabout at the site entrance will have a *significant positive* impact in terms of quality, increasing safety for all users, and will be *permanent* in terms of duration.

The new roads extending within Zone A and Zone F sites and their associated facilities will also have a *very significant positive* and *permanent* impact on the safety and quality of all future users.

The provision of the new proposed shared active travel facility along the L1140 will improve connectivity and safety between the proposed development and the public transport facilities along R132 and will result in a *very significant positive* and *permanent* effect in terms of sustainable transport.

3. The Need for the Project

The proposed development is favourable as this area is currently undeveloped and underutilised. Development on the proposed site will be advantageous to the local economy and the local commercial sectors will benefit from a future business hub in this region.

Furthermore, lands on which the development are proposed are zoned for General employment. Future development envisaging a Business Park aligns with the zoning objectives of the area and will inevitably provide employment opportunities in a rural area.

4. Environmental Impact Assessment

Environmental Impact Assessment (EIA) is the process for anticipating the effects on the environment caused by a proposed development or project at a particular site.

The EIAR is the document which reports the results of the environmental assessment work on the project.

This NTS provides details on the Project and also summarises the findings of the EIAR.

The EIAR documents have been divided into the following three volumes for ease: MED. 79104 POR

- Volume 1: NTS;
- Volume 2: Main Report;
- Volume 3: Appendices.

5. Interaction of Environmental Aspects

The interaction of environmental aspects is a factor that occurs when the effect of one environmental aspect causes an indirect effect on another environmental aspect i.e. such as an impact on water quality then impacting local ecology.

It is an important factor which was considered in the full evaluation of the environmental impacts associated with the Project. These interactions were integrated and identified within the individual assessments in the EIAR and within Chapter 16 of volume II of the EIAR as summarised within Chapter 19 of this Volume I Report.

6. Alternatives Considered

Potential alternatives to the proposed Project was given consideration during the early stages.

6.1 "Do-Nothing" Alternative

The "do nothing" alternative involves maintaining the site in its current undeveloped state, a greenfield site.

Reasons why it was considered that the "do nothing" alternative was not a preferred option are:

- It was considered that permitting the proposed Project is supportive of the local economy, developing an appropriately zoned (Zoning Objective GE - General Employment) vacant greenfield site to a commercial business park provides future commercial resources and employment opportunities in a rural area outside of the main urban centres of the region,
- Not utilising the available capacity of the site, in an environmentally sustainable manner, is not supportive of the local economy and the local commercial sectors that would benefit from a business hub in this region. This would be considered an overall negative impact on the local community.

6.2 Alternative Locations

The consideration of alternative locations for the proposed development was conducted. It was determined that the current proposed location was most suitable to facilitate the development.

The proposed site was selected as it was deemed most appropriate for the overall development for the following reasons:

- The sites current Zoning Objective GE General Employment within Fingal Development Plan 2023-2029 and location near existing similar land use make it an ideal location.
- The sites location adjacent to the existing M1 motorway provides excellent transport routes and the road infrastructure and capacity to service the sites future development of warehouse units. The Traffic Chapter within the EIAR provides a full assessment of the existing infrastructure, proposed upgrades and assesses the impacts of the proposed development in detail.
- There are a number of existing utility service providers with infrastructure already in the area which can be connected to, to service the future warehouse development. This reduces potential environmental impacts from the proposed development and as considerable extension and rerouting of services across vast areas is not required.

6.3 Alternative Layouts, Designs, Processes

A number of site layouts have been considered as part of the project as detailed below.

6.3.1 Layout for Site A & F with buildings aligned with Gas Main and a reduced offset from the Riparian Corridor.

As presented in Figure 3-1 below (Drawing no. 20023 20220119) M1 Business Park -Site Layout Option Site A)

This layout for Site A, aligned the main estate road with the gas main. This approach was taken due to the uncertainly regarding the depth of the Gas Main prior to onsite investigations and considered the site in isolation. The brief required a mix of unit sizes with double yards for the larger units. The site layout was also developed before a full topographical survey had taken place. The units to the West were laid out with the yards to the rear of the building as per the guidance under the Fingal Development Plan.



Figure 3-1 Alternative Layout for Site A with buildings aligned with Gas Main and a reduced offset from the Riparian Corridor.

As presented in **Figure 3-2** below (Darwing no. 20023 20220119 M1 Business Park -Site Layout Option Site F

The layout for Site F takes a similar approach to that outlined for Site A above, however Site F has the added consideration of a substantial existing Riparian Corridor. We took a conservative approach to the Riparian Corridor, given the existing vegetation at the top of the bank did not allow us to determine the location of its edge with sufficient accuracy. Therefore, the Riparian Corridor was set out as a 10m offset from the drip-line of the trees that ran along the top of the bank, increasing the Riparian Corridor Width. A mixture of units was proposed, with a greater variety than those on Site A due to the smaller plots left over given the location of the Gas Main and the Riparian Corridor.



Figure 3-2: Alternative Layout for Zone F with buildings aligned with Gas Main and a reduced offset from the Riparian Corridor.

6.3.2 Layout for Site A with buildings aligned with Gas Main and Larger Scale Units

As presented in **Figure 3-3** (Drawing no. 20023 202207) M1 Business Park - Site Layout Option Site A

This layout follows on from the principles of previous scheme, however it looks at larger units with larger yards which at the time of the proposals was what the market was looking for. From an engineering perspective site attenuation is also considered together with cycle provision and service / ESB compounds.

Each of the layouts above had been proposed based on the Fingal Development Plan 2017 – 2023.



Figure 3-3: Alternate Layout Zone A aligned with Gas Main and Larger Scale Units

6.3.3 Sites to the East of the Motorway

Following the publication or the Fingal Development Plan 2023-2029 and the increase in the width of the Riparian Corridor. The proposed developments of sites C and E to the East of the motorway have been put on hold. The increased width of the Riparian Corridor reduces the developable land considerably, particularly on Site E, where the resulting units become economically unviable. The increase in the Riparian Corridor to Site C, increased the width of the crossing required and pushes the resulting building deeper into the site away from the existing building line to the North.

6.3.4 Current Indicative Masterplan Layouts

The current proposed masterplan layouts for Site A and F were undertaken following a full site survey and gas main depth survey. The layouts have been designed based on the Fingal Development Plan 2023-2029 adhering to the increased Riparian Corridor width.

The location of the road to Site A has changed to run perpendicular to the fall of the site to enable a surface which has a shallower gradient and to facilitate a potential

future connection into the sites to the North. The buildings also respect the steep fall from West to East across the site, reducing the amount of cut and fill and environmental erosion required if the yards were at the rear. The yards to the units to the West of the Site are situated in front of the buildings, contrary to the guidance in the Development Plan, but necessary due to the steep falls. To mitigate this, the proposed offices within the buildings are arranged looking into the site, creating a campus like environment.

The proposed site layout and landscape plan was deemed the preferred solution as it had the best use of the lands and likely the least environmental impact and allowed considerable establishment of the riparian corridor within Zone F.

6.4 Alternative Mitigation Measures

Alternative mitigation measures were considered. The proposed mitigation measures within each of the relevant chapters were deemed the preferred solution.

Reasons why the proposed mitigation measures were deemed the preferred solution are:

- The proposed mitigation measures have been selected based on the site specific information gathered by specialist consultants who are experts in their field.
- The selected mitigation measures represent the most reasonable, practical and effective options for avoiding, eliminating or reducing as much as possible any potential negative impact from the proposed development.

7. Appropriate Assessment

The Birds Directive (79/409/EEC) and the Habitats Directive (92/43/EEC) provide legal protection for habitats and species of European importance. Article 2 of Directive 92/43/EEC requires the maintenance or restoration of habitats and species of European Community interest, at a favourable conservation status. Articles 3 – 9 of the Directive provide the legislative means to protect habitats and species of Community interest withrough the establishment and conservation of an EU-wide network of sites known as *Natura 2000*. Natura 2000 sites are Special Areas of Conservation (SACs) designated under the Habitats Directive and also Special Protection Areas (SPAs) designated under the Conservation of Wild Birds Directive (79/409/EEC). The terms "European site" replaced the term "Natura 2000 site" under the EU Environmental Impact Assessment and Habitats Regulations 2011 (S.I. No. 473 of 2011).

A key protection mechanism is the requirement to consider the possible nature conservation implications of any plan or project on European sites. Appropriate Assessment (AA), which is outlined in Article 6(3) of Directive 92/43/EEC, is the process which considers the possible effects of a plan or project on the European sites network.

In accordance with these requirements, the proposed Project has been assessed to consider whether there are likely significant effects from the proposed Project on European sites. The Stage 1 AA Screening Statement (AASS) has concluded that a Natura Impact Statement (NIS) is required for the significant effects on the North-West Irish Sea SPA in the absence of mitigation.

Nonetheless, it has been concluded that significant effects on the North-West Irish Sea SPA are likely from the proposed works in the absence of mitigation measures, primarily as a result of direct hydrological connection to the site via dust pollution and surface water runoff to the Matt/Bracken Stream which drains the site. For this reason, the NIS was carried out to assess whether the proposed project, either alone or in combination with other plans or projects, in view of best scientific knowledge and in view of the sites' conservation objectives, will adversely affect the integrity of the European Site. All other Natura 2000 sites were screened out at initial screening.

Construction works will create localised noise disturbance that will not impact on Natura 2000 sites. Mitigation measures will be in place to ensure that there are no significant impacts on the surface water that leads to the marine environment.

Following the implementation of the mitigation measures outlined, the construction and operation of the proposed development would not be deemed to adversely affect the

integrity of the North-West Irish Sea SPA, alone in combination with other plans and CEINED. 79 projects.

8. Population and Human Health

This assessment considered the effects on human beings in relation to population, economic and human health impacts.

Fingal's population increased by more than a third (37.7%) from 2006 to 2022; a growth rate surpassing any county in Ireland. From the previous 2016 Census, the fasted growing Electoral Divisions within Fingal were Balgriffin and The Ward, where population increases were recorded at 77.8% and 37.9% over the 6 year period, respectively.

It is considered that the proposed Project is supportive of the local economy, developing a vacant greenfield site to a commercial business park provides future commercial resources and employment opportunities in a rural area outside of the main urban centres of the region. It is expected that the proposed Project will result in the development of approximately 1,300 additional jobs and higher employment rates for the area when the proposed masterplan is fully developed.

This is considered an overall positive, long-term and significant impact.

The proposed development would improve community resources and amenity in the local area and provide positive benefits with the provision of future commercial resources and employment in the area. In addition, the future commercial use of the site will allow for the relocation of certain uses in urban centres to a more suitable location, while providing

employment and resources in a rural setting. This would support the sustainability of rural communities through the development of a resilient local economy.

The development would support in building enterprise and community infrastructure to drive and expand the visitor potential of the region. This will support the development and enhancement of local amenities, resulting in increased visitor numbers and expanded sectoral employment potential.

This is considered an overall positive, long-term and significant impact.

The EIAR outlines the potential for human health effects under the specific topics that might lead to significant impacts. The topics include air quality, noise and vibration, traffic and transport and are detailed in Chapters 9, 10 and 12 of the EIAR, respectively. Each chapter addresses a suite of mitigation measures to circumvent any significant impacts on human health in the surrounding area.

9. Biodiversity

This assessment considered the potential biodiversity and ecological impacts which may be generated by the Project. It also assesses the significance of the likely impacts of the scheme on the biodiversity elements and designs mitigation measures to alleviate identified impacts. Full details of all the mitigation measures and the phasing of the project are contained in the accompanying Construction Environmental Management Plan (CEMP), which has been prepared by Clifton Scannell Emerson Associates, Consulting Engineers.

A separate AA Screening and NIS, in accordance with the requirements of Article 6(3) of the EU Habitats Directive, has been produced to identify potential impacts of the development on Natura 2000 sites, Annex species or Annex habitats.

The AA Screening and NIS concluded that:

- Significant effects on the North-West Irish Sea SPA are likely from the proposed works in the absence of mitigation measures, primarily as a result of direct hydrological connection to the site via dust pollution and surface water runoff to the Balrickard (also known as Matt/Bracken Stream) which drains the site. For this reason, an NIS was therefore carried out to assess whether the proposed project, either alone or in combination with other plans or projects, in view of best scientific knowledge and in view of the sites' conservation objectives, will adversely affect the integrity of the European Site. All other Natura 2000 sites were screened out at initial screening.
- Construction works will create localised noise disturbance that will not impact on Natura 2000 sites. Mitigation measures will be in place to ensure that there are no significant impacts on the surface water that leads to the marine environment. Following the implementation of the mitigation measures outlined, the construction and operation of the proposed development would not be deemed to adversely affect the integrity of the North-West Irish Sea SPA, alone in combination with other plans and projects. No significant adverse effects are likely on all other Natura 2000 sites, in the absence of mitigation, alone in combination with other plans and projects.

In summary, the proposed project will involve site clearance, reprofiling, the implementation of attenuation and drainage networks, in addition to building construction and landscaping. These elements will impact on biodiversity on site with potential impacts beyond the site outline within the Zone of Influence (ZOI).

