The final stages of bridge construction include installation of parapet elements (e.g., metal railings or barriers), application of pavement surfacing (if required), and placement of road markings.

5.5.1.5 Environmental Protection Measures

Silt fencing will be placed at the downstream end of the stream prior to any site clearance or excavation. Oil interceptors will be installed on all discharge points. Silt traps and temporary settlement ponds will be used to capture runoff from working areas. Regular inspections will be conducted throughout construction.

5.5.1.6 Environmental Impact

While the bridge design avoids in-stream works, the proximity to the stream means potential risks exist from runoff, sedimentation, and accidental spillage. Impacts are considered slight and short-term if appropriate mitigation is implemented.

5.5.1.7 Mitigation Measures

Mitigation measures will include:

- Implementation of a Construction and Environmental Management Plan (CEMP)
- Appointment of an Ecological Clerk of Works (ECoW)
- Installation of silt fencing and settlement ponds
- Refuelling zones located >75m from the stream
- Use of biodegradable hydraulic fluids
- Regular water quality monitoring

5.5.2 Surface Water Drainage

5.5.2.1 General

The proposed surface water drainage system is designed to attenuate and treat stormwater prior to discharge into the nearby stream and storm sewer, ensuring compliance with the Greater Dublin Strategic Drainage Study (GDSDS) and SuDS principles.

5.5.2.2 Construction Methodology

Pipe laying and manhole installation will be carried out in accordance with standard construction practices. Surface water attenuation will be achieved through the use of underground storage tanks, SuDS features and oversized pipe systems, designed to manage stormwater volumes effectively. A flow control device, such as a hydrobrake, will be installed to regulate discharge rates in line with design requirements. To prevent contamination, an oil interceptor and silt trap will be positioned upstream of the outfalls.

5.5.2.3 Environmental Protection Measures

Temporary silt traps and settling ponds will intercept construction runoff. No direct discharge will occur until the permanent system is commissioned. Works will follow IFI and CIRIA SuDS Manual guidelines.

5.5.2.4 Environmental Impact

Provided best practices are implemented, surface water works are not expected to result in significant impacts. The final system will improve water quality entering the stream.

5.5.2.5 Mitigation Measures

The proposed mitigation measures for both the construction and operational phases include:

- Silt traps such as a combination of an earthen berm, silt-fencing and associated interception trenches will be installed along the extent of the northern boundary of the Site, such that no contaminated surface water run-off can leave the Site and make its way to the adjoining stream to the east.
- Settlement ponds will be lined with cohesive material, with the addition of an engineered liner where a sealed drainage system is in use, and outlet by infiltration will not be permitted in order to protect the receiving groundwater at the Site.
- Under no circumstances will wastewater from equipment, wheel or surface cleaning be allowed to discharge into any drainage ditches, the ground or downslope to the adjoining stream.
- Debris and sediment captured by vehicle wheel washes will be collected and disposed of off-Site at a licensed facility.
- In addition, the below-listed measures serve to work in tandem with and complement efforts to mitigate sedimentation/siltation and the release of pollutants on Site during the Construction Phase.
- A Site Environment Plan (SEP) identifying fuel storage and refuelling locations will be developed and this plan will also identify the spill kit locations. Spill response kits will be required for each piece of heavy equipment (i.e. Excavators, Loaders, Trucks) which will be at least 21 litre drum size each with spill pads, sorbent, small boom, plastic garbage bag and gloves.
- Silt traps will be installed on surface water drains during the site development works.
- All foul and other waste water will be discharged to the foul drainage system. The storm drainage system with associated hydrocarbon interceptors and silt collection will be cleaned and maintained on an on-going basis throughout its lifetime in a manner and frequency that is in line with guidelines. All bypass separators are required by legislation to be fitted with an oil level alarm system with recommendations that the alarm is installed, tested, commissioned, and regularly serviced by a qualified technician. The alarm indicates when the separator needs immediate maintenance in order for it to continue to work effectively. The Environmental Agency's PPG3 guidelines stipulate that every 6 months, and in accordance with manufacturer's instructions, experienced personnel should carry out maintenance to both the separator and alarm. It is proposed to enter into a maintenance agreement with the bypass separator supplier will be to provide a full technical and service package including separator and alarm installation, commissioning, oil and silt removal and route service contracts.

The following measures will be implemented for the storage and use of hydrocarbons on site:

- Diesel tanks, used to store fuel for the various items of machinery, will be self-contained and double-walled.
- Refuelling will be carried out from these tanks or from delivery vehicles and will not be left unattended.
- Fuels, lubricants and hydraulic fluids for equipment used on the construction site will be carefully handled to avoid spillage, properly secured against unauthorised access or vandalism, and provided with spill containment according to best codes of practice - (Enterprise Ireland BPGCS005).
- Any spillage of fuels, lubricants or hydraulic oils will be immediately contained and the contaminated soil removed from the site and properly disposed of.
- Waste oils and hydraulic fluids will be collected in leak-proof containers and removed from the site for disposal or re-cycling.
- The development's road network will be finished with tarmac or asphalt surface which will discharge runoff to a piped drainage system.
- Proven engineering practice will apply during the hydraulic design process.
- Surface water drains will be installed in roads and streets and in pre-determined wayleaves adjacent to building structures.
- Spillage and leaks of oil from cars parked in the development during the operational phase is unavoidable. To reduce the potential impacts, oil interceptors will be incorporated into the site drainage design.

The proposed development is not anticipated to cause an adverse impact on the surface water regime given the remedial and reductive measures previously outlined. Normal proven construction reinstatement and backfilling procedures will follow pipe laying, jointing, and testing procedures.

5.5.3 Foul Sewer Drainage

5.5.3.1 General

The proposed foul water drainage system is illustrated in the services drawings and will discharge to the foul network in the adjoining Lady's Cross Estate and on the N71 outside the Clonakilty Enterprise Park.

5.5.3.2 Construction Methodology

All works will be in accordance with Irish Water Specifications and details. Gravity sewers will be installed using open-cut techniques. Manholes and inspection chambers will be constructed per IW standards. Final connection to the existing sewer will be coordinated with Irish Water.

5.5.3.3 Environmental Impact

Construction risks include spills, pipe failures, or ingress of groundwater. These are considered imperceptible to slight with mitigation.

5.5.3.4 Mitigation Measures

The proposed mitigation measures are:

- Proven engineering practice shall apply during the hydraulic design process of the foul sewer network.
- Foul sewers will be installed in accordance with I.S. EN 752: Drains and Sewer Systems outside buildings.
- The ability of the ground to support the proposed drainage network will be confirmed by preliminary site investigation works.
- The foul sewer network will be vented in accordance with standard working practice.
- Foul water drains will be installed in roads and streets

5.5.4 Potable Water Supply

5.5.4.1 General

It is proposed to provide two new 150mm I.D. Ø (inside diameter) HDPE connection to the watermain located in the adjacent Lady's Cross estate and on the N71 adjacent to the proposed site with associated hydrants, valves and metering requirements.

5.5.52 Construction Methodology

The installation of the proposed watermain will be carried out in accordance with Irish Water specifications and standard construction practices. Works will commence with the establishment of a clearly defined construction corridor, with appropriate traffic management and safety measures implemented as required.

Excavation for the trench will typically be carried out using mechanical diggers, with trench dimensions determined by pipe diameter and bedding requirements. Trench depths will ensure protection from frost and external loading, and where necessary, trench boxes or shoring will be employed to maintain sidewall stability and ensure worker safety.

A suitable granular bedding material will be laid at the base of the trench to provide uniform support for the pipe. The watermain, generally ductile iron or polyethylene (PE) in accordance with Irish Water standards, will be laid in sections and jointed using approved techniques. Pipe alignment, gradient, and joint integrity will be verified during installation.

Following installation, the pipeline will be subjected to hydrostatic pressure testing and chlorination in accordance with relevant standards to ensure integrity and water quality. Once testing is complete and results are satisfactory, the trench will be backfilled with suitable material in layers and compacted to avoid future settlement. Marker tape will be installed above the pipe to indicate the presence of buried services.

All connections to the existing network will be coordinated with Irish Water and carried out under appropriate permit and supervision conditions, with minimal disruption to existing services. Surface reinstatement will be completed to match existing ground conditions, whether hardstanding or landscaped areas.

Environmental controls, such as silt fencing and dust suppression, will be implemented throughout the works to minimise impacts on surrounding areas.

5.5.4.3 Environmental Impact

Impacts are considered negligible, with minimal risk to local supply or quality.

5.5.4.4 Mitigation Measures

The proposed mitigation measures are:

- Compliance with IW requirements for testing and disinfection
- Prevention of cross-contamination during construction
- Use of trained operatives and accredited materials

5.5.5 Electrical Systems

5.5.5.1 General

The development will be served by a new electrical connection from the existing ESB network. Ducting will also be provided for telecoms.

5.5.5.2 Construction Methodology

The basic infrastructure will be constructed at an early stage and the branch lines will be extended to various areas of the site as construction progresses. The installation of these services involves extensive trenching and the generation of surplus excavated material. The volume of this material has been calculated and it will be used within the site for re-grading around the site as development progresses.

5.5.5.3 Environmental Impact and Mitigation

No significant impacts are anticipated. Works will avoid trees and sensitive habitats. Compliance with BS 5837 will ensure root protection. Temporary barriers and safety signage will minimise public risk.

5.5.6 Summary

Infrastructural works have been designed and sequenced to minimise environmental impacts, particularly on nearby watercourses. Through adherence to best practice guidelines and implementation of a robust CEMP, the project will ensure that all infrastructural elements are delivered in a manner that protects local hydrology, habitats, and public health.

5.6 Health & Safety

5.6.1 General

In compliance with the Safety, Health and Welfare at Work (Construction) Regulations 2013, a Project Supervisor Design Process (PSDP) will be appointed by the developer to coordinate the design team and ensure that construction risks are identified and minimised during the design phase. Notification of this appointment will be made to the Health and Safety Authority (HSA) using their Approved Form 1 (AF1).

As the design progresses, the PSDP will prepare a Preliminary Health and Safety Plan. This document will then be transferred to the Project Supervisor Construction Stage (PSCS), who will develop it into a full Construction Health and Safety Plan. The appointment of the PSCS and the project start date will be notified to the HSA using Approved Form 2 (AF2).

The construction area will be clearly delineated and controlled by the PSCS, who will coordinate and supervise all health and safety aspects on site. A Safety File will be compiled and maintained throughout the construction phase and will be subject to regular audits. All site personnel and subcontractors will complete a Site Safety Induction delivered by the Site Safety Officer.

Personnel performing safety-critical tasks will be required to hold valid Construction Skills Certification Scheme (CSCS) qualifications, while all general operatives will be required to possess current Safe Pass cards.

All contractors must ensure a safe working environment, adhering to all applicable national laws, standards, and guidelines. Contractors are required to meet the following Health, Safety and Environmental (HSE) objectives:

- Zero accidents and injuries
- Zero harm to workers, the public, and the environment

Each contractor will prepare and implement an HSE Plan, incorporating detailed procedures and working instructions that govern their on-site operations. This HSE Plan will include:

- Project policy statement
- Roles and responsibilities
- Site regulations (housekeeping, barricades, excavations, equipment use, electrical safety, access, etc.)
- Risk management and hazard identification
- HSE training
- Subcontractor HSE management
- Work permit systems
- Personal Protective Equipment (PPE) requirements
- Inspection and auditing procedures
- HSE meetings
- Incident investigation and reporting
- Site security
- Medical care and first aid provision

Contractors will also develop and implement an Emergency Response Plan, which will detail communication protocols and measures in the event of an emergency. The HSE plan and its application will be subject to independent auditing throughout the project.

Minimum PPE for construction will include protective footwear, high-visibility vests, gloves, safety glasses, and hard hats. Ear protection will be used where noise levels exceed acceptable thresholds. Further details will be included in the Construction Health and Safety Plan developed by the contractor.

Warning signage will be erected at the site entrance to alert the public to ongoing construction works.

5.6.2 Control of Substances Hazardous to Health

Hazardous substances entering the site or generated during construction will be managed in accordance with best practice guidelines. Key control measures will include:

- All fuels and chemicals stored in designated, bunded areas
- Supervised delivery of hazardous materials
- Storage facilities sited away from watercourses and surface drains
- Immediate remedial action in case of spills or discharges, following established protocols
- Development of a logistics plan for handling hazardous substances
- Use of appropriate PPE based on risk assessment and site conditions

5.6.3 Emergency, Fire and Accident Procedures

Emergency routes and procedures will be adapted throughout the construction process to reflect site layout and construction phases. A comprehensive Emergency, Fire and Accident Plan will be prepared and regularly updated, encompassing:

- Definition of the safety management structure and responsibilities
- Fire prevention measures, including housekeeping and safe storage
- Use of non-flammable or fire-retardant materials
- Waste management practices
- Frequency and type of fire inspections
- Location and specification of site accommodation and fire-fighting systems
- Evacuation plans and procedures to ensure safe egress and emergency response
- Training and fire drills

5.7 Construction Traffic Management

The primary construction traffic route will use the L4007-52 and N71, which offer efficient access to and from the site. The transport of construction materials will account for the majority of HGV movements during the construction phase. Waste generated on site will be transported to licensed waste management facilities in the Cork area by authorised contractors.