As outlined in CIEEM (2018) 'The 'zone of influence' for a project is the area over which ecological features may be affected by biophysical changes as a result of the proposed project and associated activities. This is likely to extend beyond the project site, for example where there are ecological or hydrological links beyond the site boundaries.' In line with best practice guidance an initial zone of influence be set at a radius of 2km for non-linear projects (IEA, 1995).

The potential ZOI of the project in the absence of mitigation was deemed to be; within the site outline, and nearby sensitive receptors including the Balrickard Stream, Bracken River, and aquatic biodiversity downstream of the proposed works. Given the extent of the construction works, and the proximity of the Balrickard Stream and Bracken River to the subject site (traversing through a southern portion of the site), in the absence of mitigation there is the potential for dust and contaminated surface water runoff to enter the proximate watercourse and the marine environment downstream of the works.

After attenuation on-site, surface water drainage will be directed to the Bracken River. This watercourse outfalls to the North-west Irish sea SPA, which ultimately outfalls to the marine environment. As a result, there is an direct hydrological pathway from the proposed development to designated conservation sites located within the marine environment. In the case of the proposed development, the potential ZOI extends beyond the site, with the potential for downstream impacts to extend beyond the proposed development area to downstream biodiversity via the proposed construction works and the surface water/foul water networks during construction and operation.

There is one Natura 2000 site within 5km, and two proposed National conservation sites within five kilometres of the proposed development site.

Predicted Impacts - Construction Phase (in the absence of mitigation)

In the absence of mitigation, the construction of the proposed development, would impact on the existing ecology of the site and the surrounding area. These construction impacts would include impacts that may arise during the site clearance, re-profiling of the site and the building phases of the proposed development including the works proximate to the Balrickard Stream, and proximate to and within the drainage ditch.

Construction phase mitigation measures are required on site particularly as significant reprofiling of the site is proposed which will remove a portion of the existing terrestrial habitats which can lead to silt laden and contaminated runoff. In addition, demolition works can cause dust to enter the air and surface water. It is also proposed to undertake works proximate to the Balrickard Stream. There is potential for silt laden

runoff and contamination to enter both the onsite drainage ditch and Balrickard Stream RCEILED. with potential for downstream impacts.

Predicted Impacts – Operational Phase

Once constructed all onsite drainage will be connected to separate foul and surface water systems. Surface water runoff will comply with SUDS. The biodiversity value of the site would be expected to improve as the landscaping matures, particularly in the drainage ditch buffer zone. It would be expected that the ecological impacts in the long term would be positive once landscaping has established.

Impacts to habitats and species within and/or surrounding the site has been determined as insignificant.

A full suite of mitigation measures in relation to Biodiversity is outlined in Appendix 1 of this report.

Residual Impacts

It is considered that the proposed development has satisfactorily addressed the current ecology on site into its design so that application of the standard construction and operational phase controls in this EIAR and the accompanying CMP will help reduce its impact on the local ecology to an adequate level.

It is considered that, where possible, biodiversity enhancement measures have been implemented into design to enhance the overall biodiversity value of the site. The overall impact on the ecology of the proposed development will result in a long term minor adverse, not significant, residual impact on the ecology of the site and locality overall. This is primarily as a result of the loss of foraging and nesting areas for birds that were noted on site. However, it should be noted that the site is within a development zone and is surrounded by significant area of similar agricultural land. It would be expected that the birds noted on site would be displaced from within the site but not displaced locally due to the availability of similar foraging areas in close proximity to the site.

Residual Impacts: Negative/ low adverse/ not significant /long-term/ localised/likely/slight effects.

10. Soils and Geology

This assessment considered the potential impacts on soils and geology resulting from the Project.

There are no Geological Heritage Sites within the Site. There are three audited Geological Heritage Sites within 5 km of the Site. The closest site, Britonstown located c. 300m of the site. Based on the GSI bedrock map of the study area (1:100,000), the majority of the Site (almost the entire area of Zone F and the eastern side of Zone A) is underlain by micrite, calcarenite and shale of the Loughshinny Formation (LO). A central strip of the Site is underlain by the approximately north-south trending coarse sandstone and shale of the Balrickard Formation (BC). Within the northwest of Zone A, the Site is underlain by shale, sandstone and limestone of the Walshestown Formation (WL). The bedrock geology of the site is shown in the figure below.



The GSI quaternary sediments map indicates that the Site and study area is divided approximately along a north-south axis, with subsoil on the western side of the Site composed of till derived from Namurian sandstones and shales (TNSSs) and the eastern side of the Site composed of Irish Sea Till derived from Lower Palaeozoic sandstones and shales (IrSTLPSsS). The Teagasc Soils Map indicates that there are three soil types at the Site. The majority of the Site is overlain by poorly drained mineral (mainly acidic) soils (AminPD) derived from non-calcareous parent materials (sandstone and shale till). A portion of the western half of Zone A and an area close to the buildings in Zone F is overlain by deep well drained mineral (mainly acidic) soils (AminDW) derived from mainly non-calcareous parent materials (sandstone and shale till). The south-eastern corner of the Site is overlain by alluvial mineral soil derived from an undifferentiated alluvium parent material.

Additionally, There are no known areas of soil contamination on the Site. According to the EPA online mapping (https://gis.epa.ie/EPAMaps), there are no licensed waste facilities at or adjacent to the Site. The boundaries of two licensed waste site are mapped within 3 km of the Site. Clashford Recovery Facility, license number W0265-01, was mapped at its closest point c. 370 m west of the Site and operates as a Soil Recovery Facility. A licensed landfill, Murphy Environmental Hollywood Limited, is located at its closest point c. 2.6 km west of the Site (W0129-02) at the Nag's Head quarry.

Impacts to soils and geology that were considered in the EIAR during the construction and operational phase of the development. Potential impacts from the construction phase include the removal of topsoil which could lead to compaction, waterlogging, sealing, washout of fines and erosion. Additionally, materials that are stockpiled incorrectly can be exposed to erosion and weathering, which potentially reduces the quality of the resource. there is potential for unknown contamination to be encountered during excavations that might require handling, on-site transport and off-site disposal or recovery. These activities have potential to contaminate in situ topsoil or subsoil if carried out incorrectly. Lastly, a accidental spillages onsite is a potential, though unlikely impact.

In total, it is expected that 13,467 m³ of soil, subsoil or made ground will be excavated at the Site. In addition, the works will require the importation of 12,888 m³ materials including general fill, asphalt, subbase, stone and topsoil. The proposed maximum depth of topsoil and subsoil to be excavated will be approximately 0.6 m to 1.2 m for road constructions, 2.2 m for SUDs and surface water features, including attenuation and bioretention ponds and 3.5 m for pipelines and manholes, 4.5 m for foul drainage pipelines and manholes and 1.4 m for public lighting ducting, telecom and power ducting.

During the operational phase, it is assumed that the areas of soil or subsoil where civil infrastructure has been constructed at the Site will remain in non-agricultural use permanently. This will occur across a small proportion of the overall Site and is considered a minor, permanent impact. Additionally, there is potential for accidental

spillage or leakage of contaminating material during the life of the development during use or maintenance of civil infrastructure.

Numerous mitigation measures will be deployed during the construction and operational phase of the development to ensure that any potential environmental impacts are circumvented. Mitigation measures in relation to soils and geology are fully outlined in Appendix 1 of this Non-Technical Summary.

Effective implementation of the mitigation measures specified above will result in there being no significant residual impacts on land, soils and geology as a result of the construction and operation of the Proposed Development.

11. Hydrology (Flood Risk Assessment), Water Quality and Hydrogeology

This assessment considered the potential impacts that the Project may have on surface water and groundwater at and within proximity to the site during the construction, operational and restoration phases.

Regional and Local Hydrology

The Balrickard Stream, a minor tributary to the River Bracken (Matt_SC_010) flows from northwest to southeast across the Site, turning eastward within the Site to pass beneath the M1 motorway via a culvert. To the east of the motorway, the river joins the River Bracken (See Fig. 8-5), which flows northward and eastward toward Balbriggan harbour, where it enters the Irish Sea c. 5.35 km northeast of the Site. Existing agricultural open drainage ditches at the Site are mapped as predominantly west to east in orientation consistent with the topographical gradient at the Site. Zone A contains multiple agricultural open drainage ditches, two primary channels draining west-to-east, which cross underneath the M1 Motorway via existing culverts and secondary channels connecting the primary channels in a north-south direction. The southern half of Zone F is drained via existing agricultural drainage ditches, either draining to the Balrickard Stream or to the Rowans Little Stream, which flows from northwest to southeast close to the southern Site boundary. Further south, the Ballough Stream flows northwest to south-eastward, with both streams passing within 50 m of the Site's southernmost boundary.

The majority of the Site is located within the Palmerstown_SC_10 (08) sub-catchment, which is a sub-catchment of the Nanny-Delvin catchment, Hydrometric Area 08, the Eastern River Basin District. A minor portion at the southwestern corner of the Site is

located within the Ballough Stream_SC_10 (08_6) sub-catchment, within the same catchment and Hydrometric Area. There are no significant sand or gravel aquifers within the catchment.

Based on the effective rainfall and recharge rates at the Site it is assumed that there is a component of shallow and surface drainage at the Site above the low permeability clays to the agricultural drainage system and to the Balrickard Stream.

Site Investigations

Site investigations carried out to characterise the baseline hydrogeological and hydrological context of the proposed development site.

The SIL Ground Investigation Report¹ indicates that there is c. 15 m of predominantly low permeability clayey subsoils beneath the Site (with occasional gravel lenses occurring between 3.8 and 8.3 m bgl) overlain by up to 0.3 m of topsoil. Made ground was encountered at limited locations associated with slit trenches to identify existing service locations. Bedrock was not encountered during the SIL Ground Investigation which advanced two boreholes to maximum depth of 15 m bgl.

Groundwater was encountered in three trial pits in Zone A, at 1.60 m bgl (TP04) to 2.20 m bgl (TP02 and TP03) and in Zone F at 1.40 m bgl with the ingresses logged as either slow or as seepages. In the boreholes within Zone A groundwater was encountered between 1.7 m bgl and 6.6 m bgl and in Zone F between 4.20 and 4.40 m bgl.

Soil infiltration rates were assessed as part of the site investigation. At all locations the infiltration rate could not be calculated due to the low rate of infiltration caused by the low permeability of the clay subsoils.

Two groundwater wells were installed screened in the overburden at BH11 and the BH03. The locations of the boreholes are included in the figure below.



Figure 11-1 Groundwater Monitoring well locations

Baseline groundwater samples were taken by Geosyntec on 5th October 2023 from the two groundwater monitoring wells and analysed for a broad suite including metals, PAHs, VOCs, SVOCs, pesticides, TPH CWG, nitrate, ammoniacal nitrogen, hexavalent and trivalent chromium and total nitrogen. Groundwater quality was acceptable from all samples taken.

The Balrickard Stream (08B23), runs initially from northwest to southeast across Zone F, turning to flow eastward before passing beneath the M1 and joining the Bracken River as a minor tributary.

The primary groundwater flow paths in the Hynestown and Lusk-Bog of the Ring GWBs are likely to be shallow toward the Balrickard Stream to the southeast. Baseflow is predicted to discharge to the Balrickard Stream and potentially the Bracken River to the east of the M1.

Site investigations confirmed that depth to bedrock at the Site is likely to be over 15 mbgl through low permeability clays (with occasional gravel lenses between 3.8 and 8.3 mbgl). Shallow groundwater was encountered between c. 1.7 and 6.6 mbgl during site investigations and measured at c. 0.3 mbgl in monitoring wells and is likely to represent water perched above the thick clay subsoils beneath the Site or within the shallow gravel lenses. As there is a c. 15 m thickness of low permeability clay at the Site, the great majority of effective rainfall at the Site is likely to flow at or close to the surface within the

lenses in the shallow clays to the Balrickard Stream or on-Site drainage ditches and ultimately to the Bracken River. Recharge at the Site is expected to be minimal.

Sie Specific Flood Risk Assessment (SSFRA)

A SSRA was completed for the Proposed Development includes an identification of potential flood hazards to life and property at the Site to enable assessment of the Site and the Proposed Development based on the Flood Risk Framework outlined in the OPW Guidelines. The SSRA concluded that:

- Due to the Site's location, topography and underlying geology, there was not considered to be a risk of coastal flooding, urban drainage flooding, reservoir/canal or artificial source flooding or of groundwater flooding (due to the till over shale geology not being susceptible to superficial deposit flooding and site topography and bedrock geology not being of a nature that would be prone to clearwater groundwater flooding or impoundment of emergent groundwater.
- The SSRA concluded that the design of the Proposed Development would lead to no change from baseline conditions and have no impact on flood risk within the Site or elsewhere in keeping with the requirements of the OPW Guidelines. The SSRA also considered the risk under climate change scenarios (modelling of 20% increase in flood flows and / or 0.5 m increase in mean sea level, where applicable) and concluded that there was a potential a maximum increase in flood level of 0.66 m directly upstream of the M1 culvert at the south east of the Site (due to capacity issues with the larger flow) and a maximum of 0.14 m at all other points. concluded that the design of the Proposed Development would lead to little change in flood extents as a result of climate change and no new areas of out-of-bank flooding. The conclusions of the SSRA in relation to potential impacts have been incorporated where relevant to this chapter.

Flood Risk during Construction Phase: During the construction phase excavation including trenching is planned along the routes of the proposed roads, bridge, pathways, cycle routes and other civil infrastructure. It is also required for the proposed construction of SUDs features, landscaping and boundary treatments, demolition and anellary works/earthworks. Excavations have the potential to impact the hydrological and geological environment in the study area. At the Site, topsoils and subsoils will be extracted using mechanical excavators and by directional pipe jacking or directional drilling technology at the M1 crossover point.

Flood Risk during Operational Phase: Since the land-use at the Site is currently predominantly agricultural, the proposed development of road, pathway and cycle lane surfaces in the identified locations will represent a permanent change drainage and surface flow patterns at the Site.

Predicted impacts during the construction phase chiefly relate to excavation which includes trenching planned along the routes of the proposed roads, bridge, pathways, cycle routes and other civil infrastructure. It is also required for the proposed construction of SUDs features, landscaping and boundary treatments, demolition and ancillary works/earthworks.

Excavations have the potential to impact the hydrological and geological environment in the study area. At the Site, topsoils and subsoils will be extracted using mechanical excavators and by directional pipe jacking or directional drilling technology at the M1 crossover point.

With regards to the operational phase, since the land-use at the Site is currently predominantly agricultural, the proposed development of road, pathway and cycle lane surfaces in the identified locations will represent a permanent change drainage and surface flow patterns at the Site.

During the Construction and Operational Phases every effort will be made to ensure that any detrimental environmental effects are circumvented. A full suite of mitigation measures in relation to every environmental aspect is detailed within the EIAR and also within Appendix 1 of this Report.

With the implementation of the mitigation measures the residual impacts on the hydrological and hydrogeological environment during the construction and operational phases are considered imperceptible.

12. Air Quality and Climate

This assessment evaluated the impact which the Proposed Development may have on Air Quality and Climate as defined in the Guidelines on the Information to be contained in Environmental Impact Assessment Reports (EPA, 2022).

In line with the UK Institute of Air Quality Management (IAQM) guidance documents "Significance in air quality Nov 2009 and Guidance on the Assessment of Mineral Dust Impact for Planning" (2016) prior to assessing the impacts of air pollutants from a Proposed Development, the sensitivity of the area must first be assessed as outlined below.

With regards to dust nuisance both receptors sensitivity and proximity to proposed works area are taken into consideration. For the purposes of this assessment, high sensitivity receptors are regarded as residential properties where people are likely to spend the majority of their time.

In terms of receptor sensitivity to dust spoiling, there are a number of sensitive receptors located less than 100 m from the proposed facility. Based on the IAQM criteria, the worst case sensitivity of the area to dust spoiling is considered to be **Medium**.

The baseline air quality analysis carried out as part of the assessment identified that all levels of classical air pollutants were less than the allowable guideline and statutory limit values.

The proposed subject site has been designed to ensure that there are no significant adverse effects on air quality. This is demonstrated through the air assessment and air modelling study, which establishes that no International or Irish air quality standards or guidelines are forecast to be exceeded.

The assessment concludes that operation of the subject site will have imperceptible effects on air quality and the health of local people.

Application of an Environmental Management System will incorporate best practice measures in order to minimise dust and air pollutants at the subject site. During the construction and operational phase, emissions to air from the construction, landscaping and operation of the process will be regulated in accordance with specific conditions set out within the EIAR.

A full suite of mitigation measures which will be enforced to circumvent any potential impacts to air quality and climate are outlined in Chapter 8 of the EIAR and Appendix 1 of this Report

The main activities associated with the Project and relevant to air quality include:

- Movement of site plant within the site and transport vehicles arriving to the site;
- Disturbance, placement and movement of material and stockpiles; and
- Dust emissions generated during dry periods, with windy conditions.

The Environmental Management Plan (EMP) details the mitigation measures that will be implemented on site to minimise environmental impacts and specifically relating to dust emissions will include:

- Vehicles delivering materials with dust potential will be enclosed or covered with tarpaulin;
- All HGV's leaving the site will directed through a wheelwash in order to prevent mud and other wastes being tracked onto public roads;
- All stockpiles will be monitored and treated with water to minimise dust emissions where required;
- Hard surfaces on-site will be swept to remove any mud or aggregate build up to minimise dust emissions;
- During prolonged dry or windy periods, any areas with the potential to generate dust will be watered, in particular areas next to the site entrance; and
- Public roads will be inspected regularly for cleanliness and cleaned as necessary.

A monthly dust monitoring programme will be implemented at the site boundaries for the duration of the site activities and records maintained on-site. The monthly measurements will be undertaken using the TA Luft/VDI 2119 Bergerhoff Method and levels shall not exceed the 350 mg/m²/day standard. Records of the monthly measurements will be maintained on-site.

13. Noise and Vibration

This assessment considered the noise impacts associated with the Project.

The assessment identified the noise sensitive locations i.e. local residences in the vicinity of the Project.

A baseline noise survey has been undertaken as part of the planning application prepared for the proposed development.

The survey was conducted in general accordance with ISO 1996-2:2017 Acoustics --Description, measurement and assessment of environmental noise - Part 2: Determination of sound pressure levels. Specific details are set out in the following sections.

Four Noise Monitoring Locations (NML's) surrounding the site were selected for the noise survey; each of these locations are described in turn below.

NML1: at the (proposed) site entrance(s), on the L1140, at the southern boundary of the Zone-A site; also close to the northern boundary of the Zone-F site; some unoccupied/abandoned residences located to the SW of this location.

NML2: at the closest residence to the Zone-A site, located to the NW of the proposed development, and situated within ca. 10m of the subject site boundary.

NML3: at the closest (current) commercial business to the Zone-A and Zone-F site(s), and situated ca. 160m from the Zone-A (Eastern) boundary, and ca. 220m from the Zone-F (Eastern) boundary.

NML4: at the closest residence to the Zone-F site, located to the SE of the proposed development, and situated within ca. 280m of the subject site boundary.

With consideration of the site location, the likely construction phase activities, the distances from these works to nearby dwellings and the proposed construction noise criteria (i.e. 70 dB $L_{Aeq,11hr}$ for weekday daytime periods) it is <u>not</u> expected that potentially significant noise impacts will be encountered when works are occurring, with approximately 180 metres as the closest point to neighbouring dwellings.

Vibration

With consideration of the distance from site boundaries to nearby sensitive receptors, and proposed general methods of construction, it is projected that vibration emissions to nearby receptors will be not significant. Vibration mitigation measures are, however, presented in the relevant sections of this document in order to ensure that construction vibration emissions are adequately controlled.

Although noise and vibration is not expected to cause any significant impacts to the surrounding area of the proposed development site, a full suite of mitigation measures will be deployed during the construction phase, as outlined in Chapter 9 of the EIAR and Appendix 1 of this Report.

14. Landscape and Visual

This assessment considered the potential landscape and visual impacts which may be generated during the construction, operational and restoration phases of the Project.

An in depth assessment (LVIA) is provided within Chapter 10 of the EIAR, and this section to to primarily provide a summary of the LVIA findings.

The proposed development is located within a gently undulating landscape with elevations on site range from approximately 38mOD to 50mOD. The surrounding landscape generally slopes toward the M1 motorway corridor which runs through the centre of the study area, adjacent to the proposed development. Toward the east, elevations begin to gently increase at greater distances from the motorway corridor, whereas elevation increases more drastically to the west of the site, in the direction of the Naul Hill upland areas, the highest point of which reaches c. 176mOD at Knockbrack Hill.

Visual impacts were assessed at 7 No. viewpoints which represent different receptors, viewing distances and viewing angles within the study area. Visibility of the proposed development is limited to the immediate vicinity of the site given the nature and scale of the development, adjacent to and acting as an extension of the existing road network. The significance of visual impact ranges between 'Slight' and 'Imperceptible' and in the three cases where effects greater than imperceptible are assessed, the quality of the visual change is either Neutral or Positive.

Slight or Slight-imperceptible significance of visual impact were noted at, VP2, VP4 and VP5 due to their proximity to the proposed enabling works and the proportion of the development visible from these locations. In most instances, the only visual changes are to the existing road network, apart from VP2 which sees an alteration of land use from purely pastoral, to a pasture with a road through its centre. In other instances, where the development is visible primarily as changes to the existing road network, these changes are subtle, and do not stand out in the context of the views, within an existing road corridor.

Given the site's scale and its nature as enabling works, in preparation for future development, the proposed development is considered to be of modest consequence in terms of effects to landscape character and views. In this regard it is considered that this is an appropriately sited development, that can be readily assimilated into this landscape with little consequence to landscape character, or views.

Nonetheless, mitigation measures will be implemented to avoid and reduce any potential impacts to the landscape and visual aspect of the site and its environs, as outlined in Appendix NED. 7910H. 1 of this Report.

Traffic and Transport 15.

The Traffic and Transport assessment assessed the potential effects of the Project on the local traffic and transport network during the construction, operational and restoration phases.

A Traffic and Transport Assessment was undertaken to review existing traffic volumes and conditions on the local road network. The assessment also assessed the impacts of any additional traffic on the road network that will be generated by the Project.

The modelling results concluded that during the construction phase, the traffic effects during the the proposed civil infrastructure will be brief in terms of duration - occurring during the network peak hours only, and imperceptible negative in terms of magnitude - changes on the operational capacity of the junctions will be minor.

As for the operational phase, it was determined that the traffic effects during the operational phase of the future-planned commercial buildings will be brief in terms of duration - occurring only during the network peak hours and moderate negative in terms of magnitude - even though all junctions will operate well within capacity for all assessed scenarios, changes to their operational capacity will be moderate. Outside the network peak hours, however, the traffic effects during the operational phase are likely to be permanent in terms of duration, but not significant in terms of magnitude.

Nonetheless, a suite of mitigation measures to be deployed in order to lessen any potential traffic impacts are outlined in Table 1 of this Non Technical Summary.

16. Waste Management

A site-specific Resource Waste Management Plan (RWMP) and a Construction Environmental Management Plan (CEMP) has been prepared to deal with waste generation and environmental protection during the construction phase of the proposed development and are included as Appendix 12 and 14 of the EIAR.

In summary, the management of construction and demolition waste will reflect the waste management hierarchy, with waste prevention and minimisation being the first priority, followed by reuse and recycling. During site clearance and construction works, there are numerous opportunities for the beneficial reuse and recycling of materials. The subsequent use of recycled materials in construction works also reduces the quantities of waste which ultimately needs to be consigned to landfill sites.

The Contractor will develop and implement a plan and manage all waste with a goal of achieving the waste hierarchy in accordance with the relevant statutory provisions.

Wastes generated on the construction site will be identified and segregated according to their respective categories, as described by the European Waste Catalogue (EWC). Where possible, metal, timber, glass and other recyclable material will be segregated and removed off-site to a permitted/licensed facility for recycling.

In order to achieve this, designated waste storage areas will be created at the construction compound or other suitable locations for the storage of segregated wastes prior to transport for recovery/disposal at suitably licensed/permitted facilities. Suitably sized containers for each waste stream will be provided within the waste storage area and will be supervised by the Resource and Waste Manager who will be appointed by the Main Contractor. This will be the person responsible for the management of waste during the construction of the project. The number and sizing of containers will be agreed with Waste Contractors in advance of construction works commencing. Source segregation of waste will result in cost savings to the project as well as providing an environmentally sound route for the management of all construction and demolition wastes.

Possibilities for reuse of clean, non-hazardous excavation material as fill on the site or in landscaping works will be considered following appropriate testing to ensure material is suitable for its proposed end use. Ground Investigations (GI) included Waste Acceptance Criteria (WAC) testing shall be carried out on samples on a continuous basis throughout construction.

GI and WAC testing was carried out in October 2023. The majority of samples in Zone A and F tested as Non-Hazardous, except for TP09 located in Zone F, which included a "potentially hazardous amount of chromium in chromium (VI) oxide. Further testing in this location will be carried out prior to the procurement phase to accurately determine the potential for contamination.

Material management and waste auditing will also be carried out onsite, and is detailed fully in Chapter 13 of the EIAR.

After the Design Approach, Waste Management Strategy and proposed mitigation measures are implemented as outlined in **Section 13.5**, **Section 13.6** and **Section 13.8 of Chapter 13 of the EIAR**, along with the implementation of the CEMP and RWMP during the construction

phase any residual impacts are considered not significant - imperceptible during the construction phase.

It is considered that minimal volumes of municipal waste streams will be generated from commercial activities during the operational phase. Whilst this is a longer-term impact, it is considered not significant-imperceptible with the implementation of appropriate waste management procedures in line with legislative requirements and environmental best practise.

Nonetheless, a suite of mitigation measures will be deployed to circumvent any potential impacts arising from waste generation during the construction and operational phase, as Detailed in Appendix 1 of this report.

17. Archaeology, Cultural Heritage and Architectural Heritage

This assessment considered the potential effects on archaeological, architectural and cultural heritage.