The appointed contractor will confirm suppliers for materials and collection services. All waste removal will be managed by fully permitted waste contractors.

Construction vehicles will access the site directly from the N71 via the L4007-52 and will be able to turn within the site boundary to avoid traffic queuing on public roads. Suppliers will be informed of site working hours, and parking at the site entrance while waiting for access will be prohibited.

The N71 provides a strategic link to both eastern and western regions, allowing HGVs to avoid the town centre. While construction will result in a temporary increase in HGV traffic, these movements will be staggered to minimise disruption. On-site parking will be provided for construction staff; no parking will be permitted outside the site boundary.

Regular visual inspections of the surrounding road network will be conducted. The contractor will be responsible for cleaning any debris deposited by site vehicles, using suction sweepers or similar equipment. A hardstanding area will be constructed within the site to reduce transfer of soil and spoil onto the public road. If required, a wheel wash system will be installed at the site entrance.

Waste collection vehicles will be required to cover their loads to prevent escape of dust or debris during transit.

5.8 Environmental Management

5.8.1 Air Quality

Construction works will be carried out in such a way as to limit the emissions to air of pollutants (particularly dust and fine particles (PM10)), employing Best Practicable Means. The site will be managed in accordance with the CRWMP to minimise the potential effects on air quality from construction. Monitoring will be undertaken throughout the construction period to enable proactive management of dust and PM10 levels. Wind speed and direction will be included in the monitoring.

Dust will be generated mainly from earthworks activities at the early stage of the project and to a lesser extent from new construction and traffic movements. The closest human receptors are located in the adjoining properties in Lady's Cross estate and in the Clonakilty Park Hotel.

Measures will be put in place to minimise the impact of dust generated from the works with reference to best practice guidance such as the *Control of Dust from Construction and Demolition Activities* document. These measures will include:

- During periods of dry weather, the site access routes will be kept damp to minimise dust generation from construction traffic.
- Street sweepers will be employed to ensure the adjacent R474 is maintained free of dust.
- Establishing a 10 km/hr speed limit for vehicles on site.
- Minimisation of extent of working areas at any one time.
- Netting and/or hard surface hoarding around the perimeter of the site will minimise dust migration from the site at low levels.

- Stockpiling of imported materials will be limited to the volumes required to practically meet the construction schedule.
- Excavated materials will be removed from site as soon as possible to minimise potential for stockpiles to create windblown dust; and
- Daily inspections by the main contractor will be carried out to identify potential sources of dust generation along with implementation measures to remove causes where found.

It is not proposed to carry out dust deposition monitoring as it is considered that the above measures will be sufficient to ensure that there is no dust impact on local human or ecological receptors. Contact details for the site manager will be provided at the entrance to the site and local residents/public will be encouraged to report any off-site dust deposition issues. Any air quality complaints made during the works will be logged, investigated and followed up with measures to limit emissions, where appropriate.

There will also be some exhaust emissions generated from use of excavators, HGVs and vibrating rollers during the demolition and construction phase. These impacts will be temporary in duration and are not considered likely to give rise to significant air quality impacts following the implementation of the following measures:

- All machinery will be suitably maintained to ensure that emissions of engine- generated pollutants shall be kept to a minimum in accordance with Measures Against the Emission of Gaseous and Particulate Pollutants from Internal Combustion Engines to be Installed in Non-Road Mobile Machinery (2002/88/EC) and Emissions of Pollutants from Diesel Engines (2005/21/EC)
- Vehicles will not be left unnecessarily idling on the site and trucks removing demolition waste from the site will turn off engines during loading.
- Pre-start checks on all machinery will be conducted on a daily basis prior to commencement of activities.
- Low emission fuels will be used insofar as possible; and
- Mains power will be used for small plant and equipment, where possible, in preference to generators.

5.8.2 Effective material storage and handling

The storage and handling of construction materials can be a significant dust emission source. The adoption of appropriate dust control measures will greatly reduce dust emissions from these sources and ensure that any adverse effects are reduced or eliminated.

Handling and storage areas will be sited as far away as is reasonably and practically possible from public/residential areas. Handling and storage areas will be actively managed and fine, dry material will be stored inside enclosed shield/coverings or within a central storage areas. Any storage areas that are not enclosed will be covered/sheeted. Prolonged storage of debris on site will be avoided. Vehicles carrying dusty materials into or out of the site shall be sheeted down to prevent any escape of materials.

5.8.3 Construction Plant

Construction plant can be a significant source of emissions although control measures can be implemented to minimise any adverse impacts. The following measures will be employed:

- Site plant and equipment will be kept in good repair and maintained in accordance with the manufacturer's specifications. Allowing for economic constraints, the plant will be selected on the basis of which has the least potential for dust and other emissions;
- Plant will not be left running when not in use (i.e. no idling);
- Plant with dust arrestment equipment will be used where practical;
- Where practical, cleaner fuels will be employed for construction plant; and
- Enclosures will be erected around major construction plant items as appropriate and where practical.

5.8.4 Vehicle Movements

Vehicle movements may result in dust emissions (by re-suspending dust from the road or from spilling dusty loads) and exhaust emissions. However, a number of control measures can be adopted to eliminate or minimise such emissions:

- Wheel washing facilities close to the site entrance to prevent mud from construction operations being transported on to adjacent public roads;
- Any spillages from vehicles leaving the site will be promptly removed;
- Damping down of site haul roads by water bowser during prolonged dry periods;
- Regular cleaning of hard-surfaced site entrance roads;
- Ensuring that dusty materials are transported appropriately (e.g. sheeting of vehicles carrying spoil and other dusty materials);
- Confinement of vehicles to designated haul routes within the site;
- Restricting vehicle speeds on haul roads and other unsurfaced areas on the site;
- All vehicles will be maintained to minimise exhaust emissions;
- Hoarding and gates to prevent dust breakout; and
- Appropriate dust site monitoring will be included within the site management practices to inform site management of the success of dust control measures used.

5.8.5 Dust

Dust control will be best achieved at sources, and if possible, activities will be carried out in a manner so as to preclude dust generation. Dust levels will be controlled and the development operated in a way which is not detrimental to the amenity of local residents. If dust is generated, steps will initially be taken to protect workers in the vicinity who shall, as a minimum, be issued with dust masks. Dust will, if possible, be contained in the location in which it is generated, and be controlled and managed therein. Dust suppression measures will be carried out to ensure that dust nuisance affecting neighbouring properties is minimised and the following control measures and good management practices, will be employed:

- Undertake daily on-site and off-site inspections, where receptors (including roads) are nearby, to monitor dust, record inspection results in the site inspection log. This should include regular dust soiling checks of surfaces such as street furniture, cars and windowsills within 100 m of site boundary, with cleaning to be provided if necessary.
- Increase the frequency of site inspections by the person accountable for air quality and dust issues on site when activities with a high potential to produce dust are being carried out and during prolonged dry or windy conditions.
- Site operations will be planned to take into account local topography, prevailing wind patterns and

local sensitive receptors e.g., schools, residences and ecological designated sites;
- Burning of materials on site will be prohibited;
- Loading and unloading will only be permitted in designated hard standing areas;
- Provision of water sprays and wind/dust fences where possible, particularly in dust sensitive locations;
- Stockpiles of soil, arising or other granular material will be sheeted, covered and/or treated to prevent dust raising that may cause risk to health or nuisance to the public;
- Hoarding will be erected around construction activities to minimise dust blow from site;
- An appointed person will oversee/control activities and handle complaints;

5.8.6 Noise Management

All works will be carried out being mindful of potential noise impacts from construction activities. Plant and machinery operating on the site will be the main source of noise during the works most notably during any earthworks, rock breaking etc. The works will be carried out in accordance with the requirements of BS5228-1:2009+A1:2014 Code of Practice for Noise and Vibration Control on Construction and Open Sites.

Noise and vibration levels will be controlled as set out below to ensure that the Development is operated in a way that minimises detrimental impact to the amenities of local residents.

5.8.7 Construction Noise

Infrastructure works, excavations, and foundation construction will be among the most significant activities. Although concreting operations will also give rise to noise, the levels generated would not be significant.

In order to minimise the noise impact further on the adjoining properties it is proposed that heavy equipment and machinery including pneumatic drills, construction vehicles and generators only work between the hours shown below. In addition, no deliveries and/or removal of materials will occur outside of these hours. All plant and equipment will be maintained in good working order in accordance with BS.5228 in order to minimise air and noise emissions.

The primary measure to limit the potential impact of noise from the works will be to limit working hours to the suitable daytime hours outlined earlier in the Report. This will reduce the potential noise impact on the local human receptors by avoiding early morning noise generating activities.

During construction, the measures summarised below, are to be employed:
- Details of construction activities, prediction levels/assessments will be discussed with the relevant authority, both prior to construction and during construction. Detailed construction programmes will be available in advance of work starting on site;
- Where work outside of agreed hours or likely to exceed specified noise limits is necessary then this shall only proceed subject to notification to Cork County Council Environmental Health Officer and local residents, and approval given.
- Except for emergency situations, notification will be in advance of any requirement for out of hours/noisy working.

- Where the potential for noise exists, 'Best Practicable Means' will be used to reduce noise to achieve compliance consistent with the recommendations of BS 5228, and may include:
- Careful selection of plant items, construction methods, programming, and implementing a 'noise and vibration protocol', which outlines monitoring frequency and action levels etc;
- Design and use of site hoarding and screens/noise barriers, to provide acoustic screening at the earliest opportunity;
- Ensuring that HGV drivers turn off engines when parked for prolonged periods on the site and turning off engines during loading of demolition waste materials.
- Choice of routes and programming for the transport of construction materials.
- Using minimal impact reversing alerts and avoiding the use of horns, where possible. These alerts, however, are essential safety measures for busy construction sites and cannot be avoided.
- Choosing equipment with reduced noise output and silencers/dampeners.
- Using radio contact across the site to avoid workers shouting or whistling.
- Maintaining plant and equipment in good condition to ensure noise emissions are as per plant specifications and that all noise attenuation features are in good working order; and
- Use of mains power supply instead of generators insofar as is possible.

Contact details for the site manager will be provided at the entrance to the site and local residents/public will be encouraged to report any noise issues. Any noise complaints made during the works will be logged, investigated and followed up with measures to limit noise emissions, where appropriate.

5.8.8 Noise Limits

Noise Limits to be applied for the duration of construction works are as set out in the National Roads Authority (NRA) Guidelines for Treatment of Noise and Vibration in National Roads Schemes (summarised below in Figure 9.1) and BS 5228-1:2009+A1:2014 (Code of Practice for Noise Control on Construction and Open Sites).

Days & Times	$L_{Aeq(1hr)}$dB	$L_{pA(max)\ slow}$ dB
Monday to Friday 07.00 to 19.00hrs	**70**	**80[2]**
Monday to Friday 19.00 to 22.00hrs	**60[2]**	**65[2]**
Saturday 08.00 to 16.30hrs	**65**	**75**
Sundays and Bank Holidays 08.00 to 16.30hrs	**60[2]**	**65[2]**

Table 0.1 TII Guidelines for Maximum Permissible Noise Levels at the Façade of Dwellings during Construction.

BS 5228 applies a noise limit of 70 dBA between 07:00 am and 19:00 pm outside the nearest window of the occupied room closest to the site boundary in suburban areas away from main road traffic and industrial noise. For the duration of construction works, a daytime noise limit (07:00 am to 19:00 pm) of 70 dBA shall apply (in accordance with the requirements of BS 5228 and generally in agreement with the TII guidelines).

5.8.9 Vibration

It is not anticipated that there will be any significant vibration impacts from the proposed works. Some minor vibrations will be generated from heavy plant and machinery but it is anticipated that there will be no piling or significant percussion plant required which could have the potential to cause vibration effects or damage.

Vibration Limits to be applied for the duration of construction works are as set out in BS 5228-2:2009+A1:2014 (Code of Practice for Vibration Control on Construction and Open Sites) and BS 7385: 1993 (Evaluation and measurement for vibration in buildings Part 2: Guide to damage levels from ground borne vibration). Allowable vibration during the construction phase is summarised below in Figure 9.2. These will be checked at a minimum of twice a week.

Allowable vibration velocity (peak Particle Velocity) at the closest part of any sensitive receptor to the source of vibration, at a frequency of		
Less than 10 Hz	10 to 15Hz	50 to 100Hz (and above)
8mm/s	12.5mm/s	20mm/s

Table 0.2 TII Guidelines for Allowable Vibration (in terms of peak particle velocity) at the closest part of sensitive property to the source of vibration

5.9 Lighting

All temporary lighting installed within the proposed development site will be completed with sensitivity for local wildlife while still providing the necessary lighting for human usage during construction.