The study involved detailed investigation of the archaeological, architectural and cultural heritage background of the development site, the landholding and the surrounding area extending 1km from the development boundary. Additionally, a field assessment of the proposed development area was carried out on the 3rd of August and the 24th of November 2023 to identify any previously unknown archaeological, architectural or cultural heritage sites.

The following is a brief summary of the main types sites and monuments that are known from the study area along with the historical development of the study area:

The Prehistoric Period

Prehistoric activity in the study area is indicated by the discovery of a Bronze Age cist and pit burial (RMP DU005-041---, SMR DU005-079----) and two Ring-ditches (SMR DU005-182---- and Licence No. 95E0250) in Courtlough townland.

The Early Medieval Period

In the Early Medieval period (500 AD-1170 AD) the study area formed part of the local kingdom of Saithne, later the cantred of Fyngal North (MacCotter 2008, 165). Classically settlement at this period is indicated by the presence of enclosed farmsteads known as ringforts, when enclosed with earthen banks, and cashels when enclosed by stone walls. There are ringforts known in the study area in Balrickard (RMP DU004-016---) and Rowans Big (RMP DU004-017---) townlands, and enclosures that may be the remains of ringforts in Rowans Little (RMP

DU004-026---) Jordanstown (RMP DU005-034---), Walshestown (SMR, DU004-069---, SMR DU004-070---, and SMRDU004-090---) that indicate early Medieval settlement in the study FD. 79/08. area.

The Later Medieval Period

Following the Anglo-Norman conquest of Dublin in 1171 and the visit of King Henry II to Ireland Fingal became part of the lands of the crown (Orpen Vol. 1, 369). Manorialism describes the organisation of the feudal rural economy and society characterised by the vesting of legal and economic power in a lord supported economically from his own direct landholding and from the obligatory contributions of a legally subject part of the peasant population under his jurisdiction. In Ireland, the Lord's manor house was also often enclosed by a rectangular moat and these sites are referred to as moated sites. There are no moated sites known in the study area and the closest known example externally is at Newtowncorduff (RMP DU008-016----) 5km to the south.

The Post-Medieval Period

In the 1547 extent of the Rectory of Lusk the Three Rowans were recorded as paying a tithe of corn and hay to the rectory for the support of the Precentor of the Cathedral of St. Patrick, Dublin (Mason 1820, 36). The Down Survey records that in 1641 the Great Roanes and the Middle Roanes (Rowans Big and Little) was held by William Travers but by 1670 was held by the Archbishop of Dublin (http://downsurvey.tcd.ie). By the nineteenth century Griffith's Valuation records that the application site had come into the hands of James Shiels and the Earl of Howth (https://www.askaboutireland.ie/griffith-valuation/).

Protected Structures

The Fingal County Development Plan 2023-29 and the Record of Protected Structures was examined as part of the baseline study for this chapter of the EIAR. The review established that there are no Protected Structures situated within the application site or within the study area.

National Inventory of Architectural Heritage

The National Inventory of Architectural Heritage (NIAH) which is maintained by the Dept. of Housing, Local Government and Heritage was examined as part of the baseline study for this chapter of the EIAR on the 20th of November 2023. The review established that there are no structures included in the NIAH situated within the application site or in the study area.

Recorded Monuments

Examination of the Record of Monuments and Places for Co. Dublin indicated that there are no Recorded Monuments located within the application site.

A full description of findings from the study is outlined in depth in Chapter 12 of the EIAR

Due to the possibility of the survival of previously unknown subsurface archaeological deposits or finds within the application site topsoil-stripping should be monitored by a qualified archaeologist under licence from the national Monuments Service. Any archaeological material identified during archaeological monitoring should be preserved *in situ* or by record as appropriate under licence from the National Monuments Service.

Nonetheless, no indirect effects on any known items of archaeology, cultural heritage or buildings of significant architectural heritage interest in the application site or the vicinity during the construction and operation stage have been identified by the assessment.

18. Material Assets

The material assets considered as part of the assessment were in relation to any major utilities associated with the Project. This section of the Report is largely based on information within the attached planning application drawing pack and Engineering & Planning Reported, attachments of the EIAR.

Potential Impacts on Utilities

Existing Buildings

The proposed development site is located within lands predominantly used for agriculture however there are also a no. of existing buildings within the development redline which are due to be demolished:

- A single-storey 200-square-metre (m²) house, an abandoned water storage reservoir and associated pump stations, all located on the western boundary of Zone A;
- 13 No. existing buildings consisting of agricultural sheds, stables, warehouses and residential dwellings located in Zone F;

The heritage value of the buildings has been assessed within Chapter 13 and the correct procedures to be implemented during their demolition is detailed within the CEMP.

Proposed alteration to the Road Network

Pedestrian and Cycle Linkages

No pedestrian or cycle facilities are available along the R132 or Bhailsigh Road (L1140) between the proposed development and the nearest public transport infrastructure link which is located near Applegreen. The nearest public transport infrastructure link is located 300m north of the Applegreen Roundabout on the R132, consisting of the Bus Éireann Grooms Stop (I.D. 100231) running between Dublin and Drogheda.

In line with other Fingal County Council projects planned along the R132 (R132 Blake's Cross to Minister's Road) to facilitate connectivity for pedestrian and cyclists and to promote the use of sustainable transport methods, a 3m-wide shared pedestrian and cycle pathways are proposed from the Applegreen R132 roundabout to the proposed development entrances located on the Bhailsigh Road (L1140) roundabout. The proposal includes shared paths on both carriageway shoulders, which will connect to existing pathways located around the R132 roundabout. The shared paths are proposed to tie into the existing 2m wide concrete footpaths located on the Junction No. 5 bridge crossing. No modifications or upgrading of the existing 2m footpaths are proposed.

Alterations to Bhailsigh Road (L1140) Roundabout

The existing Bhailsigh Road (L1140) roundabout was constructed with access spurs to Zone A (north) and Zone F (south). Minor amendments are proposed to the kerblines, access spurs and islands of the roundabout which was constructed in c. June 2008 to comply with the present-day design standards of TII. To cater for the future pedestrian and cyclists' movements accessing the proposed development, a Toucan Crossing is proposed on Bhailsigh Road (L1140). New uncontrolled pedestrian crossings are proposed upon entering the proposed Business Park sites.

Proposed Internal Access Roads

The proposed internal access roads for Zone A and F consists of 7.5m wide, single carriageways as shown on Drawings 16_206A-CSE-GEN-XX-DR-C-1610 to 1615 of the planning pack. Further detail on internal access roads proposed is outlined within Chapter 13 of the EIAR.

Gas

There is gas infrastructure existing within the proposed development site which is not be altered.

Electrical Supply and Telecommunication Ducting

Public lighting is proposed onsite, which will necessitate 2 x 15kVA connections to the existing 250kVA pole mounted transformer located on the northeastern corner of Zone A. An ESBN Connection Application will be submitted following the confirmation of the planning application reference number. The existing 250kVA transformer has sufficient capacity to cater for the Zone A and F public lighting requirements. All future developments will be subject to their own ESBN connection applications and availability of supply in the local network can only be assessed once power consumption/requirements are known.

Telecommunications ducting will be provided to service future developments within the proposed Zone A and F. Future connections applications to service providers will be required to service individual land parcels.

Surface Water Drainage

Surface Water connections are proposed as part of the proposed development, as well as surface water drainage infrastructure for the access road and associated infrastructure consisting of Sustainable Urban Drainage Systems features such as raingardens, bioretention ponds, attenuation ponds, hydro brakes, Nature-based Solutions (NBS) and conveyance networks.

The full design strategy and design details of the proposed surface water management systems for the development are presented within the Engineering and Planning Report of the EIAR.

Foul Drainage

There is no available foul drainage on the Western portion of the M1 Motorway where the proposed development site is located.

It is proposed to drain by gravity from the southern portion of Zone F all the way to the northern section of Zone A via a 300mm diameter foul sewer pipeline at a slope of 1:300. A pump station and 24-hour emergency storage tank are proposed on the northeastern corner of Zone A, where wastewater would be pumped underneath the M1 Motorway via a new 125mm diameter ductile iron rising main, which will be sleeved through an existing abandoned 200mm diameter watermain. The figure below displays the layout of the above pumping station, emergency storage tank and rising main.

The proposed rising main will discharge to a new manhole located on the eastern side of the motorway, which will be connected to the existing 300mm diameter foul sewer which drains northwards towards the M1 Business Park WWTP.

In accordance with the Uisce Éireann Code of Practice, a 24-hour emergency storage tank will be provided which equates to a storage volume of 200m³ based on the DWF. The in-situ

concrete tank shall be designed to have a minimum factor of safety against floatation for the empty emergency storage structure subjected to groundwater upward pressure of 1.2. The pump station design shall be carried out in accordance with the Uisce Éireann standard 79104:2024 details.

Foul Drainage is detailed further in the Planning & Engineering Report of the EIAR.

Water Supply

There is an existing water supply mains located along the northern and western boundary of Zone A. No existing pipelines are available for Zone F. There are two pipelines crossing the M1 Motorway into Zone A consisting of a 150mm and 200mm diameter pipeline feeding to/from the storage reservoir located on the western boundary and that the pipelines are under private ownership. This reservoir and pump station was constructed c. 2001-2005 with the first M1 Business Park building located on the eastern side of the motorway. According to the Savills Leak Detection Report compiled in January 2022, one pump station is utilised for domestic supply and the other for fire pumps.

A connection point to the existing 150mm diameter pipeline is proposed, which is located on the northern boundary of Zone A, which will feed both Zone A and Zone F via a proposed 150mm diameter uPVC main. Proposed watermain details are shown in Drawings included within attached Engineering Planning Report of the EIAR.

Owing to the nature of the proposed development, together with a short-term duration of works envisaged, the construction and operational phases can be considered as a one phase/process.

A full suite of mitigation measures is provided in Appendix 1 of this report.

19. Cumulative Assessment

This assessment considered the potential for cumulative impacts arising from the Project in association with other projects or developments. Based on a review of the planning application viewer there are no committed developments in proximity to the subject site which are likely to give rise to cumulative impacts with it. The Proposed development is part of an indicative masterplan. The masterplan will be subject to subsequent planning application and has been consider as far as practicable within cumulative assessment sections of the EIAR. No cumulative impacts were identified associated with the indicative masterplan.

The assessment concluded that no significant cumulative impacts will occur and on this basis, no additional mitigation above those already included in the EIAR and Environmental Management Plan were required.

Appendix 1. Mitigation measures Summarised.

Chapter Number	Environmental Aspect	Construction Phase	Operational Phase
5	Population & Human Health	 Impacts relating to dust, traffic, noise and vibration are addressed fully in the respective chapters of the EIAR. It is noted that a CEMP (Appendix 4 of the EIAR) has been prepared setting out a framework in relation to the management of environmental nuisances when the proposed Projects construction phase is operational. The CEMP will be updated as required prior to the commencement of the works on site as part of the construction phase. Compliance with the CEMP will be mandatory for the appointed contractor including subcontractors and other relevant personnel involved in the development works at the site. The CEMP details the mitigation measures that will be implemented on site during the construction phase, to minimise environmental impacts and specifically relating to dust emissions will include: Vehicles delivering materials with dust potential will be enclosed or covered with tarpaulin; All HGV's leaving the site will directed through a wheelwash in order to prevent mud and other wastes being tracked onto public roads; All stockpiles on-site will be swept to remove any mud or aggregate build up to minimise dust emissions; Hard surfaces on-site will be inspected regularly for cleanliness and cleaned as necessary. More detailed mitigation measures specific to noise and vibration, air quality and traffic and transport are addressed in the relevant chapters of the EIAR. Training on the requirements of the CEMP will be provided to all construction site staff by the appointed contractor as part of the is ite induction. Records of this training will be maintained on-site for future reference and auditing ourposes. 	No specific mitigation measure proposed development with re- impacts of the development co- will be developed and enforce including speed limits, approp- completed facility is operated the welfare of the facilities use Impacts on Human Health and works should be carried out un Legislation.
6	Biodiversity	 Construction and operational Mitigation Measures will be incorporated into the proposed development project to minimise the potential negative impacts on the ecology within the Zone of Influence (ZoI) including the onsite drainage ditch, Balrickard Stream and Bracken River. Designated Conservation Sites There is a direct pathway to the North West Irish Sea SPA. There is a direct hydrological pathway to the Bracken River which leads to the North West Irish Sea SPA. During construction standard construction phase controls will be in place to remove silt and petrochemicals prior to discharge of surface water to the Balrickard, which in turn outfalls to the Bracken River. The measures have been designed to ensure that the project will comply with the Water Pollution Acts in relation to construction and drainage. All measures outlined below will be followed. Contamination of watercourses leading to European Sites Prior to construction the appointment of an ecologist to oversee enabling works and the implementation of mitigation measures will be carried out. No works will commence on site until the ecologist submits a letter to the local council authority to state that he/she has been appointed and has developed a Construction Environmental Management Plan which includes a) Phasing of the project, b) Full details of the works programme including methodologies for all works, surface water management and watercourse and pond works c) maps containing details of mitigation measures and any invasive species on site within 30m of site works including haul routes, site compounds etc. d) approval of the instream methodologies outlined by Inland Fisheries Ireland. Earthwork operations will be carried out such that surfaces, as they are being raised, shall be designed with adequate drainage, falls and profile to control run-off and prevent ponding and flowing. Any discharges to the watercourse during construction must be discussed with t	No significant effects are pred mitigation in terms of ensuring involve a post construction ass project ecologist to ensure it is

res are required for the operational phase of the espect to population and human health, with any considered positive. Regulatory safety standards ed at the completed business park as is required, priate read markings and signage to ensure the and maintained to safeguard human health and ers.

ers. Ind Disasters are not deemed likely. However, all under compliance with relevant Health and Safety

dicted for the operational phase. However, g compliance with the Water Pollution Acts will ssessment of the drainage infrastructure by the is constructed as outlined.

	Mitigation measures on site include dust control, stockpiling away from watercourse and drains.	\Diamond
	 Stockpiling of loose materials will be kept to a minimum of 20m from watercourses and drains. 	
	 Stockpiles and runoff areas following clearance will have suitable barriers to prevent runoff of 	
	tines into the drainage system and watercourses.	
	• Fuel, oil and chemical storage will be sited within a bunded area. The bund will be at least 50m	
	away from drains, ditches or the watercourse, excavations and other locations where it may	
	cause pollution.	
	 Bunds will be kept clean and spills within the bund area will be cleaned immediately to prevent groundwater contamination. Any water filled executions, including the attenuation tank during 	
	groundwater containination. Any water-lined excavations, including the attenuation tank during construction, that require numping will not directly discharge to the stream. Prior to discharge of	
	water from excavations adequate filtration will be provided to ensure no deterioration of water	
	quality	
	 Stockpiles and runoff areas following clearance will have suitable barriers to prevent runoff of 	
	fines into the drainage system and watercourses.	
	 Bunds will be kept clean and spills within the bund area will be cleaned immediately to prevent 	
	groundwater contamination.	
	• During the construction works silt traps will be put in place in the vicinity of all runoff channels the	
	stream to prevent sediment entering the watercourse.	
	 Planting in the vicinity of the stream crossings should be put in place as soon as possible to allow 	
	biodiversity corridors to establish.	
	 On-site inspections will be carried out by project ecologist during enabling works and until 	
	drainage connection is complete.	
	 Maintenance of any drainage structures (e.g. de-silting operations) must not result in the release 	
	of contaminated water to the surface water network.	
	No entry of solids or concrete to the associated stream or drainage network during the connection	
	of pipework	
	AIF & DUSE The pro-entire centrel of fugitive duct will ensure provention of eignificant emissions origing	
	 The pro-active control of lugitive dust will ensure prevention of significant emissions ansing, rather than a less effective attempt to control them once they have been released 	
	 Hard surface roads will be swent to remove mud and addregate materials from their surface while 	
	any un-surfaced roads will be restricted to essential site traffic	
	 Any road that has the potential to give rise to fugitive dust must be regularly watered, as 	
	appropriate, during dry and / or windy conditions.	
	 Vehicles exiting the Site shall make use of a wheel wash facility where appropriate, prior to 	
	entering onto public roads.	
	 Vehicles using site roads will have their speed restricted, and this speed restriction must be 	
	enforced rigidly. On any un-surfaced site road, this will be 20kph, and on hard surfaced roads as	
	site management dictates.	
	 Public roads outside the Site will be regularly inspected for cleanliness and cleaned as necessary. 	
	 Material handling systems and Site stockpiling of materials will be designed and laid out to 	
	minimise exposure to wind. Water misting or sprays will be used as required if particularly dusty	
	activities are necessary during dry or windy periods.	
	 During movement of materials both on and off-site, trucks will be stringently covered with terpsulin at all times. Before entrepse ente public reade, trucks will be adequately inepected to 	
	ansura no notontial for dust amissions	
	Dust may enter the onsite watercourse via air or surface water with notential downstream	
	impacts. Mitigation measures will be carried out reduce dust emissions to a level that avoids the	
	possibility of adverse effects on the onsite watercourse. The main activities that may give rise to	
	dust emissions during construction include the following:	
	Excavation of material;	
	Materials handling and storage;	
	 Movement of vehicles (particularly HGV's) and mobile plant. 	
	Contaminated surface runoff	



 Trucks leaving the site with excavated material will be covered so as to avoid dust emissions 	
along the haulage routes.	
 Speed limits on site (15kmh) to reduce dust generation and mobilisation. 	
 The stream is to be protected from dust on site. This may require additional measures in the 	
vicinity of the bridge (east of the site) if this road is used for machinery e.g. placing of	
terram/protective material over the stream.	
 Regular inspections of the site and boundary should be carried out to monitor dust, records and 	
notes on these inspections should be logged	
Record all dust and air quality complaints, identify cause(s) take appropriate measures to reduce	
emissions in a timely manner, and record the measures taken	
Make the complaints log available to the local authority when asked	
 Record any executional incidents that cause dust and/or air emissions, either on, or effecte, and 	
• Record any exceptional incluents that cause dust and/or all emissions, either off- of offsite, and the action taken to receive the situation in the leg back	
the action taken to resolve the situation in the log book.	
Monitoring	
Indertake daily on-site and off-site inspection, where recentors are nearby to monitor dust	
record inspection results, and make the log available to the local authority when asked. This	
should include regular dust spilling checks of surfaces within 100 m of site boundary integrity of	
the silt centrel measures, with cleaning and / or repair to be provided if percessory	
Densite levent as that machinery and dust equaing activities are leasted even from receptors, as	
• Fian site layout so that machinery and dust causing activities are located away norm receptors, as far as is possible.	
iai as is possible. Fully an along an a site on another such and the reliance birth material family duration and the site is	
Fully enclose specific operations where there is a high potential for dust production and the site is	
active for an extensive period.	
Remove materials that have a potential to produce dust from site as soon as possible, unless	
being re-used on site. If they are being re-used on-site cover as described below.	
Cover, seed or fence stockpiles to prevent wind whipping.	
Hard surface roads will be swept to remove mud and aggregate materials from their surface while	
any un-surfaced roads will be restricted to essential site traffic.	
 Any road that has the potential to give rise to fugitive dust will be regularly watered, as 	
appropriate, during dry and/or windy conditions.	
 Maintain a vegetated strip and vehicle exclusion zone between the works and the Matt/Bracken 	
Stream (where possible) in consultation with the project ecologist.	
Regular inspection of surface water run-off and any sediment control measures e.g. silt traps will	
be carried out during the Construction Phase. Regular auditing of construction / mitigation	
measures will be undertaken e.g. concrete pouring, refuelling in designated areas etc.	
Weather conditions will be considered when planning construction activities to minimise the risk of	
run-off from the Site and the suitable distance of topsoil piles from surface water drains will be	
maintained.	
Measures Specific to Earthworks	
 Re-vegetate earthworks and exposed areas/soil stockpiles to stabilise surfaces as soon as 	
practicable.	
 Use Hessian, mulches or trackifiers where it is not possible to re-vegetate or cover with topsoil, as 	
soon as practicable.	
Only remove the cover in small areas during work and not all at once	
During dry and windy periods, and when there is a likelihood of dust nuisance, a howser will	
operate to ensure moisture content is high enough to increase the stability of the soil and thus	
eunnrese dust	
Suppress use. Due to the provimity of the ensite watercourse an ecologist will everese works in particular the	
Due to the proximity of the onsite watercourse an ecologist will oversee works in particular the oversee works in particular the	
The Contractor will be required to concult with an eccleric prior to the beginning of works to	
 The Contractor will be required to consult with an ecologist prior to the beginning of works to identify any additional measures that may be apprepriate and/or required. 	
identity any additional measures that may be appropriate and/or required.	



	Storage/Use of Materials, Plant & Equipment	
	 Materials, plant and equipment shall be stored in the proposed site compound location; 	
	• Plant and equipment will not be parked within 50m of the onsite watercourse at the end of the	
	working day;	
	Hazardous liquid materials or materials with potential to generate run-off shall not be stored within	\sim
	50m of the onsite watercourse.	
	• All oils, fuels and other hazardous liquid materials shall be clearly labelled and stored in an	
	upright position in an enclosed bunded area within the proposed development site compound.	
	The capacity of the bunded area shall conform with EPA Guidelines – hold 110% of the contents	
	or 110% of the largest container whichever is greater;	
	• Fuel may be stored in the designated bunded area or in fuel bowsers located in the proposed	
	compound location. Fuel bowsers shall be double skinned and equipped with certificates of	
	conformity or integrity tested, in good condition and have no signs of leaks or spillages;	
	• Waters collected in drip trays must be assessed prior to discharge. If classified as contaminated,	
	they shall be disposed by a permitted waste contractor in accordance with current waste	
	management legal and regulatory requirements;	
	All persons working will receive work specific induction in relation to material storage	
	arrangements and actions to be taken in the event of an accidental spillage. Daily environmental	
	toolbox talks / briefing sessions will be conducted for all persons working to outline the relevant	
	environmental control measures and to identify any environment risk areas/works.	
	Watercourses	
	 In stream works to be carried out in full consultation with and to the advice of Inland Fisheries 	
	Ireland and the project ecologist.	
	 Staging of project to initially stabilise, isolate, fence off watercourse on site 	
	Mitigation measures on site include dust control, stockpiling away from watercourses and drains	
	Pollution control and mitigation on site	
	 Stockpiling of loose materials will be kept away from watercourses and drains. A risk based 	
	approach will be taken.	
	Stockpiles and runoff areas following clearance will have suitable barriers to prevent runoff of	
	fines into the drainage system and watercourses.	
	During the construction works silt traps will be put in place in the vicinity of all runoff channels the	
	stream to prevent sediment entering the watercourse.	
	Petrocnemical interception and bunds in retuelling area	
	 Planting in the vicinity of the stream crossings should be put in place as soon as possible to allow bigdiversity corridors to establish 	
	Diodiversity corridors to establish.	
	 On-site inspections to be carried out by project ecologist. Twice daily monitoring of turbidity (from 11cm) will be carried out on site. 	
	During the works silt trans will be put in place	
	 During the works shi traps will be put in place No discharges will be to the watercourse during works 	
	 Silt trans established throughout site including a double silt fence between the site and the 	
	watercourse	
	 Sufficient onsite cleaning of vehicles prior to leaving the site and on nearby roads, will be carried 	
	out particularly during groundworks	
	The Site Manager will be responsible for the pollution prevention programme and will ensure that	
	at least daily checks are carried out to ensure compliance. A record of these checks will be	
	maintained.	
	The site compound will include a dedicated bund for the storage of dangerous substances	
	including fuels, oils etc. Refuelling of vehicles/machinery will only be carried out within the bunded	
	area.	
	A project ecologist must be appointed and be consulted in relation to all onsite drainage during	
	construction works. Consultation with the project ecologist will not involve the formulation of new	
	mitigation measures for the purposes of protecting any European Site, and relate only to the	
· · ·		



	 implementation of those mitigation measures already stated in the submission or the formulation of mitigation for other purposes. Dewatering of excavations may be necessary. Appropriate monitoring of groundwater levels during site works will be undertaken. Standard construction phase filtering of surface water for suspended solids will be carried out. Unfiltered surface water discharges or runoff are not permitted from the site into the Matt/Bracken Stream during the works. Trenched double silt fencing shall be put in place along boundary of the proposed development site with 10m buffer from the Stream. This fencing must be in place as one of the first stages on site and prior to the full site clearance. The silt fencing will act as a temporary sediment control device to protect the watercourse from sediment and potential site water runoff but also act as a tree protection zone for the riparian buffer. The fencing will be inspected twice daily, based on site and weather conditions, for any signs of contamination or excessive silt deposits. Concrete trucks, cement mixers or drums/bins are only permitted to wash out in designated wash out are greater than 50m from sensitive receptors including drains and drainage ditches. Abstraction of water from watercourses is not to be permitted. Spill containment equipment shall be available for use in the event of an emergency. The spill containment equipment shall be explicit induction in relation to surface water management and run off controls. Daily environmental toolbox talks / briefing sessions will be conducted to outline the relevant environmental colobox talks / briefing sessions will be conducted to outline the relevant environmental control measures and to identify any environment risk areas/works. Environmental risks due to construction and operation of the proposed development do potentially exist, particularly in relation runoff from sloping site, drains that could lead to the Matt/Bracken Stream. Ecologica	RECEIVED. JOURADA
	 A pre-construction inspection for roosting bats importance will be carried out. A post construction light spill assessment will be carried out. Wintering birds An Ecological Clerk of Works (ECoW) will be appointed to oversee the construction phase and to oversee the implementation of all mitigation including compliance with Wildlife Acts and Water Pollution Acts and ensure that biodiversity in neighbouring areas including birds will not be impacted. All mitigation measures outlined in the EIAR Chapters, Screening for Appropriate Assessment (AA) and Natura Impact Statement (NIS) (if applicable) that pertain to the construction stage of the proposed development will be implemented by the Contractor. The effectiveness of the proposed mitigation will be monitored throughout the construction period. All construction corridor will be confined strictly to the construction corridor. Any construction works required outside the construction corridor will require prior approval from the ER. Lighting during construction should not spill outside the proposed development. 	
7 Land, Soils & Geology	During the Construction Phase every effort will be made to ensure that any detrimental environmental effects will be avoided, prevented or reduced. Potential impacts on land, soils and geology are assessed as slight to moderate pre-mitigation. To further mitigate the slight to moderate potential impacts, the measures set out below will be implemented:	During the Operational Phase, with the implementation of the pro impacts will be imperceptible to moderate on land, soils and geole receptors. No monitoring is required during the operational phase.