5.9.1 Lighting Mitigation Principles

Temporary lighting design should be flexible and be able to fully take into account the presence of protected species. Therefore, appropriate lighting, as detailed below, should be used within a proposed development and adjacent areas with more sensitive lighting regimes deployed in wildlife sensitive areas in accordance with the mitigation measures outlined in the Bat Survey.

- Construction should be limited to daylight hours in order to minimise adverse effects on nocturnal fauna.
- Light Emitting Diodes (LED's) will be used and the brightness will be set as low as possible.
- Lighting will be kept to the minimum necessary for health and safety purposes
- Lighting will be only be utilised during working periods where required and will be shut down during non-working periods.
- Lighting will be directed away from landscaped areas and retained sections of hedgerows, treelines, and mature parkland areas.
- LED luminaires will be used because they are highly directional, lower intensity, good colour rendition and dimming capability.
- Luminaires will feature peak wavelengths higher than 550nm to avoid the component of light most disturbing to bats.

- The use of specialist bollard or low-level downward directional luminaires should be considered in bat sensitive areas to retain darkness above.
- Column heights should be carefully considered to minimise light spill. The shortest column height allowed should be used where possible.
- Only luminaires with an upward light ratio of 0% and with good optical control should be used.
- Luminaires should always be mounted on the horizontal, i.e. no upward tilt.
- Any external security lighting should be set on motion-sensors and short (1min) timers.
- As a last resort, accessories such as baffles, hoods or louvres can be used to reduce light spill and direct it only to where it is needed.
- Monitoring of light levels along the treelines and hedgerow areas will be undertaken pre-construction, during-construction and post-construction to identify any areas where light spill is affecting background levels. Where monitoring detects light spill is affecting these habitat areas, remedial measures will be implemented to ensure that background light levels are maintained. All lumina Lighting Extract - ires used should lack UV/IR elements to reduce impact.

5.10 Environmental Risk Assessment & Management Plan

The potential risks are typically assessed under a number of headings, including but not limited to:

- Noise – proximity of neighbouring residences
- Nuisance caused by dust emissions
- Impact of traffic - deliveries and removal of material
- Impact of traffic – road safety and cleanliness
- Hazardous Materials –storage
- Containment – spillage from oil tanks
- Containment – potentially turbid surface water
- Containment – concrete truck washings
- Disposal of foul water from compound
- Disposal of demolition waste and surplus materials

The risks are to be discussed on site during construction as if unmitigated and then with proposed mitigation measures in place. The nature of these risks will change as the project progresses. For instance, in the earthworks phase the principal concerns would be noise, dust/mud and turbid surface water runoff, whereas in later phases issues such as traffic control and waste management would be seen as critical.

An Ecological Clerk of Works (ECoW) will inspect the Site in advance of works commencing and will undertake Site inspections as required during the works, to ensure that they will be completed in line with the mitigation measures detailed within this CEMP, the NIS & the Ecological Impact Statement.

Risk Matrix

The above section outlines the type of risks associated with the project at this stage of development. These can then be tabulated to give a qualitative assessment of these risks, based on the potential consequences and likelihood of occurrence. The matrix identified in Table 12.1 can be used as a basis to classify the risk. The objective is that following implementation of the appropriate mitigation measures all identified risks are in the Low-Intermediate range, and are therefore considered acceptable.

	H	Low-Med (Intermediate)	Medium (Unacceptable)	High (Unacceptable)	Emergency (Unacceptable)
Likelihood	**M**	Low	Low-Med (Intermediate)	Medium (Unacceptable)	High (Unacceptable)
	L	Low	Low	Low-Med (Intermediate)	Medium (Unacceptable)
	LL	Low	Low	Low	Low-Med (Intermediate)
		LL	L	M	H
		Consequence			

Table 0.3 Risk Matrix

5.11 Additional Measures

5.11.1 Protection for Trees, Hedgerows and Treelines

Where trees and hedgerow treelines adjoining the site, are to be retained and protected from unnecessary damage. During construction, care will be required to protect trees from both direct and indirect disturbance. The following protection measures will be adhered to during the works:

- Trees, treelines, and hedgerows to be retained that will be located within close proximity to the construction areas will be fenced off by effective construction proof barriers before construction works commence. These barriers will cover an area larger than the branch spread of the protected tree, with a radius of half the tree's height, measured from the trunk. These barriers will remain in place for the duration of the works to prevent accidental disturbance and define the limits for construction vehicles and other construction staff;
- Care will be required to prevent disturbance to root systems - excavation within the protected area will be done by hand and backfilled as soon as possible. No roots will be cut within these barriers. Outside of the construction proof barriers, no roots exceeding 25mm will be cut without approval.
- Where machinery access must encroach areas within proximity to the retained hedgerows / treelines or the mixed broadleaved woodland, a Root Protection Area (RPA) will be established and suitable ground protection which will be put in place to prevent any significant soil compaction or root damage.
- When tree removal is required near retained trees, felling must be carried out in small sections to avoid damage to adjacent trees.
- Trench digging or other excavation works for services etc. will not be permitted within close proximity to retained trees and hedgerows unless approved and supervised using methods outlined in BS5837: Trees in relation to design, demolition, and construction (2012);
- No materials, equipment or machinery will be stored within close proximity to retained hedgerows and trees;
- For treeline protection measures to work effectively, all personnel associated with the operation of heavy plant machinery must be familiar with the above principles for the protection of treelines;

- Care will be taken when planning site operations to ensure that wide or tall loads or plant with booms, jibs and counterweights can operate without encountering retained trees. Such contact can result in serious damage to them and might make their safe retention impossible;
- Notice boards, wires, etc. will not be attached to any trees. Site offices, materials and contractor parking will all be outside the Construction Exclusion Zone; and,
- The retained trees will be assessed following the completion of the construction works.

5.11.2 Protection & Measures for Terrestrial Mammals

Where deep excavations will be required on-site, appropriate measures to protect mammals from ingress will be installed and if unidentified burrows are identified within the works area during construction, the project ECoW will be contacted for advice.

5.11.3 Measures for Bats

In order to ensure that the works in relation to the Proposed Development do not have significant impacts on bats, the following construction procedures and mitigation measures will be implemented. These measures are in line with the NRA (now TII) Guidance for Bats (National Roads Authority, 2006).

- Any trees with Potential Roost Features (PRF) to be removed will be supervised by the ECoW and will be felled using hand tools only. The ECoW will visually inspect the trees following felling for the presence of bats. Should bats be found, the NPWS will be consulted;
- The findings of any required bat surveys will be submitted to the planning authority prior to the commencement of the demolition works; and,
- Following the installation of the lighting for the Proposed Development, a suitably qualified Ecologist should undertake a further Site inspection in order to check the lighting patterns and lux levels along the Site boundaries to ensure there are no impacts to bats or other nocturnal species.
- Night time lighting will be required during the winter months, between November and February, when sunset is before the 18:00 hours. It is noted that the time of year when lighting will be required overlaps with periods of very low bat and nocturnal invertebrate activity during winter months. Nevertheless, construction phase lighting will be positioned such that light spill to existing boundaries hedgerows along the northern and eastern boundary is avoided. This will ensure the potential for disturbance to nocturnal species from light spill is eliminated.

5.11.4 Measures for Birds

In order to ensure no impacts, occur to breeding birds as a result of the Proposed Development, the following mitigation measures will be put in place:

- Any vegetation clearance required will take place outside of the nesting bird season (1st March to 31st August), as per Section 40 of the Wildlife Act 1976, as amended by Section 46 of the Wildlife (Amendment) Act 2000;
- In the event that works need to be undertaken within the main breeding season, this would be undertaken in consultation with NPWS and under the supervision of the project ECoW;

- Prior to the vegetation removal the ECoW will inspect the Site and the management and removal of vegetation at the Site will be undertaken under the direction of the project ECoW in a systematic way to ensure that retained areas of vegetation are not damaged by the works; and,
- Should birds' nest within the active working area during the construction phase, works within the area will stop within the area and the project ECoW will be consulted.

It should be noted that birds may be subject to some temporary minor disturbances during construction. However, as birds are a highly mobile species, should any birds be impacted, these birds will move away from the disturbance to a more suitable area, therefore, this is not considered likely to be significant.

5.11.5 Measures for Invasive Species

The following best practice Site hygiene and biosecurity measures will be in place to avoid the spread of any Invasive Alien Plant Species (IAPS) into the Site or surrounding areas. Reference shall also be made to chapter 10 of the EIA which details further requirements.

- To reduce the likelihood of invasive species (IAPS) being introduced to the Site from construction works on other sites, all soils/materials being introduced to the Site will be sourced from a certified invasive flora-free source Site, to ensure no introduction of invasive plant materials to the Site occurs. All plant and equipment will be visually inspected before being permitted on Site.
- Vehicular movements will be restricted to the footprint of the Proposed Development. Construction plant and vehicles will not encroach onto areas that are not permitted for the development.
- All vehicles leaving the Site and/or transporting infested IAPS soil/materials must be thoroughly pressure-washed with clean water in a designated wash-down area before being used for other work. Mud and organic debris will not be allowed to accumulate on tyres, wheels or under wheel arches. Any machinery or equipment returning from a different construction Site will be cleaned, steam washed and visually inspected again before re-entering the Site.

All works during the construction phase will be carried out in accordance with the following guidelines:

- The Management of Invasive Alien Plant Species on National Roads – Technical Guidance (TII, 2020);
- NRA (2008). Guidelines for the Management of Waste from National Road Construction Project. National Roads Authority;
- Biosecurity protocols available for aquatic and riparian species available on the Control of Aquatic Invasive Species and Restoration of Natural Communities in Ireland (CAISIE) www.caisie.ie, and
- All maintenance operators will carry out their works under the guidance of the Inland fisheries Ireland Biosecurity Protocol for Field Survey Work. (2011) to ensure no negative impacts are caused to other watercourses. http://www.fisheriesireland.ie/fisheries-research-1/73- biosecurity-protocol-for-field-survey-work-1

During site surveys the only non-native species recorded on site was *Buddleja davidii*. The construction phase of the project has the potential to result in the spread of these species in the wider vicinity of the project site. Therefore to mitigate against any further spread all Buddleja davidii will be removed from site prior to the commencement of the construction phase. The felling of these species will be completed during the winter season when viable seed is not present on the plants. The felling operations will also coincide with the non-breeding bird season and will therefore not have the potential to result in

disturbance to active nests and chicks. The root stock of Buddleja davidii will be removed from the ground during the felling operations. Felled trees shall be stockpiled locally in the vicinity of felling to minimise movement throughout the site. All *B. davidii* material will be stockpiled separate to other vegetation cleared on site and shall be removed from site for disposal.

It is noted that all plant and equipment will remain on-Site for the duration of the stripping and earthworks stage of the Construction Phase.

- 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 on stockpiles as required if particularly dusty activities are necessary during dry or windy periods to prevent seed dispersal of IAPS.
- Personnel working on the Site will ensure that all PPE including clothing and footwear brought to the Site is to be clean and dry. All PPE is to be visually inspected, and any attached vegetation or debris removed. Work boots will be dipped in or scrubbed with a disinfectant solution and thoroughly dried afterwards before being used on the Site for the first time, ensuring they are visually free from soil and organic debris, to prevent the inadvertent spread of IAPS material.
- Construction personnel involved in works are to be trained in basic relevant invasive species identification, prevention, and management.
- Where any IAPS is identified within the footprint of the work, the appointed contractor is to develop and implement an appropriate method statement with regard to managing IAPS on-Site. Fencing and/or advisory signage is to be erected. Where stands are small, comprising individual plants, the use of signage may suffice.
- Cattle (Rumble) grids will be placed at vehicular exit gates during excavation to remove spoil from truck wheels leaving the Site.
- A street sweeper will attend the Site regularly to clean the road when there are truck movements in and out of the Site.
- Hard surface roads will be regularly swept to remove mud and aggregate materials from their surface.
- Public roads outside the Site will be regularly inspected for cleanliness and cleaned as necessary.

All IAPS management and control measures implemented on-Site during the Construction Phase are to be carried out strictly in accordance with best practice guidance as set out in 'The Management of Noxious Weeds and Non-native Invasive Species on National Roads' (TII (formerly NRA), 2010), 'The Management of Invasive Alien Plant Species on National Roads – Technical Guidance' (TII, 2020) and 'Best Practice Management Guidelines' by Invasive Species Ireland (2008).

5.12 Construction & Demolition Waste Management on Site

5.12.1 Site Clearance

The management of construction and demolition waste should reflect the waste management hierarchy, with waste prevention and minimisation being the first priority succeeded by reuse and recycling.

During site clearance and construction works, there are numerous opportunities for the beneficial reuse and recycling of the demolition 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.

5.12.2 Source of Fill & Aggregates

All fill and aggregate for the proposed development will be sourced from reputable suppliers. All suppliers will be vetted for;

- Aggregate compliance certificates/declarations of conformity for the classes of material specified for the proposed development
- Environmental management status and
- Regulatory and legal status of the company.