 A construction environmental management plan (CEMP) will be prepared prior to construction commencing. The CEMP will include the mitigation measures set out within the EIAR and any additional measures required by the local authority. The CEMP will have regard to the guidance contained in the handbook published by Construction Industry Research and Information Association (CIRIA) in the UK, Environmental Good Practice on Site Guide, 4th Edition (CIRIA 2015). The construction management team will supervise the construction of the project, including monitoring the performance of the contractors to ensure that the proposed construction phase mitigation measures are implemented. In relation to the specific risks assessed in Chapter 7 of the EIAR, mitigation measures include: 	PAC
Pomoval of excavated soil and tensoil from the Site	
 All topsoil or subsoil will be assessed for re-use within the Proposed Development by the appointed contractor, ensuring the appropriate handling, processing and segregation of the material. Where practical the removal of topsoil from the Proposed Development will be avoided. All earthworks will be undertaken in accordance with TII Specification for Road Works (SPW) Series 600 Earthworks (TII 2013) and project-specific earthworks specifications, ensuring that all excavated material and imported material is classified using the same methodology to allow maximum opportunity for the reuse of materials on site. 	
Sail aragian and compaction	
 Soll erosion and compaction Management of surface water runoff will be undertaken during overburden stripping and landscaping works to ensure that silt does not enter the on-site agricultural drains or the Balrickard Stream. Where possible overburden stripping and landscaping works will be scheduled for periods of low rainfall to reduce potential erosion; and Landscaped areas will be planted with trees and grasses as soon as possible after formation to reduce the potential for erosion. 	
 All excavated soil materials will be stockpiled using appropriate methods to minimise the impacts of weathering. Care will be taken in reworking this material to minimise dust generation, groundwater infiltration and generation of runoff. 	
Excavation of unknown contaminated soil	
 The appointed contractor will ensure that excavations shall be kept to the minimum required, using shoring or trench boxes where appropriate. For more extensive excavations, a temporary works designer shall be appointed by the appointed contractor to design excavation support measures in accordance with all relevant guidelines that minimises the excavation of contaminated ground. The appointed contractor will be responsible for regular testing of excavated soils to monitor the suitability of the soil for reuse. Samples of ground suspected of contamination will be tested for contamination and will be disposed of at a suitably licensed or permitted site in accordance with the current Irish Waste Management legislation. Should dewatering be required in areas of contaminated ground, it shall be designed by the appointed contractor to minimise the mobilisation of contaminants into the surrounding environment. 	
Risk of contamination of existing soils by the construction activities such as accidental fuel spills	
 Good construction management practices, as outlined in the CIRIA guidance Control of Water Pollution from Construction Sites – Guidance for consultants and contractors (Masters-Williams et al., 2001) will be employed by the appointed contractor to minimise the risk of transmission of hazardous materials as well as pollution of adjacent watercourses and groundwater. The construction management of the Site will take account of these recommendations to minimise as far as possible the risk of soil, groundwater and surface water contamination. Employing only competent and experience workforce, and site-specific training of site managers, 	
foremen and workforce, including all subcontractors, in pollution risks and preventative measures;	



-			-
		 Ensure that all areas where liquids (including fuel) are stored, or cleaning is carried out, are in designated impermeable areas that are isolated from the surrounding area and within a secondary containment system, e.g. by a roll-over bund, raised kerb, ramps or stepped access; The location of any fuel storage facilities shall be considered in the design of all construction compounds. These are to be designed in accordance with relevant guidelines and codes of best practice and will be fully bunded; Good housekeeping at the Site (daily site clean-ups, use of disposal bins, etc.) during the entire Construction Phase; Potential pollutants to be adequately secured against vandalism; Provision of proper containment of potential pollutants according to codes of best practice; Thorough control during the entire Construction Phase to ensure that any spillage is identified at early stage and subsequently effectively contained and managed; and Spill kit to be provided and to be kept close to the storage area. Staff to be trained on how to use spill kits correctly. An Environmental Incident Response Plan will be implemented by the appointed contractor, which will identify the actions to be taken in the event of a pollution incident. It will address containment measures, emergency discharge routes, a list of appropriate equipment and clean-up materials and notification procedures to inform the relevant environmental protection authority. Sediment control methods will be implemented by the appointed contractor. The CEMP also addresses good construction Phase it is proposed soil and geological environment monitoring will include: The monitoring of works with supervision of contractor adherence to the CEMP. Monitoring of sole storage areas and integrity inspections. Inspection of soils from contamination). Monitoring of soli and its stability during excavatos. <	RECEIVED. John Rosa
8	Water, Hydrology & Hydrogeology	 In response to the ecological corridor designation of the Balrickard Stream at the Site, a riparian corridor is proposed in the Proposed Development in line with the Inland Fisheries Ireland guidance to avoid any negative impacts on the watercourse. During the Construction and Operational Phases every effort will be made to ensure that any detrimental environmental effects will be avoided, prevented or reduced. To further mitigate the potential impacts, the measures set out below will be implemented: The control measures outlined in the attached CEMP will be implemented along with the control measures outlined in the EIAR and any additional measures required by the local authority. The CEMP will have regard to the guidance contained in the handbook published by Construction Industry Research and Information Association (CIRIA) in the UK, Environmental Good Practice on Site Guide, 4th Edition (CIRIA 2015). The construction management team will supervise the construction phase mitigation measures are implemented In relation to the specific risks assessed in the Hydrology Chapter of the EIAR, mitigation measures include the following: Groundwater vulnerability due to excavations. The limited depth of excavation activities will minimise the risk of increasing groundwater vulnerability at the Site. Appropriate groundwater 	Spills or leaks causing contaminated surface water runoff from rochardstanding to shallow groundwater. An appropriately designed system has been designed for the subject site. The system was of accordance with SUDS guidance. The SuDS features include an pond, raingardens and bioretention ponds, Nature-based Solutions conveyance networks Reduced infiltration of rainwater to shallow groundwater or the ur aquifer An appropriately designed drainage system has been designed subject site. The system was designed in accordance with the CIF Manual 2015 It incorporates partial infiltration design on SUDS fe Increased risk to persons, property due to increased hardstandin pluvial/surface water flooding or fluvial flooding. To mitigate on-si flood risk to land and property, an appropriately designed drainage been prepared for the subject site in accordance with local author standards. Drainage system maintenance by the ultimate owner/be required to include cyclical (min. annual) check of any flow cord in particular clearing of debris; Cyclical (min. annual) visual inspet surface or underground attenuation features – blockages and obside removed by jetting as required.

ninated surface water runoff from roads and other ndwater. An appropriately designed drainage the subject site. The system was designed in nce. The SuDS features include an attenuation ntion ponds, Nature-based Solutions (NBS) and

ter to shallow groundwater or the underlying aned drainage system has been designed for the designed in accordance with the CIRIA SUDS partial infiltration design on SUDS features. pperty due to increased hardstanding leading to or fluvial flooding. To mitigate on-site potential , an appropriately designed drainage system has site in accordance with local authority drainage naintenance by the ultimate owner/occupier shall (min. annual) check of any flow control device -Cyclical (min. annual) visual inspection of any ation features – blockages and obstructions to ired.

 following sections and will ensure the risk posed is low, temporary and neutral. Excavations during construction. Surface water runoff from areas stripped of topsoil and associated vegetation and surface water collected in excavations will be directed to on-site settlement ponds where measures will be implemented to capture and treat sediment in runoff prior to controlled discharge to the surface water network. Stockpiles will be stored in an appropriate manner on site for the duration of the construction works and protected for re-use on completion of the main site works. Storage methods that minimise the impacts of weathering will be used. Care will be taken in reworking this material to minimise dust generation, groundwater infiltration and generation of runoff. Run-off from hardstanding and compaction. An appropriately designed site drainage system during the construction stage will ensure that surface water runoff is appropriately controlled and treated before discharge. Settlement ponds will be established. Trenched double silt fencing shall be put in place along the boundary with a ten-meter buffer from the onsite drainage ditches and the Balrickard Stream. This fencing shall be in place as one of the first stages on site and prior to commencement of soil removal works. The silt fencing shall act as a temporary sediment control device to protect the drains and watercourses from sediment and potential site water runoff. The fencing shall be inspected twice daily, based on site and weather conditions, for any signs of contamination or excessive silt deposits. Concrete trucks, cement mixers or drums/bins will only be permitted to wash out in a designated wash out area greater than 50 m from sensitive receptors including drainage ditches, drains or waterbodies. Abstraction of water from watercourses will not be permitted. 	Off-site surface water effects components and no increase from the Site as a result of th The proposed development northern part of the Site. Whi datasets, so not subject to Se drainage function of the chan required culvert and / or diver part of surface water manage Watercourse maintenance by required to include general w reduce the risk of blockage a the capacity of the channels. The following measures are in programme for watercourses channel that can impede flow of brambles, bushes and stiff debris collection; removal of removal of build up of silt in or disposal; Cyclical (min. annual and removal of debris as required an area likely to fall back into
 construction works. Any exceedances of baseline conditions attributed to the construction operations will be immediately assessed by the contractor and identification of the source of the impact identified to facilitate appropriate measures to prevent any further potential impacts. Spill of fuel (stored or used on Site) or other potential contaminants. Good construction management practices, as outlined in the CIRIA guidance Control of Water Pollution from Construction Sites – Guidance for consultants and contractors (Masters-Williams et al., 2001) will be employed by the appointed contractor to minimise the risk of transmission of hazardous materials as well as pollution of adjacent watercourses and groundwater. The construction management of the Site will take account of these recommendations to minimise as far as possible the risk of soil, groundwater and surface water contamination. This will include employing only competent and experience workforce, and site-specific training of site managers, foremen and workforce, including all subcontractors, in pollution risks and preventative measures. 	
 The appointed contractor must ensure that: All areas where liquids (including fuel and waste fuel) are stored, or cleaning is carried out, are in designated impermeable areas that are isolated from the surrounding area, including surface water drains and open waters (incl. excavations) and within a secondary containment system, e.g. by a roll-over bund, raised kerb, ramps or stepped access; The location of any fuel storage facilities shall be considered in the design of all construction compounds. Fueling, lubrication and storage areas and site offices will not be located within 25m of drainage ditches, surface waters or open excavations. These are to be designed in accordance with relevant guidelines and codes of best practice and will be fully bunded; 	

will be mitigated by provision of SUDS in rate and volume of run-off of surface water ne Proposed Development.

crosses an existing open drainage channel in the ile not classed as a watercourse on EPA / OPW ection 50 or forming a Flood Zone, the existing nnel should be maintained. Details / sizing of ersion to be confirmed at detailed design stage as ement design for the Site.

y the ultimate owner/occupiers of the Site shall be vatercourse / ultivert maintenance which will at downstream culverts and screens and maintain

intended to inform any future maintenance s and culverts: Removal of any items within the w; adequate attention to river banks, with removal f vegetation that reduce flow capacity/increase weed growth from the centre of the channel; channels and at culvert inlets with appropriate ual) visual inspection of culvert inlets and screens juired, ensuring debris removed is not deposited in to the channel.