5.12.3 Prevention of Waste

The primary effort therefore should be to engage in waste prevention and reduce the amount of waste generated in the first place i.e. minimise the resources needed to do the job.

Prevention is financially advantageous as it reduces the purchase of construction materials and obviates the need to remove wastes from site. It is important to emphasise the potential for certain purchasing procedures to contribute to a reduction in excessive material wastage on site.

Examples include:

- ensuring materials are ordered on an "as needed" basis to prevent over supply to site;
- purchasing construction materials in shape, dimensions and form that minimises the creation of excessive scrap waste on site;
- ensuring correct storage and handling of construction materials to minimise generation of damaged materials/waste, e.g. keeping deliveries packaged until they are ready to be used;
- ensuring correct sequencing of operations; and
- assigning individual responsibility (through appropriate contractual arrangements) to sub-contractors for the purchase of raw materials and for the management of wastes arising from their activities, thereby ensuring that available resources are not expended in an extravagant manner at the expense of the main contractor.

5.12.4 Waste Streams

Waste materials generated on site will fall into three categories for management, these are:

- Re-use
- Recycle
- Landfill

Re-use

Waste material that is generated should be reused on site or salvaged for subsequent reuse to the greatest

extent possible and disposal should only be considered as a last resort. Initiatives should be put in place to maximise the efficient use/reuse of materials.

Recycling

There are a number of established markets available for the beneficial use of C&D waste:

- waste timber can be:
    - recycled as shuttering or hoarding, or
    - sent for reprocessing as medium density fibreboard;
- waste concrete can be utilised as fill material for roads or in the manufacture of new concrete when arising at source; and
- in addition, the technology for the segregation and recovery of stone, for example, is well established, accessible and there is a large reuse market for aggregates as fill for roads and other construction projects.

Landfill

If either of the above cannot be satisfied then the only option left is to send the surplus materials to landfill.

5.12.5 Overall Management of Construction and Demolition Waste

Waste minimisation, reuse and recycling can best be managed operationally by nominating a "Construction and Demolition Waste Manager" to take responsibility for all aspects of waste management at the different stages of the Project.

This C&D Waste Manager may well be a number of different individuals over the life-cycle of the Project, but in general is intended to be a reliable person chosen from within the Contracting Team, who is technically competent and appropriately trained, who takes the responsibility to ensure that the objectives and measures within the Project Waste Management Plan are delivered and who is assigned the requisite authority to secure achievement of this purpose.

Specifically, the function of the C&D Waste Manager will be to communicate effectively with colleagues in relation to the aims and objectives for waste management on the Project. The primary responsibility for delivery of the objectives of the Waste Management Plan will fall upon the C&D Waste Manager designated at the demolition/ construction stage. A key objective for the C&D Waste Manager should be to maintain accurate records on the quantities of waste/ surpluses arising and the real cost (including purchase) associated with waste generation and management.

The preparation, application and documentation of a Project Waste Management Plan should enable all parties - including contractors, designers, and competent authorities - to learn from the systematic implementation and assessment of best practice, particularly through the recording of summary information on performance outcomes.

5.13 Waste Generated during Works

Waste Types	Waste Category	European Waste Code (EWC)	Colour Code	Origin of Waste
Tarmac	Inert	17 01 06		Site Strip & Demolition Works
Concrete	Inert	17 03 01		Site Strip
Brick/Block	Inert	17 01 06		Site Strip & Demolition Works
Timber	Active/Bio	17 02 01		Construction & Demolition Works
Glass	Active/Bio	17 02 02		Construction & Demolition Works
Subsoils	Inert	17 05 04		Site Strip & Excavation Works
Metals	Active/Bio	17 04 07		Construction & Demolition Works
Plasterboard	Active/Bio	17 08 02		Construction & Demolition Works
Packaging		15 01 01 (Note 1) 15 01 02 (Note 2) 15 01 03 (Note 3)		Construction Works
Mixed		17 09 04		Construction & Demolition Works

Table 5.4 Waste Streams Note 1: 15 01 01 is the EWC code for paper and cardboard packaging**,** Note 2: 15 01 02 is the EWC code for plastic packaging**,** Note 3: 15 01 03 is the EWC code for wooden packaging

5.13.1 Site Segregation

A specific area on the site shall be laid out and labelled to facilitate the separation of materials for potential recycling, salvage, reuse and return. Recycling and waste bins are to be kept clean and clearly marked in order to avoid contamination of materials. The labelling systems shall be the Waste Awareness Colour Coding Scheme. The skips will be clearly identified to ensure the workforce will deposit the correct materials into the correct skip. Skips for segregation of waste for the construction works will be:

- Wood
- Metal
- Brick/rubble
- Canteen waste

As works progress and other trades come to site other skips will be placed to enable certain waste to be removed from site. This is likely to include:

- Plasterboard

- Paper and cardboard (bagged up)

5.14 Waste Cycle

Site Enabling Works (including Demolition)	
Waste Types	**Waste Stream**
Concrete	Crushed & Re-used on site
Tarmac	Landfill
Stone/Blocks	Crushed & Re-used on site
Timber	Recycled
Subsoils	Re-used on site or sent to Landfill
Metals	Scrap Value
Plasterboard	Landfill

Construction Works	
Waste Types	**Waste Stream**
Plasterboard	Return/Landfill
Bricks/Blocks	Landfill
Timber	Recycled
Cardboard	Landfill
Mortar	Landfill
Metals	Scrap Value
Paints	Landfill
Soils	Re-used on Site/Landfill

The skips will be monitored to ensure that contamination of segregated skips does not occur.

The client and contractor will need to continually review the type of surplus materials being produced and where they can change the site set up to maximise on re-use or recycling and ensure that the use of landfill will be the last resort.

5.14.1 Transport of Waste

Any of the waste that is removed from the site (including inert waste) shall only be transported by an individual or company which holds a valid Waste Collection Permit to transport such material. The Contractor should ensure that any person transporting waste off the site should always have a copy of their Waste Collection Permit on the vehicle.

5.14.2 Permitted/Licensed Waste Collection Used

Any of the waste that is removed from the site (including inert waste) shall only be transported by an individual or company which holds a valid Waste Collection Permit to transport such material. The Contractor should ensure that any person transporting waste off the site should always have a copy of their Waste Collection Permit on the vehicle.

5.14.3 Permitted/Licensed Waste Facilities Used

Any waste (including inert waste) removed from any site shall only be taken to facilities which hold either a valid Waste Facility Permit issued by Cork City & County Council or a Waste License issued by the EPA.

5.14.4 Site Recording

The Contractor shall be required to ensure that a record shall be maintained of all waste removed from the site. The record shall include information on the type of waste removed, the quantity removed, the date removed, and details of whether the waste in question was being removed for either disposal or recovery/recycling, details of the transporter of waste, details of the facility to which waste is removed (including license or permit number). A location shall be identified where all records in regard to waste transport, recycling, disposal will be held for inspection.

Details of the inputs of materials and outputs of wastes from the project will be investigated and recorded in a Waste Audit, which will identify the amounts, nature and composition of the waste generated. The audit will examine the manner in which the waste is produced and how management practices may contribute to the production of waste. The measured waste quantities will be used to quantify the costs of management and disposal in a Waste Audit Report, which will also record lessons learned for future projects.

A record of all waste movements from the site will also be maintained and copies of the waste transfer dockets will be held on site. The Project Environmental Manager will ensure that all waste haulage vehicles are identified on the waste collection permit and that the waste description and associated List of Waste code stated on the waste transfer docket are correct.

Any incidents resulting in a potential negative impact on soils or groundwater will be notified immediately to the Project Environmental Manager and the Site Manager. Spill kits will be used where possible to clean up any release and measures taken to ensure that any release does not reach a watercourse or surface water drain. Cork County Council will be notified of any such incident which has the potential to cause a negative impact.

A record of any complaints received in relation to construction works will also be maintained and categorised (e.g., noise, property damage, traffic, dust etc.) within a central Site Complaints Log. The log will include the following key details:

- Name, address and contact details of the complainant (with the complainant's permission).
- Brief outline of the complaint.
- Date of complaint.
- Name of person receiving complaint details; and
- Agreed timeline for response to the complaint.

Any complaints made will be notified to the Site Manager and the Project Environmental Manager immediately and a plan put in place to investigate and seek to resolve the complaint. The Site Manager

will also notify the Developer of complaints received. The complainant, Developer and other stakeholders will be kept informed of the progress in resolving the issue.

Hard copy folders will be maintained on site for inspection by the planning authority at any time.

5.15 Residual Impacts

Following good construction practices and the proposed mitigation measures previously described in this chapter, the residual effects on the surrounding area during construction can be considered as minimum.

The design of the proposed development follows all recommended guidelines, therefore, it is considered that there is no significant residual effect during operational phase.

The proposed development will have a long-term positive impact on the existing environment by creating high quality residential units to cater for the needs of a growing population and responding to a significant housing need and demand in the locality and the region, while occupying a presently underutilised zoned site at an appropriate location for sustainable development.

5.16 Monitoring

Proposed monitoring during the construction phase are as follows:

- Adherence to the Construction Environmental Management Plan (CEMP)
- Inspection of fuel / oil storage areas and continued maintenance by a suitably qualified sub-contractor
- Monitoring cleanliness of adjacent road network, implementation of dust suppression and vehicle wheel wash facilities
- A Site Foreman/Project Manager will be retained on the site to conduct periodic inspections of the construction site to ensure that any hazardous materials stored on the construction site are stored within appropriate secondary containment, and that any surface water discharged off site during the construction phase is free from excessive sediment.

If the suggested mitigation and control measures as described earlier are put in place and a risk assessment is carried out in advance of and during the works, the significance of these impacts will short term and slight during the construction phase.

5.17 Cumulative Impacts

The potential cumulative impacts of the relevant plan for the area were assessed, which is considered to be the Cork County Development Plan The potential cumulative impacts on material assets have been assessed having considered other permitted and planned developments in the surrounding area. The nearby proposed and permitted developments considered are as follows:

Application Reference	Location	Description	Possible Cumulative Impact
23/20, ABP-318260-23	The Miles Estate, the Miles Road, Clonakilty	Permission granted for the construction of 93no. dwellings and a single storey cheche.	No works have commenced as yet
18/605	The Miles Estate, the Miles Road, Clonakilty	Permission granted for the construction of 77 no. dwelling houses, childcare facility and all ancillary site development works. This permission was extended under Application Register Reference 23/452.	Construction completed.
18/703	An Sruthean Beag, Cloheen, Clonakilty	Permission granted for the construction of 99no. dwellinghouses and a crèche, including all associated site works.	Construction completed.
	Pairc Thiar	Part 8 Development by Cork County Council for the construction of 52no. dwellings.	Construction completed.

Table 0.5 Permitted Developments In The Surrounding Area

Cumulatively with other surrounding, permitted, planned and existing development, it is predicted that the proposed development will contribute to the improvement of the overall urban structure and fabric and will benefit the surrounding area through improvements to the public realm and the provision of additional cyclist and pedestrian infrastructure. Where the mitigation measures referenced in this chapter have been implemented the cumulative effects of development on electrical supply, telecoms, wastewater, water supply and stormwater runoff are anticipated to be neutral in the long-term.

5.18 Difficulties Encountered in Compiling the Chapter

The lack of accurate record maps showing the surface water services in the area required a series of site visits and walkovers to locate routes and outfall locations of the network.

5.19 References

This chapter has been prepared in accordance with the overarching EIAR guidance and in accordance with, but not limited to, the following relevant guidelines:

BS 5837:2012 – *Trees in relation to design, demolition and construction – Recommendations*

BS 6031:2009 – *Code of practice for earthworks*

Construction Industry Research and Information Association (CIRIA) C532 – *Control of water pollution from construction sites: guidance for consultants and contractors*, CIRIA C648 – *Control of water pollution from linear construction projects*, CIRIA C741 – *Environmental good practice on site (4th edition)*, CIRIA C753 – *The SuDS Manual*

Health and Safety Authority (HSA) – *Guidelines on the Procurement, Design and Management Requirements of Construction Regulations*

Enterprise Ireland BPGCS005 – *Best Practice Guidelines for Construction Sites: Storage and Handling of Fuels and Oils*

Transport Infrastructure Ireland (TII) – *Guidelines on the Management of Waste from National Road Construction Projects*

Irish Water – *Standard Details & Codes of Practice for Developers*

National Parks and Wildlife Service (NPWS) – *Guidelines for the Protection of Bats during the Development Works*

Bat Conservation Ireland – *Best Practice Guidelines for the Use of Artificial Lighting in Areas of Bat Activity*

Department of Housing, Local Government and Heritage (2021). *Construction and Demolition Waste Management – A Guidance Document.*

Greater Dublin Strategic Drainage Study (GDSDS). *Technical Documents*. Dublin City Council (2005). https://www.dublincity.ie/residential/environment/water-waste-and-environment/drainage/gdsds

Transport Infrastructure Ireland (TII). *DN-STR-03001 – NRA Bridge Design Specification.* https://www.tii.ie/technical-services/design-standards/bridge-structures/

Office of Public Works (OPW). *Engineering Guidelines for Flood Risk Management Works.* https://www.opw.ie/en/flood-risk-management/

Uisce Éireann (2022). *Code of Practice for Water & Wastewater Infrastructure – Design, Construction and Asset Handover Requirements.* Irish Water.

Uisce Éireann (2022). *Standard Details for Water & wastewater Infrastructure.*

Transport Infrastructure Ireland (TII) (formerly NRA) (2014). *Guidelines for the Treatment of Noise and Vibration in National Road Schemes.* Dublin: TII.

BS 5228-1:2009+A1:2014 – Code of Practice for Noise and Vibration Control on Construction and Open Sites – Part 1: Noise. London: BSI.

BS 5228-2:2009+A1:2014 – Code of Practice for Noise and Vibration Control on Construction and Open Sites – Part 2: Vibration. London: BSI.

BS 7385-2:1993 – Evaluation and Measurement for Vibration in Buildings – Part 2: Guide to Damage Levels from Groundborne Vibration.

Construction Industry Federation (CIF) Ireland (2019). Code of Practice for the Management of Construction and Demolition Waste.

6. PLANNING POLICY

Contents

Figures, Plates and Tables

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6.1 Introduction

This chapter focuses on the key planning policies at national, regional, and local level that guide the nature and extent of the proposed Large-Scale Residential Development.

6.2 Project Description

The proposed Large-Scale Residential Development project is described in detail in **Chapter 4 - Proposed Development**.

6.3 Planning Context

The key provisions of national, regional, and local planning policy as they relate to the proposed development are set out in the following sections. The principal guiding international, national, regional and local documents are listed below:

- Project Ireland 2040 - National Planning Framework - First Revision (2025)
- Housing For All (2021)
- Climate Action Plan (2025)
- Urban Development and Building Height Guidelines (2018)
- Sustainable Urban Housing Design Standards for New Apartments, Guidelines for Planning Authorities (2023)
- Sustainable and Compact Settlements, Guidelines for Planning Authorities (2024)
- Design Manual for Urban Roads and Streets (2019)
- Guidelines for Planning Authorities on Childcare Facilities (2001)
- The Planning System and Flood Risk Management (2009)
- The EU Habitats Directive (92/43/EEC) and the EU Birds Directive (79/409/EEC)
- Regional Spatial and Economic Strategy for the Southern Region (2020)
- Cork County Development Plan 2022-2028

6.3.1 National Planning Framework – First Revision, 2025

The National Planning Framework (NPF), which forms part of Project Ireland 2040, is the national level statutory plan guiding land use and sustainable development in Ireland for the next two decades (Department of Housing, Local Government and Heritage, 2020).

The NPF is guided, in part, by the aim of achieving regional parity in the country by significantly growing the population of both the Southern Region and the Northern and Western Region over the next two decades, to counterbalance the dominance of the Greater Dublin Area.

It sets out a targeted population growth of an additional 300,000 people in the Southern Region of Ireland by 2040.

In pursuing this population growth target, the NPF sets out to deliver 50% of our future development within the fiver major cities, with the remaining 50% to be delivered and accommodated within our larger and smaller rural towns.

In pursuing the National Policy object of delivering compact growth, the NPF sets out to deliver 40% of our new homes within existing settlement footprints.

However, the NPF sets out to deliver the remaining 60% of new residential development at the edge of settlements and in rural areas.

In addition to this, the NPF sets out the following national objectives in relation to the future development in Ireland:

> ***National Policy Objective 12:*** *Ensure the creation of attractive, liveable, well designed, high quality urban places that are home to diverse and integrated communities that enjoy a high quality of life and well-being.*
>
> ***National Policy Objective 13:*** *Develop cities and towns of sufficient scale and quality to compete internationally and to be drivers of national and regional growth, investment, and prosperity.*
>
> ***National Policy Objective 14:*** *Regenerate and rejuvenate cities, towns and villages of all types and scale as environmental assets, that can accommodate changing roles and functions, increased residential population and employment activity and enhanced levels of amenity and design quality, in order to sustainably influence and support their surrounding area.*

Further to this, in relation to the development of housing, the NPF outlines that there is an acute need to develop good quality housing in suitable locations which can support diverse communities. In relation to the development of housing the NPF sets out the following objectives:

> ***National Policy Objective 42****: To target the delivery of 50,000 additional homes per annum to 2040.*
>
> ***National Policy Objective 43:*** *Prioritise the provision of new homes at locations that can support sustainable development and at an appropriate scale of provision relative to location.*

The NPF as outlined, prioritises the development of housing within existing settlements with a view to creating compact settlements which provide for a high quality of residential amenity for both existing and future residents.

6.3.2 Housing for All, 2021

On 2nd September 2021 the Government launched its current national housing policy document in the form of "*Housing for All – A New Housing Plan for Ireland*" (HFA). This is the Government's revised policy and investment plan (replacing the 2016 "*Rebuilding Ireland: Action Plan for Housing and Homelessness*") to address the housing crisis which has affected the country since 2014.

With regard to new housing supply, section 3 of the HFA states that over 300,000 new homes are needed by 2030 to address pressure on the housing market. This means 33,000 new homes per annum on average to 2030. The policy has four pathways to achieve this:

- supporting home ownership and increasing affordability
- eradicating homelessness, increasing social housing delivery, and supporting social inclusion
- increasing new housing supply
- addressing vacancy and efficient use of existing stock

It is considered that the subject development, which proposes 246no. residential units, contributes directly to Pathway numbers 1, 2 and 3 as set out in the policy document.

Leaving aside those homes earmarked for Part V, 197no. new homes are proposed to be constructed on site and advertised for sale. These homes will range in size from 1-bedroom apartments to 4-bed houses, and the prices will range accordingly. This aligns with Pathway no. 1 in that it will facilitate an increased level of home ownership in Clonakilty and will provide a variety of home types with a corresponding variety of prices.

50no. new homes are to be transferred to Cork County Council in order to meet the development's Part V obligations. This will contribute to the core objective of HFA, which aims to accelerate social housing, as well as Pathway no. 2 which addresses homelessness, through the delivery of additional social housing stock. It is therefore considered that the proposed development is fully compliant with and supportive of the government's housing action plan.

The proposed development also contributes to Pathway no. 3 as it proposes 246no. new homes which will lead to an increase in housing supply. This will then have a positive impact on the affordability of the area as well as the additional social homes which will alleviate some of the housing demand issues ongoing across County Cork.

6.3.3 Climate Action Plan, 2024

The Climate Action Plan 2025 (CAP25) is the fourth annual update to Ireland's Climate Action Plan 2019. The plan implements the economy-wide carbon budgets and sectoral emissions ceilings introduced in 2022 and includes a strategy for taking meaningful action to halve Ireland's greenhouse gas emissions by 2030, and reach net zero no later than 2050, as committed to in the Programme for Government.

Section 13.1 of the CAP notes that the residential sector is on track to meet its 2025 sectoral emissions ceiling. However, for commercial and public sector buildings the corresponding required emissions reduction is 2.9% per annum to stay within the 2025 sectoral emissions ceiling.

The proposed development will align with the NZEB standards, as well as the EU Energy Performance of Buildings Directive.

6.3.4 Urban Development and Building Height Guidelines, 2018

The *Urban Development and Building Height Guidelines* state that it is Government policy that building heights must be generally increased in appropriate urban locations. They also state that:

> *There is therefore a presumption in favour of buildings of increased height in our town/city cores and in other urban locations with good public transport accessibility.*

The Guidelines contain broad principles that planning authorities must follow in considering development proposals for buildings taller than prevailing building heights in urban areas. These broad principles are:

- Does the proposal positively assist in securing NPF objectives of focusing development in key urban centres?
- Is the proposal in line with the requirements of the relevant Development Plan?
- Where the relevant Development Plan or Local Area Plan pre-dates the Guidelines, can it be demonstrated that implementation of the pre-existing policies and objectives of those plans would undermine the objectives and policies of the NPF?

The majority of the existing built environment in Clonakilty is 2-storeys in height, with established 3-storey buildings throughout the town centre area.

As such, the proposed development does not include buildings taller than the prevailing building heights in Clonakilty. Furthermore, and as outlined in Section 6.3.1 of this chapter, the proposed development positively assists in securing NPF objectives to focus development in Cork County and aligns with the height strategy of the Cork County Development Plan.

6.3.5 Sustainable Urban Housing: Design Standards for New Apartments, Guidelines for Planning Authorities, 2023

Section 1.19 of the Guidelines states that Specific Planning Policy Requirements (SPPRs) contained in the Guidelines take precedence over any conflicting policies and objectives of development plans.

Section 2.4 of the Guidelines identifies intermediate urban locations as being generally suitable for medium-high density residential development of any scale that includes apartments to some extent

The proposed development site, which is located within a reasonable walking distance i.e., 10 minutes of Clonakilty town centre, can be classified as an intermediate urban location in terms of the Apartment Guidelines.

The proposed development includes 246no. residential units. Having regard to the Guidelines, the proposed development complies with the following SPPRs (as detailed in the Housing Quality Assessment prepared by Daly Barry Architects):

SPPR 1

- 13% of the apartments units are one-bedroom units. This is under the maximum upper limit of 50%.

SPPR 3

- All 1-bed apartments units meet the minimum required floor area of 45m^2
- All 2-bed apartments units meet the minimum required floor area of 73m^2

In addition to the above, we note that Section 3.6 states the following:

> *Accordingly, planning authorities may also consider a two-bedroom apartment to accommodate 3 persons, with a minimum floor area of 63 square metres, in accordance with the standards set out in Quality Housing for Sustainable Communities (and reiterated here in Appendix 1). This type of unit may be particularly suited to certain social housing schemes such as sheltered housing.*

As the Housing Quality Assessment details, a majority of the proposed apartments exceed the minimum internal floor area standards by 10% and all of the minimum floor areas for private amenity space for the various types of dwellings are met or exceeded.

SPPR 4

- 87% of the proposed apartments are dual aspect. This exceeds the minimum requirement of 50% in intermediate locations.

The elevation drawings detail the proposed development's compliance with the following SPPR:

SPPR 5

- All ground level apartment floor to ceiling heights are a minimum of 2.7m

The plan drawings detail the proposed development's compliance with the following SPPR:

SPPR 6

- All apartment buildings comply with the maximum limit of 12 apartments per floor per lift/stair core.

The Apartment Guidelines seek the delivery of more apartments across the country. In the Foreword to the Guidelines, the Minister for Housing, Local Government and Heritage envisages that the Guidelines, "*will assist in encouraging a move towards apartment living*". Furthermore, Section 1.7 of the Apartment Guidelines states the following:

> *It is therefore critical* [regarding achieving NPF population targets and compact growth] *to ensure that apartment living is an attractive and desirable housing option for a range of household types and tenures, building on and learning from experience to date, and that the economic and regulatory conditions are such that apartment development attracts both the investment and sustained demand for this form of housing by households, that will then result in greater delivery of apartments in Ireland's cities and towns and other appropriate locations.*

The proposed development, in providing 69no. new apartments units in Clonakilty, will go some way to address the chronic under provision of this housing typology in the town.

6.3.6 Sustainable and Compact Settlement Guidelines for Planning Authorities (2024)

The *Sustainable and Compact Settlement Guidelines for Planning Authorities* were published in January 2024 and replaced the *Sustainable Residential Development in Urban Areas Guidelines* issued in 2009.

With a view to creating compact and balanced residential developments and settlements, the Guidelines set out the appropriate density ranges for a range of settlement types, this includes:

> ***Key Town / Large Town - Suburban/Urban Extension***
> *Suburban areas are the low-density car-orientated residential areas constructed at the edge of the town, while urban extension refers to greenfield lands at the edge of the existing built-up footprint area that are zoned for residential or mixed-use (including residential) development. It is a policy and objective of these Guidelines that residential densities in the range 30 dph to 50 dph (net) shall generally be applied at suburban and urban extension locations of Key Towns and Large Towns, and that densities of up to 80 dph (net) shall be open for consideration at 'accessible' suburban / urban extension locations.*

With regard to quality design and placemaking, the Guidelines direct that:

- the urban design of settlements should support the transition away from private car use and support ease of movement for pedestrians, cyclists and public transport;

- the creation of sustainable communities requires a diverse mix of housing and variety in residential densities with a focus on housing types that can facilitate compact growth and provide greater housing choices that respond to the needs of single people, families, older people and people with disabilities;

- natural features and biodiversity should be protected with appropriate separation and setbacks from important natural assets;

- nature based solutions for surface water management are required, and public open spaces should be designed to cater for a range of active and passive recreational needs and to conserve and restore nature and biodiversity;

- new development should respond positively to the established pattern and form of development in the surrounding area, should create opportunities for new linkages where possible, should ensure that the public realm is well-overlooked with active frontages, should be designed with modern architecture and durable, high-quality materials and finishes.

SPPR 1 of the Guidelines stipulates that there should be a separation distance of 16 metres at a minimum between opposing windows serving habitable rooms at the rear or side of houses, duplex units and apartment units, above ground floor level.