 Good housekeeping at the Site (daily site clean-ups, use of disposal bins, etc.) during the entire Construction Phase; 	
 Skips will be closed or covered to prevent materials being blown or washed away and to reduce the likelihood of contaminated water leakage: 	· · · · · · · · · · · · · · · · · · ·
 Hazardous wastes such as waste oil, chemicals and preservatives, will be stored in sealed containers and kept separate from other waste materials while awaiting collection by a registered waste carrier; Potential pollutants to be adequately secured against vandalism; Provision of proper containment of potential pollutants according to codes of best practice; Thorough control during the entire Construction Phase to ensure that any spillage is identified at early stage and subsequently effectively contained and managed; and Spill kit to be provided and to be kept close to the storage area. Staff to be trained on how to use spill kits correctly. 	
An Environmental Incident Response Plan, as presented within the attached CEMP, will be implemented by the appointed contractor, which will identify the actions to be taken in the event of a pollution incident. It will address containment measures, emergency discharge routes, a list of appropriate equipment and clean-up materials and notification procedures to inform the relevant environmental protection authority. Sediment control methods will be implemented by the appointed contractor All waste containers (including all ancillary equipment such as vent pipes and refueling hoses) will be stored within a secondary containment system (<i>e.g.</i> a bund for static tanks or a drip tray for mobile stores and drums). The bunds will be capable of storing 110% of the tank capacity. Where more than one tank is stored, the bund must be capable of holding 110% of the largest tank of 25% of the aggregate capacity (whichever is greater). Drip trays used for drum storage must be capable of holding at least 25% of the aggregate capacity. Where more than one drum is stored the drip tray must be capable of holding 25% of the aggregate capacity of the drums stored.	
Regular monitoring of water levels within drip trays and bunds due to rainfall will be undertaken to ensure sufficient capacity is maintained at all times. Refueling may only occur within a designated bunded area. Surface water runoff from a refueling area will discharge to a drain via a full retention petrol interceptor. Prior to the interceptor, a silt trap will be remove the majority of suspended solids. The provision of wheel wash facilities close to the site entrance shall reduce the deposition of mud, soils and other substances on the surrounding road network. Oil which accumulates within the interceptor shall be regularly removed by an appropriately licensed contractor. In addition, the interceptor shall be appropriately maintained in accordance with the manufacturer's specification.	
 Monitoring prior to, during and post construction works of surface water quality shall be undertaken to ensure minimum disturbance of water quality in the boundary ditch. During the construction phase, the monitoring programme will include daily checks, weekly inspections and monthly audits to ensure compliance with the Construction Environmental Management Plan. Hazardous waste shall be dealt with in accordance with the Waste Management (Hazardous Waste) Regulations. An Emergency Operating Plan (EOP) to deal with the possibility of contamination or fuel spills, <i>e.g.</i>, pumping of wells or sumps to collect contaminated groundwater or surface water for treatment will be developed and incorporated into an overall Construction & Waste Management Plan (CWMP) for the development. The CIRIA document (2001) recommendations for developing a contingency plan for pollution emergencies will be implemented and include the following: Containment measures. Emergency discharge routes. List of appropriate equipment and clean-up materials. Maintenance schedule of equipment. 	
 Details of trained staff. Details of staff responsibilities. Notification procedures to inform the relevant environmental protection authority. Audit and review schedule; and, provide a list of specialist pollution clean-up companies and their telephone numbers. 	
Any vehicles utilised during the operational phase shall be maintained on a weekly basis and checked daily to	



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	 ensure any damage or leakages are corrected. The potential impacts are limited by the size of the fuel tank of the largest plant / vehicles used on the Site. Precautions shall be taken to avoid spillages. These include: Use of secondary containment e.g. bunds around oil storage tanks; Use of drip trays around mobile plant; Supervising all deliveries and refueling activities; and, Designating and using specific impermeable refueling areas isolated from surface water drains. 	P.C.
	 Temporary storage of potentially contaminated material: Appropriate safe storage of all and waste materials shall be implemented during the construction works in accordance with the Construction Waste Management Plan (CWMP) for the works. Measures include: Covering of stockpiles to minimise surface water runoff, Creation of berms around stockpiles to contain runoff during heavy rainfall events. Waste segregation and storage in dedicated sealed skips 	
	• Excavation of contaminated materials. Special environmental and human health contingency plans and procedures, following best-practice guidance, will be developed for the unexpected discovery of contaminated or illegally deposited waste materials. In the event of encountering contaminated ground or buried waste, an appropriately scoped contaminated land site investigation will be undertaken by a contaminated land consultant comprising soil monitoring, water monitoring, gas and vapour monitoring and groundwater level monitoring as appropriate. All works will be undertaken in accordance with best practice and EPA Guidance on the Management Of Contaminated Land and Groundwater at EPA Licensed Sites, 2013.On completion of the above, a suitably detailed remediation program of works will be undertaken under the direction and supervision of a contaminated land consultant. The outcome of the investigation will dictate the most appropriate remedial solution for the development. Samples of ground suspected of contamination will be tested for contamination. Should dewatering be required in areas of contaminated ground, it shall be designed by the appointed contractor to minimise the mobilisation of contaminants into the surrounding environment.	
	• Importation of contaminated fill material. All imported fill material shall be sourced from approved sources and appropriately certified and fit for purpose. All fill material will be confirmed to be inert prior to importation to the Site including confirmation of the chemical testing and a visual assessment. Fill sourced from non-licenced/non-permitted facilities will require prior authorisation under Article 27 legislation.	
	• Sediment mobilization due to dewatering. The temporary disposal and treatment of any water pumped from any excavations will be carefully managed. All waters from excavations will be passed through an on-site construction stage drainage system before being discharged and filtering of surface water for suspended solids will be carried out. Untreated water discharges or runoff shall not be permitted from the Site.	
	 All waters abstracted from excavations will be monitored, as a minimum, on a daily, bimonthly, and monthly basis to ensure compliance with the 2009 Surface Water Regulations and with any conditions set by the planning authority. Daily monitoring will comprise visual and on-site monitoring (e.g. pH, Electrical Conductivity, Temperature and Total Dissolved Solids). Bimonthly monitoring will involve samples collected for laboratory testing including Total Suspend Solids (TSS), Total Dissolved Solids (TDS), pH, Electrical Conductivity, Chloride and Ammoniacal Nitrogen. Monthly monitoring will include heavy metals, nitrate, nitrite, ORP and total hydrocarbons. Any exceedances of baseline conditions in that is attributed to the construction operations will be immediately assessed by the contractor and identification of the source of the impact identified to facilitate appropriate measures to prevent any further potential impacts. The contractor will consult with the local authority to facilitate the application and granting of a temporary discharge licence if required. 	



		• Potential mobilisation of pollutants from construction site in flood events during the construction phase. The implementation of the mitigation measures above, in particular the bulleted measures under: Run-off from hardstanding and compaction; Spill of fuel (stored or used on Site) or other potential contaminants; and temporary storage of potentially contaminated material, will be applied to mitigate this this risk.	P.F.C.F.
9	Air Quality & Climate	 The objective of dust control at site is to ensure that no significant nuisance occurs at nearby sensitive receptors. The construction / demolition phase is imited and short in duration; In order to develop a workable and transparent dust control strategy, the following management plan has been formulated by drawing on best practice guidance from Ireland, the UK (IACM (2014), The Scottish Office (1996), UK Office of Deputy Prime Minister (2002) and BRE (2003) and the USA (USEPA (1997)). A full traffic management plan and dust management plan will be incorporated into the Construction phase of the development. This will be generated specifically for the proposed development when detailed design is completed. The aim is to ensure good site management by avoiding dust becoming airborne at sources. This will be done through good design and effective control strategies. A Dust Management Plan (DMP) should be prepared and agreed with the stakeholders for implementation on-site. A DMP is a documented site-specific operational plan to prevent or minimise the release of dust from the site. It should describe the management and operational actions the site will use to deal with hobt anticipated (e.g. forecast) and actual high risk conditions (e.g. dry days with measured winds above moderate breeze). The DMP should describe the conditions under which dust is most likely to pose a risk of disamenity at sensitive receptors close to the site and set trigger levels which, when exceeded, would require further dust control measures to be implemented (i.e. over and above the routine measures). At the construction planning stage, the siting of activities and storage of materials will take note of the location of sensitive receptors and prevailing mind directions in order to minimise seuse of the solution of sensitive receptors. Site Management (2002). BRE (2003). The potential for significant dust generation is also reliant of the subar exerciting opera	There are no scheduled emiss development.



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activities will be reviewed and satisfactory procedures implemented to rectify the problem. Specific dust	P.
control measures to be employed are described below.	`
Site Roads and Routes	
Movement of transportation trucks and plant trucks along haul roads (in particular unpaved roads) can be a significant source of fugitive dust if control measures are not in place. The most effective means of supressing	
dust emissions from unpaved roads to apply speed restrictions. Studies show that these measures can have a	
control efficiency ranging from 25 to 80% (UK Office of Deputy Prime Minister, 2002).	
 Bowsers or suitable watering equipment will be available during periods of dry weather through the 	
construction period. Research has found that watering can reduce dust emissions by 50% (USEPA,	
1997). Watering shall be conducted during sustained periods to ensure that unpaved areas are kept moist. The required application rate frequency will vary according to soil type, weather conditions and	
vehicular use;	
Any hard surface roads will be swept to remove mud and aggregate materials from their surface.	
Site traffic on Public roads	
Spillage and blow off of debris, aggregates and fine material onto public roads will be reduced to a minimum	
by employing the following measures:	
 Vehicles delivering or collecting material with potential for dust emissions shall be enclosed, covered or wetted at all times to restrict the escape of dust; 	
 Public roads directly outside the site shall be regularly inspected for cleanliness, as a minimum on a 	
daily basis, and cleaned as necessary.	
Summary of Dust Mitigation Measures	
The proactive control of fugitive dust will ensure that the prevention of significant emissions, rather than an	
inefficient attempt to control them once they have been released, will contribute towards the satisfactory	
performance of the operator. A full traffic management plan and dust management plan will be incorporated into the Environmental	
Management System in order to minimise such emissions as a result of the operational phase of the	
development. This will be generated specifically for the proposed development when detailed design is	
completed.	
In order to ensure that no dust nuisance occurs at sensitive receptors, a series of measures will be implemented through the CEMP:	
On site roads shall be regularly cleaned and maintained as appropriate.	
 Hard surface roads shall be swept to remove mud and aggregate materials from their surface as a result of the development. 	
 Any un-surfaced roads shall be restricted to essential site traffic only. 	
 Furthermore, any on site road that has the potential to give rise to fugitive dust will be regularly 	
watered, as appropriate, during extended dry and/or windy conditions.	
 Venicles using site roads shall have their speed restricted, and this speed restriction will be enforced rigidly. On any un-surfaced site road and on hard surfaced roads speed shall be 	
restricted to 20 km per hour.	
 Vehicles delivering material with dust potential (soil, aggregates) will be enclosed or covered with tarpaulin at all times to restrict the escape of dust 	
 Material handling systems and site stockpiling of materials shall be designed and laid out to 	
minimise exposure to wind. Water misting or sprays shall be used as required if particularly dusty activities are necessary during dry or windy periods.	
 At all times, these procedures will be strictly monitored and assessed. In the event of dust 	
nuisance occurring outside the subject site boundary, movements of materials likely to raise dust	
will be curtailed and satisfactory procedures implemented to rectify the problem before the	
In relation to the completion of the proposed development, the bard standing surface, and all	
roads will be tarmacadamed/concreted where applicable. In periods of dry weather when dust	



		 emission would be greatest, a road sweeper, which would also dampen the road, will be employed as required to prevent the generation of dust. In terms of good practice construction vehicles and equipment will receive regular maintenance. Technical inspection will be performed of vehicles to ensure they will perform most efficiently. A Traffic Management Plan will be implemented to minimise congestion. 	PECE
10	Noise & Vibration	 With regard to construction activities, best practice control measures for noise and vibration from construction sites are found within BS 5228:2009+A1:2014 'Code of Practice for Noise and Vibration Control on Construction and Open Sites Parts 1 and 2'. Whist construction noise and vibration impacts are calculated to be within the criteria set out in this document for the majority of the time, the contractor will ensure that all necessary noise and vibration control measures will be used, in order to ensure impacts to nearby residential noise sensitive locations are not significant. The following mitigation measures are required during the construction of the proposed development: Use of a site hoarding, minimum 2.4m height to be erected around the perimeter of the construction site for the duration of works where the distance of works is 30m or less to nearby noise sensitive locations; Limiting the hours of construction to the following: Monday to Friday 07.00 - 19.00 Saturday 07.00 - 13.00 In exceptional circumstances, and subject to agreement with Fingal County Council, extended hours of operation may be applied for. In such instances an assessment of potential noise impacts shall be carried out in advance of works taking place, and submitted to Fingal County Council, as part of the extended hours request. Monitoring levels of noise and vibration during critical periods and at sensitive locations; Selection of plant with low inherent potential for generation of noise and/ or vibration; Selection of plant with low inherent potential for generation of noise and/ or vibration; Erection of barriers as necessary around items such as generators or high duty compressors; Situate any noisy plant as far away from sensitive properties as is reasonably practicable and the use of vibrative insolated support structures where necessary; Establishing channels of communication between the contractor/	During the operational phase of with respect to traffic coming to/ necessary.
11	Landscape & Visual	Based on the landscape and visual impact judgements provided throughout this LVIA, the proposed development and associated site works are not considered to give rise to any significant landscape / visual or cumulative impacts. Consideration has been given to what measures can be taken to reduce, avoid, compensate and remedy any potential impacts. From a landscape and visual perspective, considering the scale of the proposed development and given the site's location adjacent to a busy motorway corridor, alongside the degree of vegetative screening provided by existing hedgerows, additional screen planting is not considered necessary at this stage.	Based on the landscape and vis this LVIA, the proposed develop considered to give rise to any sig impacts. Consideration has been given to avoid, compensate and remedy visual perspective, considering t given the site's location adjacen degree of vegetative screening p screen planting is not considere
12	Traffic & Transport	The analysis of the local road network has shown that all junctions would operate within capacity for the construction phase during both peak hours and the changes to the junction's operational capacities will be minor. It can therefore be determined that the traffic effects during the construction phase of the proposed civil infrastructure will be brief in terms of duration – occurring during the network peak hours only, and	The assessment results have sh junctions would also operate we scenarios during both peak hour capacities will be moderate. The

e of the development, noise mitigation measures to/from the development are not deemed

visual impact judgements provided throughout lopment and associated site works are not v significant landscape / visual or cumulative

n to what measures can be taken to reduce, edy any potential impacts. From a landscape and ng the scale of the proposed development and cent to a busy motorway corridor, alongside the ng provided by existing hedgerows, additional ered necessary at this stage.