SPPR 2 of the Guidelines states that proposals for new houses must meet the following minimum private open space standards:

- 1 bed house 20 sq. metre
- 2 bed house 30 sq. metre
- 3 bed house 40 sq. metre
- 4 bed + house 50 sq. metre

SPPR 3 (iii) of the Guidelines states that in intermediate and peripheral locations, the maximum rate of car parking provision for residential development, where such provision is justified to the satisfaction of the planning authority, should be 2no. spaces per dwelling.

SPPR 4 of the Guidelines states that all new residential schemes must include safe and secure cycle storage facilities to meet the needs of residents and visitors. For residential units that do not have ground level open space or have smaller terraces, a general minimum of 1no. cycle storage space per bedroom is recommended. Cycle storage facilities should be provided either within the residential building footprint or within an adjacent or adjoining purpose-built structure of permanent construction.

Policy and Objective 5.1 - Public Open Space states that the requirement in the development plan shall be for public open space provision of not less than a minimum of 10% of net site area and not more than a minimum of 15% of net site area save in exceptional circumstances.

The proposed development aligns with the Guidelines in the following ways:

- The proposed density of 30.47 units/ha is in accordance with the Guidelines' residential density policy for this location in the town of Clonakilty.

- The level of car parking proposed is in accordance with Cork County Development Plan standards. Bicycle parking is also in keeping with standards. Dedicated cycle lanes are also proposed. The combination of these factors will disincentivise private car use and will encourage use of sustainable modes of travel.

- The proposed dwelling mix is as follows:

    - 1-bedroom homes – 9%
    - 2-bedroom homes – 37%
    - 3-bedroom homes – 36%
    - 4-bedroom homes – 17%
    - 5-bedroom homes – 1%

The above aligns fully with Development Plan objectives to provide for both smaller and larger households (45% 1&2 beds, 55% 3beds+). As such, the dwelling mix will support the creation of a diverse and balanced community on site.

- 15.73% of the site is proposed as useable public open space. The proposed retention of hedgerows on site as well as the other landscaping interventions, proposed SUDS measures, and mitigation planting proposed ensure that the proposed development will enhance biodiversity on site.

- In addition, neighbourhood play areas, kickabout areas and natural play mounds are proposed, along with communal open space between the apartment buildings and public seating and amenity pathways throughout the site. These will all support a range of both active and passive recreational needs.

- The proposal for the site is informed by the nature of the neighbouring established community, the need to integrate successfully and at the same time to meet local and national residential density requirements.

- The open spaces and other areas of public realm have a high degree of passive surveillance thanks to the proposed urban blocks, terraces of houses, and dual aspect and side-fronted houses which provide continuous street frontage and passive supervision.

- The design is modern and high-quality, as outlined in detail in the Architectural Design Statement prepared by Daly Barry which is submitted with the application.

- All apartment units at ground floor level are provided with individual terraced areas and all upper floor units are provided with screened balconies or private terraces. These will all be accessible from the internal layouts and will comply with the minimum standards outlined in Apartment Guidelines and Compact Settlements Guidelines. All houses have generous private rear gardens, which are compliant in size and design, as outlined in the County Development Plan.

6.3.7 Design Manual for Urban Roads and Streets (2019)

To effectively communicate how the principles, approaches and standards within this Manual have been applied, it is recommended that all proposed developments, regardless of scale, are accompanied by documentation that provides a clear rationale for the project, such as within a design statement.

To ensure that street layout plans communicate a complete picture of the design, it is recommended that the following information be presented, as appropriate:

- The width of streets, footways, verges, medians, and privacy strips.
- The location, type and configuration of crossings and junctions.
- Corner radii (including swept paths).
- On-street parking.
- Horizontal and vertical alignment data.

- Horizontal and vertical deflections.
- Forward visibility splays.
- Kerb lines (including heights).
- Surface Materials and Planting.
- Street furniture and facilities.
- Signage and Line Marking.
- Lighting.

Design teams and planning authorities are required to balance the level of detail given at any stage of the design/consent process. For example, more technical specifications may be better suited to later compliance submissions so that the initial consent process is not overly burdened with detail.

On this basis, a Statement of Compliance with the Design Manual for Urban Roads and Streets has been prepared by the applicant's design team.

6.3.8 Guidelines for Planning Authorities on Childcare Facilities, 2001

Although Appendix 2 of the Childcare Guidelines for Planning Authorities (2001) states an indicative standard of one childcare facility per 75no. dwellings in new housing areas, this is no longer considered to be a practical benchmark. The 2022 Apartment Guidelines require that childcare facilities be provided in accordance with the demographic profile of the area and the existing capacity of childcare centres. The Apartment Guidelines also specifically state that

> *….one-bedroom or studio type units should not generally be considered to contribute to a requirement for any childcare provision and, subject to location, this may also apply, in part or whole, to units with two or more bedrooms*.

A crèche has been provided as part of the proposed development. Following consultation with Cork County Childcare Committee, the provision of a 65no. space crèche on site was considered appropriate.

6.3.9 The Planning System and Flood Risk Management – Guidelines for Planning Authorities, 2009

There are no historic flood events recorded within the proposed development site according to FloodInfo.ie. The proposed development site is located in Flood Zone C as per the CFRAM flood mapping. However, there is an identified watercourse to the eastern side of the site. Therefore, a Flood Assessment was undertaken to provide a more detailed assessment and confirm how the site appropriately manages the risk of flooding. This assessment is included with the planning application.

6.3.10 EU Birds and Habitats Directives

The network of Natura 2000 sites across the EU is comprised of all designated sites that fall into one of two categories: Special Area of Conservation (SAC) and Special Protection Area (SPA). The protection and conservation of Natura 2000 sites is provided for by means of both the Habitats Directive 92/43/EEC and the Birds Directive 79/409/EEC. Article 6(3) of the Habitats Directive states that:

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

The Habitats Directive has been transposed into Irish law, with the current relevant legislation being the European Communities (Birds and Natural Habitats) Regulations, 2011. Section 42(1) of Part 5 of these regulations states that:

> *A screening for Appropriate Assessment of a plan or project for which an application for consent is received, or which a public authority wishes to undertake or adopt, and which is not directly connected with or necessary to the management of the site as a European Site, shall be carried out by the public authority to assess, in view of best scientific knowledge and in view of the conservation objectives of the site, if that plan or project, individually or in combination with other plans or projects is likely to have a significant effect on the European site.*

Both an Appropriate Assessment (AA) Screening Report and Natura Impact Statement been prepared in respect of the proposed development, copies of which accompany this application.

The NIS recommends that Cork County Council, as the competent authority, may determine that Stage 2 Appropriate Assessment is not required in respect of the proposed development.

6.3.11 Regional Spatial & Economic Strategy for the Southern Region, 2020

The Southern Regional Assembly was responsible for creating the Regional Spatial and Economic Strategy for the Southern Region (RSES), which came into effect on 31st January 2020.

The RSES designates a number of settlements as Key Towns. These Key Towns have a growth target of 30%, while noting that the scale and nature of this development is to be determined by each local authority with consideration of each settlement's capacity for development.

Objective RPO 23 of the RSES designates Clonakilty as a Key Town. This objective is to:

a) *To strengthen sustainably the employment-led growth and regeneration of Clonakilty as an economic driver for West Cork, build upon inherent strengths, in particular food production and tourism, while protecting and enhancing the natural environment of Clonakilty Bay;*
b) *Leverage its strategic location and accessibility on the N71 road corridor, sharing strengths with other settlements in West Cork, including an enhanced role for Bantry as part of the next County Development Plan review;*
c) *Seek investment to support attributes and the sustainable delivery of infrastructure, including enhanced inter-regional connectivity (transport networks and digital) for all key settlements along*

the N71 road corridor to the Cork metropolitan area, Port of Cork and Cork Airport assets, subject to the outcome of the planning process and environmental assessments.

6.3.12 Cork County Council Development Plan 2022-2028

The *Cork County Development Plan 2022-2028* (hereafter the Plan) is the relevant statutory plan under which the regulation and development of the subject site is to be considered. Below, we set out policy provisions and objectives of the Plan that are relevant to the consideration of this application.

The policies and objectives in relation to Clonakilty are within Volume Five of the Plan. It outlines that Clonakilty is the largest town in the West Cork Municipal District and provides an essential retail and service base to a large catchment area.

The Plan indicates that Clonakilty has developed into a prominent County Town becoming a driver for future population growth as well as employment growth in West Cork.

The Plan identifies a target population growth of approximately 1,500 people by 2028 in Clonakilty. As a result, a target of 600 new residential dwellings are required for the same period. In order to achieve this, the Plan sets out the objective:

CK-GO-01: To plan for development to enable Clonakilty to achieve its target population of 6,162.

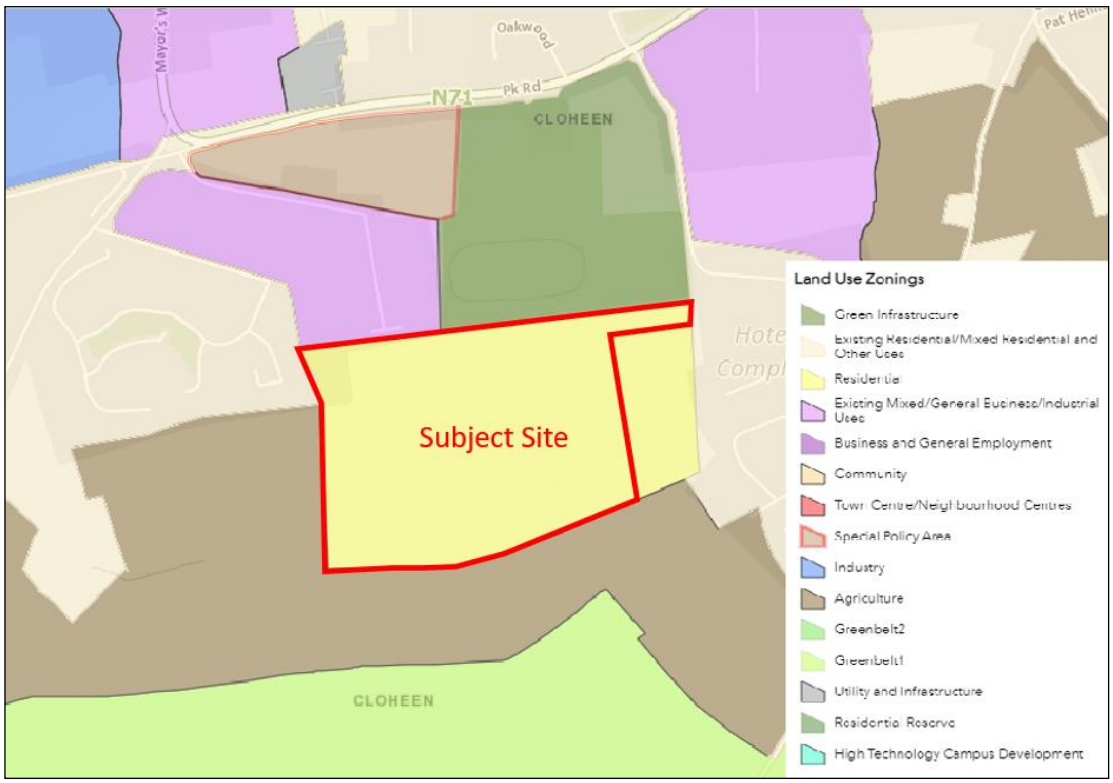

Figure 6.1: Excerpt from the Development Plan Zoning Map, showing the land use zoning objective pertaining to the subject site (generally outlined in red).

As indicated in Figure 2 above, the site is zoned within the Plan as **Residential**, where objective is **ZU 18-11** seeks to: *Promote development mainly for housing, associated open space, community uses and, only where an acceptable standard of amenity can be maintained, a limited range of other uses that support the overall residential function of the area.*

Access to the proposed development is to be through lands to the east and west through sites zoned as Existing Residential/Mixed Residential and Other Uses where objective **ZU 18-9** is: *to conserve and enhance the quality and character of established residential communities and protect their amenities*.

Further to this, the site is identified within *Volume Five* with a specific policy objective, **CK-R-07** for the delivery of new residential development.

Objective CK-R-07 calls for the development of Medium A Density Residential Development. The overall approach to the development of the site is to be guided by an overall framework Masterplan based on the requirements of the Guidelines on Sustainable Residential Development in Urban Areas published by the DoELG and the accompanying Urban Design Manual and Cork County's Design Guide for Residential Estate Development. Any development should provide for the following:

a) *An appropriate access strategy in compliance with the DMURS Design Manual for Urban Roads and Streets 2019 including appropriate provision for the possible future development of lands to the south and west. Proposals will be in keeping with any updated Local Transport Plan for the town.*
b) *The provision of a minimum of 15% public open space including the provision of green corridors, and areas of biodiversity value together with Active open space in accordance with Chapters 14 and 15 of the plan.*
c) *Provision of Active Travel Routes creating a high-quality permeable development with linkages to adjoining development.*
d) *Provision of a landscaped buffer with the existing Industrial development to the north.*
e) *An appropriate storm water drainage strategy for the site, and integration of SuDS proposals in the overall layout and design of the scheme.*

Within the Plan, **Objective HOU 4-7** sets out the density targets for residential zoned lands. Medium A Density is identified as a minimum net density of 30 units p.ha and a maximum net density of 50 units p.ha.

In addition to this, the Plan outlines that it is an objective of the planning authority to develop residential schemes which provide a mix of housing types which will allow for different demographics and meet future needs. **Objective HOU 4-6** sets out the following:

a) *Secure the development of a mix of house types and sizes throughout the County as a whole to meet the needs of the likely future population across all age groups in accordance with the guidance set out in the Joint Housing Strategy and the Guidelines on Sustainable Residential Development in Urban Areas.*
b) *Require the submission of a Statement of Housing Mix with all applications for multi-unit residential development in order to facilitate the proper evaluation of the proposal relative to this objective. The*

Statement of Housing Mix should include proposals for the provision of suitable housing for older people and the disabled in the area

The Plan also seeks to develop new residential developments which are not only inclusive but of high quality. With regard to this, **Objective PL 3-3** sets out the following;

In assessing future development proposals, the Plan will implement and promote a series of aims outlined in the Guidelines on Sustainable Residential Development in Urban Areas and accompanying Urban Design Manual and the Design Standards for New Apartments, which seek to create high quality inclusive places including:

a) To achieve/ reinforce a better sense of place and distinctiveness therefore, strengthening local character;
b) Prioritise walking, cycling and public transport, and minimise the need to use cars; Deliver a quality of life which residents and visitors are entitled to expect, in terms of amenity, safety and convenience; Provide a good range of community and support facilities, where and when they are needed;
c) Present an attractive, well maintained appearance, with a distinct sense of place and a quality public realm;
d) Easy to access and navigate through the delivery of a clear urban structure including landmarks and vistas;
e) Promote the efficient use of land and energy and minimise greenhouse gas emissions;
f) Provide a mix of land uses (where relevant) to minimise transport demand;
g) Promote social integration and provide accommodation for a diverse range of household types and age groups; and
h) *Enhance and protect the built and natural heritage.*

The Plan acknowledges the growing demand for childcare facilities and with regard to this sets out the following objective:

SC 6-4: *Support and facilitate the sustainable provision of childcare facilities in appropriate locations and seek their provision concurrent with development, having regard to population targets for the area and in accordance with the Childcare Facilities Guidelines for Local Authorities 2001 and regard to the Universal Design Guidelines for Early Learning and Care Centres 2019.*

Table 12.6 of the Plan identifies the car parking requirements for new residential developments, requiring two car spaces per dwelling. Further to this, the Plan outlines that one parking space is required per 3 staff for the crèche in addition to one parking space per 10 children.

Additionally, the Plan outlines in **Table 12.9** that for each house one long stay bicycle parking is required in addition to one short stay bicycle parking per 5 housing units. The Plan requires one long stay bicycle parking space per 5 staff in the crèche along with one short stay bicycle parking space for every 10 children.

As per the Plan, the site is not located in, or adjacent to, Flood Zones A & B.

The site is not located within or adjacent to any natural/built or cultural heritage designations. The Clonakilty Architectural Conservation Area (ACA) is located approximately one kilometre northeast from the site.

As such, the proposed development will not adversely impact on this ACA. Similarly, there are no structures which are listed on the Record of Protected Structures (RPS) on or adjacent to the proposed site.

6.4 Conclusion

In conclusion, having regard to:

- the provisions of the National Planning Framework, which support the escalation of population growth in the existing built-up area of the settlement of Clonakilty,
- The provisions of the RSES which identifies Clonakilty as a 'Key Town' in the region,
- the Design Manual for Urban Roads and Streets 2019,
- the Guidelines for Sustainable and Compact Settlement Guidelines for Planning Authorities.
- the Sustainable Urban Housing: Design Standards for New Apartments Guidelines for Planning Authorities 2020,
- the site's strategic position adjacent other residential redevelopment sites on the southern side of the town,
- the site's location within the development boundary of the key town of Clonakilty,
- the site's proximity within walking distance of the town centre,
- the nature, scale, and design of the proposed development, and
- the pattern of existing, permitted, and proposed development in the area,
- the site's zoning for new residential development within the Cork County Development Plan, 2022.

It is considered that the proposed development would not seriously injure the residential or visual amenities of the area or of property in the vicinity, would respect and enhance the existing character of the area and would be acceptable in terms of pedestrian and traffic safety and convenience.

The proposed development would, therefore, be in accordance with the proper planning and sustainable development of the area.

6.5 References

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7.0 TRAFFIC & TRANSPORTATION

Contents

Figures, Plates and Tables

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7.1 Introduction

7.1.1 Overview

This chapter of the EIAR has been prepared to assess the potential impact of the proposed development in terms of traffic and transport. The chapter provides the following:

An overview of the receiving environment;

- A detailed and robust assessment of the potential impact of the proposed development on the local road network both during the short-term construction phase and long-term operational phase; and
- Outlines mitigation measures to ensure significant effects are minimised or avoided.

The assessment of the traffic and transport section has been prepared Hegsons Design Consultancy Ltd, who have extensive experience with a wide range of Transport Statements, Transport Assessments, Mobility Management Plans and Development Proposals throughout Ireland and the United Kingdom.

This document should be read in conjunction with the Transport Assessment, Mobility Management Plan and DMURS Quality Audit which also accompanies the planning application.

7.1.2 Development Summary

A summary of the development summary is provided below but please refer to '**Chapter 4 – Proposed Development'** for the development description.

The proposed development will consist of a largescale residential development (LRD), comprising of 246 No. residential dwellings as follows: 177 No. houses consisting of 3 No. 5-bed dwellings, 41 No. 4-bed dwellings, 90 No 3-bed dwellings, 31 No. 2-bed dwellings and 12 No. 1-bed sheltered housing units; 6 No. 2-storey 4-unit apartment blocks consisting of 24 No. 2-bed units and 3 No. 3-storey 15-unit apartment blocks consisting of 36 No. 2-bed units and 9 No. 1-bed units. The proposed development also includes a crèche (473.77sqm) with capacity to accommodate 65 No. children.

The proposed development will include provision for car parking, including EV charging points and bicycle parking. The proposed development will also include the provision of private, communal, and public open spaces; internal roads and pathways with potential for future links to adjacent lands; pedestrian and cyclist routes; hard and soft landscaping and boundary treatments; waste storage; plant; signage; a new access onto the local hotel road to the east, incorporating bridging of the existing stream with associated works to same, and a new access connecting to the L-9931-0 local road to the west; modifications to car parking at the Clonakilty Park Hotel and the provision of a roundabout; public lighting; new substation; road improvement works and pedestrian facilities at the N71 and Clonakilty Park Hotel junction; all associated site development works; and all drainage and foul sewer infrastructure and network works including connections to the existing networks on the N71 national road and the L-4007-52 local road, and nature-based SuDS measures.

7.1.3 Consultation

Section 247 Pre-Application meetings have been held with Cork County Council (CCC) on 26th October 2023. A Section 32B meeting was held with representatives of Cork County Council on 12th November 2024.

A subsequent follow up meeting has been held with members of Cork County Council Traffic and Transportation service and the National Road design Office to discuss the methodology of both the EIAR and Traffic and Transport Assessment.

EIA scoping consultation requests were issued and responses received from Transport Infrastructure Ireland (TII) and the Department of Transport and these have been taken into consideration in the production of this Traffic and Transport Chapter.

7.1.4 Legislation, Policy and Guidance

This EIAR Transportation Chapter has been prepared in line with assumptions adopted within the Traffic and Transport Assessment and the relevant EIAR guidance documents, as outlined below.

This chapter has been prepared with cognisance of the following guidelines;

- Environmental Impact Assessment of Projects: Guidance on the preparation of the Environmental Impact Assessment Report (European Commission, 2017);
- Guidelines for Planning Authorities and An Bord Pleanála on carrying out Environmental Impact Assessment (Department of Housing, Planning & Local Government, 2018);
- Guidelines on the Information to be contained in Environmental Impact Assessment reports (EPA, 2022);
- Institute of Environmental Management and Assessment (IEMA) Guideline: 'Environmental Assessment of Traffic and Movement (IEMA, 2023);
- Cork County Development Plan (2022 – 2028);
- Cork County Council's Design Guide, 'Making Places: A Design Guide for Residential Development';
- Project Ireland 2040 – National Planning Framework;
- Transport Infrastructure Ireland's (TII's) Traffic & Transport Assessment Guidelines (2014);
- Design Manual for Urban Roads and Streets (DMURS, updated 2019);
- National Cycle Manual (NTA, 2023);
- Sustainable Recreational Development in urban areas (2009);
- Smarter Travel: A Sustainable Transport Future, 2009 – 2020;
- The TII NRA Design Manual for Roads and Bridges (DMRB) TA 79/99 Traffic Capacity of Urban Roads;
- TII Publications PE-PAG-02017 Project Appraisal Guidelines for National Roads Unit 5.3 - Travel Demand Projections May 2019
- The Department of Transport, Tourism and Sport (DTTAS) and the Department of Environment, Community and Local Government (DoECLG) Design Manual for Urban Roads and Streets (DMURS) March 2013; and
- The TII NRA Road Safety Audit HD 19/15 March 2015.

7.2 Assessment Methodology and Significance Criteria

7.2.1 Assessment of Significance

In Ireland, there are currently no definitive guidelines or standards which outline how the effect of traffic and transport should be quantified or described for the purposes of Environmental Impact Assessment. However, TII's 'Traffic and Transport Guidelines' indicate that if the impact generated by the additional traffic generated by a new development may be expected to exceed 10% of the existing traffic movements, it is considered material in the context of the local network. This threshold is reduced to 5% in sensitive situations.

The UK's Institute of Environmental Management and Assessment (IEMA) '*Environmental Assessment of Traffic and Movement*' (2023) suggests two broad rules to apply to assist in determining the scale and extent of the assessment. The Guidelines suggest that links where traffic (or HGVs) increase by more than 30% should be considered for more detailed assessment, or by 10% in sensitive locations.

As referenced in the IEMA Guidelines, a range of indicators for determining the significance of the relief from severance advises that changes in traffic flow of 30%, 60% and 90% are regarded as producing 'slight', 'moderate' and 'substantial' changes respectively. Additionally, the Guidelines state that it is generally accepted that traffic flow increases of less than 10% on uncongested roads are generally considered to be 'not significant', given that daily variations in background traffic flow may vary by this amount.

The following section sets out the methodology used to assess the significance of effects at locations along the proposed routes within the study area where total traffic levels exceed the screening thresholds set out by IEMA. Where the impact of operational traffic exceeds 30% on any particular link (10% on sensitive links), then a detailed assessment of the significance of effect has been undertaken, which takes account the link sensitivity and the magnitude of change. This will consider the criteria set out in the IEMA Guidelines, such as severance, driver delay, pedestrian delay, pedestrian amenity and safety.

7.2.2 Sensitivity

The sensitivity to change in traffic levels of any given road segment, and the receptors located along that road segment, is generally assessed by considering the residual capacity of the network under existing conditions.

Where there is a high degree of residual capacity, the network may readily accept and absorb an increase in traffic and therefore, the sensitivity may be said to be low. Conversely, where the existing traffic levels are high compared to the road capacity, there is little spare capacity, and the sensitivity to change in traffic levels will be considered to be high.

The criteria that have been used to make judgements on the sensitivity of the receptor(s) and the magnitude of change are presented in Table 7.1.

SENSITIVITY	DESCRIPTION
High	The receptor / resource has little ability to absorb change without fundamentally altering its present character, or is of international or national importance. Local residents whose daily activities depend upon unrestricted movement within their environment. Receptors such as schools, colleges, hospitals and accident hotspots.
Medium	The receptor / resource has moderate capacity to absorb change without significantly altering its present character, or is of high importance.
Low	The receptor / resource is tolerant of change without detriment to its character, or is of low / local importance. Areas such as trunk road or 'A' class roads constructed to accommodate significant HGV volumes.
Negligible	Users not sensitive to transport effects. Includes very small settlements and roads with no significant settlements including new strategic trunk roads or motorways.

Table 7.1: Framework for Determining Sensitivity of Receptors

7.2.3 Magnitude

The magnitude of effects is a function of the existing traffic volume, the percentage increase and change due to the proposed development, changes in the type of traffic and the temporal distribution of traffic (day of week, time of day).

The determination of magnitude has been undertaken by reviewing the proposed development, establishing the parameters of the receptors that may be affected and quantifying these effects utilising guidelines and professional judgement.

Consideration is given to the composition of the traffic on the road network, under both existing and proposed conditions. For example, LGVs have less effect on traffic and the road system than HGVs. Similarly, HGVs can have less effect than abnormal load vehicles, depending on the frequency of the abnormal loads.