e shown that both the existing and proposed local well within capacity for all Operational Phase ours even though changes to their operational Therefore, it can be determined that the peak hour

		 imperceptible negative in terms of magnitude – changes on the operational capacity of the junctions will be minor. A Construction Environmental Management Plan (CEMP) has been prepared for the subject development in order to provide guidance on how to minimise the potential impact of the construction stage of the proposed development on the safety and amenity of other users of the public road. The CEMP, which accompanies the documentation package under a separate cover, considers the following aspects: Dust and dirt control measures; Noise assessment and control measures; Routes to be used by vehicles; Working hours of the site; Details of construction traffic forecasts; Times when vehicle movements and deliveries will be made to the site; Facilities for loading and unloading; Facilities for parking cars and other vehicles. The specific measures will include, but not limited to the following: Issue of instructions and maps on getting to site to each supplier sub-contractor to avoid 'lost' construction traffic travelling on unapproved routes; Ongoing assessment of the most appropriate routes for construction traffic to avoid 'lost' construction traffic travelling on unapproved routes; Not allowing construction traffic to wait on public roads; Schedule the delivery of materials daily; Provision of vehicle and wheel washing facilities on site. Further to the above, a detailed Construction Management Plan (CMP) and a Construction stage. These documents, which shall be prepared in coordination and agreement with the Local Authority, will outline, but not limited to, site logistics and indicate the following: Vehicle entry and exit routes to/from the site; Diversion of pedestrian and cycling routes; Location of material storage areas; Eanksmen locations. The subject application documents also includ	traffic effects during the operate buildings will be brief in terms peak hours and moderate neg network peak hours, however, are likely to be permanent in to magnitude. In order to encourage future st reduce the dependence on prive sustainable forms of transport the accompanying Mobility Ma specific actions to be implement Advising staff about the presert within the site and along the L ⁴ wide footpaths and cycle infrase between the site and the facilit Providing information about tax TaxSaver Commuter Ticket Sc Providing Guidance for staff or Providing secure cycle parking buildings in accordance with co The proposed active travel fac pedestrian and cycle connectiva along the R132. This will result sustainable transport options.
13	Waste Management	A CEMP and RWMP (Appendices 4 and 12 of the EIAR) have been prepared setting out a framework in relation to waste generation and appropriate waste management procedures during the construction phase of the proposed Project. Compliance with the CEMP and RWMP will be a mandatory requirement for the appointed contractor including all personnel and appointed sub-contractors at the site. The CEMP has been developed to reflect the waste management hierarchy and details the measures that will be implemented on site to minimise waste generation, manage materials on-site effectively and to prioritise reuse and recycling opportunities at the site having regard to the resource value of even discarded materials. The CEMP and RWMP details the mitigation measures that will be implemented on site during the construction phase, to improve and minimise waste generation, manage materials on-site effectively and to prioritise the reuse and recycling opportunities on-site. Training on the requirements of both the CEMP and RWMP will be provided to all construction site staff and sub-contractors by the appointed contractor as part of their site induction. Records of this training will be maintained and filed appropriately on-site.	The operational phase of the p planning applications which wil development as appropriate. It waste streams will be generated during the operational phase. T commercial activities once the management procedures will b operational in line with legislati practise.

tional phase of the future-planned commercial of duration – occurring only during the network **gative** in terms of magnitude. Outside the the traffic effects during the operational phase erms of duration, but **not significant** in terms of

taff of the future-planned commercial buildings to vate car (particularly alone) and avail of such as walking, cycling and public transport,

nagement Plan (MMP) sets out a number of nted during the operational phase such as: nce of new and secure active travel facilities 1140 such as dedicated pedestrian crossings, structure enhancing active travel connectivity ies along the R132

ties along the R132. x incentives for public transport users such as cheme.

n local bus routes and nearest bus stops. e benefits of carpooling.

to cater for the future-planned commercial ouncil's standards and requirements.

ility along the L1140 will significantly improve the vity and safety between the site and the facilities t in a **permanent** and **positive** effect in terms of

broject will be subject to separate subsequent Il assess the impacts associated with proposed it is considered that minimal volumes of municipal ed on site during the course of site activities These would be generated as a result of general site is operational. Appropriate waste be implemented at the site once the site is two requirements and environmental best

Proposed Waste Manageme	ent Options	
Waste materials generated will b	be segregated on-site, where it is practical. Where the on-site segregation of	
certain waste types is not practic	cal, off-site segregation will be carried out. There will be skips and receptacles	
provided to facilitate segregation	at source, where feasible. All waste receptacles leaving the site will be	
covered or enclosed. The appoint	nted waste contractor will collect and transfer the wastes as receptacles are	
filled. There are numerous waste	e contractors in the Fingal region that provide this service.	
All waste arisings will be handle	d by an approved waste contractor holding a current waste collection permit.	
All waste arisings requiring disp	osal off-site will be reused recycled recovered or disposed of at a facility	
holding the appropriate registrat	ion permit or licence as required	
During construction some of the	a sub-contractors on site will generate waste in relatively low quantities. The	
transportation of non bazardous	waste by persons who are not directly involved with the waste business, at	
weights loss than or equal to 2 t	and in vehicles not designed for the carriage of waste business, at	
from the requirement to have a	vente collection normit (nor Article 20 (1) (b) of the Maste Collection Dormit	
Degulations 2007, as amanded)	Any sub contractors engaged that do not concrete more than 2 tennes of	
Regulations 2007, as amended)	. Any sub-contractors engaged that do not generate more than 2 tonnes of	
waste at any one time can trans	port this waste off-site in their work vehicles (which are not designed for the	
carriage of waste). However, the	ey are required to ensure that the receiving facility has the appropriate	
Certificate of Registration / perm	nit / licence.	
Written records will be maintaine	ed by the contractor(s), detailing the waste arising throughout the C&D	
phases, the classification of eac	h waste type, waste collection permits for all waste contactors who collect	
waste from the site and Certifica	te of Registration / permit / licence for the receiving waste facility for all waste	
removed off-site for appropriate	reuse, recycling, recovery and / or disposal.	
Dedicated bunded storage conta	ainers will be provided for hazardous wastes which may arise, such as	
batteries, paints, oils, chemicals	, if required.	
The anticipated management of	the main waste streams is outlined as follows:	
Soils, Stone, Gravel, Clay a	nd Made Ground	
The waste hierarchy states that	the preferred option for waste management is prevention and minimisation of	
waste, followed by preparing for	reuse and recycling / recovery, energy recovery (i.e. incineration) and, least	
favoured of all, disposal. The ex	cavations are required to facilitate construction works so the preferred option	
(prevention and minimisation) ca	annot be accommodated for the excavation phase	
When material is removed off-si	te it could be reused as a by-product (and not as a waste). If this is done it will	
be done in accordance with Artic	cle 27 of the European Communities (Waste Directive) Regulations 2011	
which requires that certain cond	itions be met and that by-product notifications are made to the FPA via their	
online notification form Excavat	ed material should not be removed from site until approval from the EPA has	
been received. The potential to	reuse material as a by-product will be confirmed during the course of the	
excavation works, with the object	stive of eliminating any unnecessary disposal of material	
The next option (beneficial reuse	a) may be appropriate for the excavated material, pending environmental	
testing to classify the material as	bazardous or non bazardous in accordance with the EDA Waste	
	Determining if Waste is Hazardous or Non Hazardous publication. Clean inert	
material may be used as fill mat	orial in other construction projects or engineering fill for waste licensed sites	
Ponoficial rouge of ourplus even	vision material as angingering fill may be subject to further testing to	
determine if meterials meet the	valion material as engineering ini may be subject to further testing to	
	specific engineering standards for their proposed end use.	
Any nearby sites requiring clean	fini/capping material will be contacted to investigate reuse opportunities for	
ciean and inert material. If any o	in the material is to be reused on another site as a by-product (and not as a	
waste), this will be done in acco	rdance with Article 27. Similarly, if any solis/stones are imported onto the site	
trom another construction site as	s a by-product, this will also be done in accordance with Article 27. Article 27	
will be investigated to see if the	material can be imported onto this site for beneficial reuse instead of using	
virgin materials.		
If the material is deemed to be a	waste, then removal and reuse / recovery / disposal of the material will be	
carried out in accordance with th	ne waste Management Act 1996 as amended, the Waste Management	
(Collection Permit) Regulations	2007 as amended and the Waste Management (Facility Permit & Registration)	
Regulations 2007 as amended.	Once all available beneficial reuse options have been exhausted, the options	
I frecycling and recovery at was	te permitted and licensed sites will be considered.	



In the event that contaminated material is encountered and subsequently classified as hazardous, this material will be stored separately to any non-hazardous material. It will require off-site treatment at a suitable facility or disposal abroad via Transfrontier Shipment of Wastes (TFS). Bedrock While it is not envisaged that bedrock will be encountered, if bedrock is encountered, it is anticipated that it will not be crushed on site. Any excavated rock is expected to be removed off-site for appropriate reuse, recovery and / or disposal. If bedrock is to be crushed on-site, the appropriate mobile waste facility permit will be obtained from Fingal County Council. Silt and Sludge During the construction phase, silt and petrochemical interception will be carried out on run-off and pumped water from site works, where required. Sludge and silt will then be collected by a suitably licensed contractor and removed off-site. **Concrete, Bricks, Tiles and Ceramics** The majority of concrete blocks, bricks, tiles and ceramics generated as part of the construction works are expected to be clean, inert material and should be recycled, where possible. If concrete is to be crushed onsite, the appropriate mobile waste facility permit will be obtained from Fingal County Council. Plastics As hard plastic is a highly recyclable material, much of the plastic generated will be primarily from material offcuts. All recyclable plastic will be segregated and recycled, where possible. Timber Timber that is uncontaminated, i.e. free from paints, preservatives, glues, etc., will be disposed of in a separate skip and recycled off-site. Metal Metals will be segregated, where practical, and stored in skips. Metal is highly recyclable and there are numerous companies that will accept these materials. Glass Glass materials will be segregated for recycling, where possible. Waste Electrical & Electronic Equipment (WEEE) Any WEEE will be stored in dedicated covered cages / receptacles / pallets pending collection for recycling. Other Recyclable Waste Where any other recyclable wastes, such as cardboard and soft plastic, are generated, these will be segregated at source into dedicated skips and removed off-site. Non-Recyclable Waste C&D waste which is not suitable for reuse or recovery, such as polystyrene, some plastics and some cardboards, will be placed in separate skips or other receptacles. Prior to removal from site, the nonrecyclable waste skip / receptacle will be examined by a member of the waste team (see Section 9.0) to determine if recyclable materials have been placed in there by mistake. If this is the case, efforts will be made to determine the cause of the waste not being segregated correctly and recyclable waste will be removed and placed into the appropriate receptacle. Asbestos Containing Materials Any asbestos or ACM found on-site should be removed by a suitably competent contractor and disposed of as asbestos waste before the demolition works begin. All asbestos removal work or encapsulation work must be



		 carried out in accordance with S.I. No. 589 of 2010 Safety, Health and Welfare at Work (Exposure to Asbestos) Regulations 2006-2010. Other Hazardous Wastes On-site storage of any hazardous wastes produced (i.e. contaminated soil if encountered and / or waste fuels) will be kept to a minimum, with removal off-site organised on a regular basis. Storage of all hazardous wastes on-site will be undertaken so as to minimise exposure to on-site personnel and the public and to also minimise potential for environmental impacts. Hazardous wastes will be recovered, wherever possible, and failing this, disposed of appropriately. 	P.C.C.
		It is currently not envisaged that the crushing of waste materials will occur on-site. However, if the crushing of material is to be undertaken, a mobile waste facility permit will first be obtained from Fingal County Council, and the destination of the accepting waste facility will be supplied to the Fingal County Council waste unit.	
14	Archaeology	Due to the possibility of the survival of previously unknown subsurface archaeological deposits or finds within the application site topsoil-stripping should be monitored by a qualified archaeologist under licence from the national Monuments Service. Any archaeological material identified during archaeological monitoring should be preserved <i>in situ</i> or by record as appropriate under licence from the National Monuments Service.	The operational phase of the planning applications which w development as appropriate.
15	Material Assets	Any impacts which may arise during the construction phase are not envisaged to be significant due to the nature of the activity proposed, i.e., enabling works. As previously outlined, the construction period will be short term and any potential impacts will managed by the CEMP and will temporary in nature. In the event that the roundabout upgrading works highlighted above are completed and access should be prevented to the undeveloped Zone A and F sites, interim closures of the access spurs shall be maintained by the applicant. The contractor employed on site will enforce measures to ensure there are no disruptions to existing services. Additionally, the contractor will adhere to the requirements of Uisce Eireann, TII, Fingal County Council and ESB upon the permittance of the aforementioned connections required to and from the proposed development site.	Operational Mitigation measur planning applications for the v considered as part of this app

he project will be subject to separate subsequent will assess the impacts associated with proposed e.