The criteria that have been used to make judgement on the magnitude of the effect on the receptor(s) is presented in Table 7.2.

MAGNITUDE	
Major	Total loss of, or major / substantial alteration to, key elements/features of the baseline (pre-development) conditions such that the post development character/composition/attributes will be fundamentally changed. Generally a rule of >90% (or >70% at sensitive receptors) change in traffic is considered to be a major magnitude.
Moderate	Loss or alteration to one or more key elements/features of the baseline conditions such that post development character / composition / attributes of the baseline will be materially changed. Generally, a rule of 60% - 90% (or 40% - 70% at sensitive receptors) change in traffic is considered to be a moderate magnitude.
Minor	A minor shift away from baseline conditions. Change arising from the loss / alteration will be discernible/detectable but not material. The underlying character / composition / attributes of the baseline condition will be similar to the pre-development circumstances / situation. Generally, a rule of 30 – 60% (or 10% - 40% at sensitive receptors) change in traffic is considered to be a minor magnitude.
Negligible	Very little change from baseline conditions. Change barely distinguishable, approximating to a 'no change' situation. Generally, a rule of <30% (or <10% at sensitive receptors) change in traffic is considered to be a negligible magnitude.

Table 7.2: Framework for Determining Magnitude of Effects

7.2.4 Significance

As a guide to inform the assessment, but not as a substitute for professional judgement, criteria for determining the significance of traffic related effects are set out in Table 7.3. This is based on combining the magnitude of the effect with the receptor sensitivity.

Sensitivity of Receptor	Magnitude of Change			
	Major	Moderate	Minor	Negligible
High	Major	Major / Moderate	Moderate	Minor
Medium	Major / Moderate	Moderate	Moderate / Minor	Minor
Low	Moderate	Moderate / Minor	Minor	Negligible

Table 7.3: Significance Criteria Matrix

The effects recorded in grey highlighted cells are considered to be 'Significant'.

Significance is categorised as major, moderate, minor or negligible. Effects judged to be of minor or negligible significance are considered 'Not Significant'.

7.2.5 Potential Environmental Effects

The assessment is structured around the consideration of potential environmental effects relating to traffic and transport. The EPA EIAR guidelines (2022) outline a number of definitions that can be used to describe potential significant effects. This includes definitions for the quality of effects, significance of effects, extent of effects, probability of effects, duration and frequency of effects and the type of effects. Whilst some of these are easily qualified using the EPA guidelines, the significance of the effects is open to interpretation and relies on the professional engineering judgement. Potential significant effects as identified by the IEMA Guidelines including the following:

- Noise;
- Severance;
- Driver delay;
- Pedestrian delay;
- Pedestrian amenity;
- Accidents and safety;
- Hazardous loads (e. g. nuclear products); and
- Dust and dirt

The IEMA guidance suggests that in order to determine the scale and extent of the assessment and the level of effect the Proposed Development will have on the surrounding road network, the following two 'rules' should be followed:

Rule 1 – Include highway links where flows are predicted to increase by more than 30% (10% if affecting a sensitive area) or where the number of heavy goods vehicles (HGVs) is predicted to increase by more than 30%; and

Rule 2 – Include any other specifically sensitive area where traffic flows are predicted to increase by 10% or more.

Paragraph 2.5 of the IEMA Guidelines identifies groups, locations and special interests which may be sensitive to changes in traffic conditions as follows:

- People at home;
- People in work places;
- Sensitive groups including children, elderly and disabled;
- Sensitive locations, e. g. hospitals, churches, schools, historic buildings;
- People walking or cycling;
- Open spaces, recreational sites, shopping areas; and
- Sites of ecological / nature conservation value tourist attractions.

The significance of each effect is considered against the criteria within the IEMA Guidelines, where possible, however the guidelines state that:

> "*For many effects there are no simple rules or formulae which define the thresholds of significance and there is, therefore, a need for interpretation and judgement on the part of the assessor, backed- up by data or quantified information wherever possible. Such judgements will include the assessment of the numbers of people experiencing a change in environmental impact as well as the assessment of the damage to various natural resources*."

7.3 Receiving Environment

The following section provides a summary of the proposed development's receiving environment. Full details are included in the Traffic and Transport Assessment.

7.3.1 Subject Site Location

The subject site is located to the south of Clonakilty town centre / N71 and to the west of the Clonakilty Park Hotel and the Clonakilty Enterprise Centre.

The site is bound to the north by the N71, The Lady's Cross residential development (including Care Choice residential home) and the Cloheen Industrial Estate and to the east by the Clonakilty Park Hotel and Cloheen Meadows residential area. Lands to the west are zoned for agricultural uses (CK-AG-01).

Pedestrian and Cycle Infrastructure

Most of the main roads within Clonakilty have footways on at least one side of the road. Footpath and pedestrian facilities are provided along both sides of the N71 Road which provides connectivity to the town centre. Many of the footpaths are narrow and in a moderate state of repair. A pedestrian crossing is provided close to N71 / Clonakilty Park Hotel junction in order to enable a pedestrian crossing between the subject site and towards the town centre.

It is recognised that walking and cycling are the most important mode at the local level and offers the greatest potential to replace short car trips, particularly those around 10-15 minutes cycle time (2-3km) and 30-minute walking time (4-5km) respectively.

A pedestrian and cycling isochrone plans have been produced to identify the proximity of the subject site to the surrounding area. Figure 7.1 illustrates the isochrone plan for the area with walking and cycling (15 minutes) distance to the subject site. It can be seen that access can be gained to the local facilities, schools and nurseries.

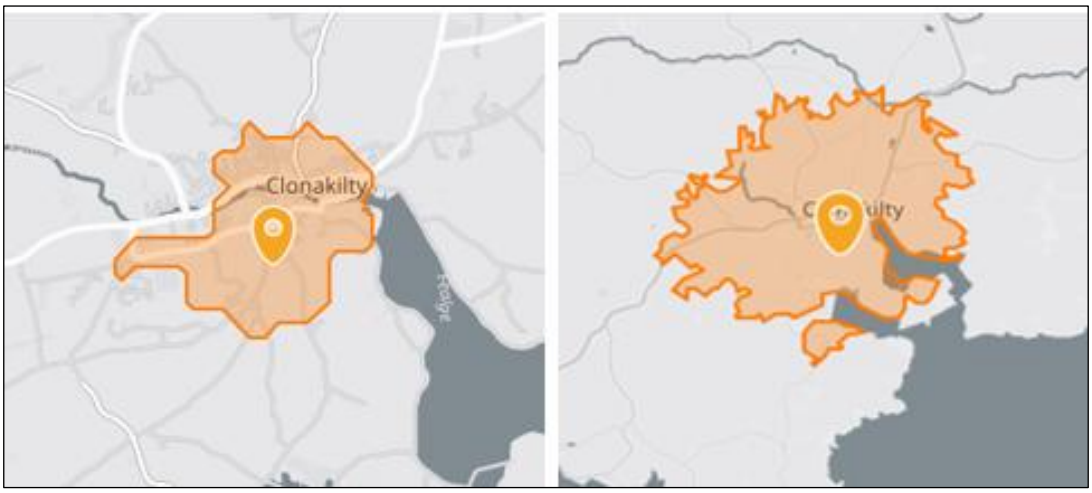

Figure 7.1: Pedestrian (Left) and Cycle (Right) 15-minute isochrone plan for the subject site Source: Created with TravelTime API: http://www.traveltimeplatform.com/

7.3.2 Public Transport

The subject site is close to the N71 local bus corridor however there are no stops in the immediate vicinity of the site. The nearest bus stops are in the town centre and approximately a 15-minute walk (c.1.1km from the eastern boundary of the subject site). The bus stops are served by the Bus Eireann No. 237 service which between Cork, Clonakilty, Skibbereen and Goleen.

The service provided approximately 8-9 services per weekday and a reduced service on Saturday and a further reduced service on a Sunday. The first bus departs Clonakilty at 06.50 with the last bus from Cork arriving in Clonakilty at 20.50.

7.3.3 Local Road Network

The key roads within the study area are described below.

N71 National Secondary Road

The N71 in a National Secondary Road which runs from Cork City via Bandon, Clonakilty, Skibbereen, Bantry and as far as Killarney. The N71 Park Road is a single carriageway road, and the carriageway is approximately 8.0m wide. Footpaths provided along the N71 Park Road at various locations.

L-4007-52 Cloheen Road

The L-4007-52 Cloheen Road connects to the N71 at the Miles Junction to Inchydoney / Lissavard and has a typical width of between 5.5m and 6.0m. The road is a single carriageway road, with limited footpath provisions and is mainly subject to an 80kph speed limit.

L-4045 Clogheen Road

The L-4045 Clogheen Road provides a link between the N71 via the L-4011 Upper Lamb Street and a residential area to the south of Clogheen. The road connects to the L-4011 further south of the subject site. The road is subject to a 50kph speed limit.

L-40076-0 Bog Road

The L-4007-52 connects to the L-40076-0 'Bog Road' at Connors Cross junction. The L-40076-0 'Bog Road' is a public road which runs to the south of the subject site but is currently in a bad state of repair.

All traffic accessing the site will do so via the N71 / Lady's Cross priority junction and the N71 / Clonakilty Park Hotel Access. Both junctions have one lane approaches with a short flare with capacity for two cars. Unless incorrectly positioned, waiting right-turning traffic from the westbound N71 into both junctions does not block following traffic until the turn is made. There is a signalised pedestrian crossing across on the N71 just east of the Clonakilty Par Hotel junction.

7.3.4 Baseline Traffic Flows

Site observations and traffic counts will be undertaken within the study area in order to determine the level of traffic using the road network in close proximity to the subject site. 12-hour peak traffic flows have been derived from manual traffic counts undertaken along with ATC data collection in March 2024.

These comprised Junction Turning Count (JTC) surveys at five locations, and Automatic Traffic Counters (ATC) placed at one location, as scoped out with officers of Cork County Council.

The traffic surveys were undertaken on Tuesday 5th March 2024 at the following locations:

Manual Traffic Counts - 12 hours: (7am – 7pm):

- Location No. 1 – N71 / L-4013 Inchydoney Road Roundabout
- Location No. 2 – N71 / Lamb Street Upper
- Location No. 3 – N71 / Clonakilty Park Hotel Junction
- Location No. 4 – N71 / L-4007-52 The Miles Junction
- Location No. 5 – N71 / R880 - The Maxol Roundabout

ATC – 7-Day Survey

- Location No. 6 – East of N71 / Clonakilty Park Hotel junction

Further manual traffic counts were undertaken at the N71 / Clonakilty Park Hotel junction on Thursday 1st and Friday 2nd May 2025 in order to validate the previous traffic data and to observe current traffic behaviour in terms of queuing and delay along the N71.

Figure 7.2 illustrates the site locations of the traffic surveys.

Figure 7.2: Location of Traffic Surveys – March 2024

Surveyed AM and PM peak hour traffic flows were converted into AADT using a factor calculated based on information gathered from the ATC counter and in accordance with PE-PAG-02039 TII Publications Project Appraisal Guidelines for National Roads Unit 16.1 - Expansion Factors for Short Period Traffic Counts, October 2016.

Table 7.4 presents the calculated Base 2024 AADTs for each of the junctions shown in Figure 7.2.

Junction Ref.	Description	Base 2024 AADT (Two-way vehicles through the Junctions)
1	N71 / L-4013 Inchydoney Road	15,115 vehs
2	N71 / Lamb Street Upper	11,886 vehs
3	N71 / Clonakilty Park Hotel Access	11,374 vehs
4	N71 / L-4007-52 The Miles Junction	12,828 vehs
5	N71 / R880 Maxol Roundabout	15,735 vehs

Table 7.4: 2024 Base AADT

7.4 Characteristics of the Proposed Development

A description of the site is provided in '**Chapter 4 – Proposed Development'**. The main features of the site design from a transport perspective are:

The proposed development will consist of a largescale residential development (LRD), comprising of 246 No. residential dwellings as follows: 177 No. houses consisting of 3 No. 5-bed dwellings, 41 No. 4-bed dwellings, 90 No 3-bed dwellings, 31 No. 2-bed dwellings and 12 No. 1-bed sheltered housing units; 6 No. 2-storey 4-unit apartment blocks consisting of 24 No. 2-bed units and 3 No. 3-storey 15-unit apartment blocks consisting of 36 No. 2-bed units and 9 No. 1-bed units. The proposed development also includes a crèche (473.77sqm) with capacity to accommodate 65 No. children.

The proposed development will include provision for car parking, including EV charging points and bicycle parking. The proposed development will also include the provision of private, communal, and public open spaces; internal roads and pathways with potential for future links to adjacent lands; pedestrian and cyclist routes; hard and soft landscaping and boundary treatments; waste storage; plant; signage; a new access onto the local hotel road to the east, incorporating bridging of the existing stream with associated works to same, and a new access connecting to the L-9931-0 local road to the west; modifications to car parking at the Clonakilty Park Hotel and the provision of a roundabout; public lighting; new substation; road improvement works and pedestrian facilities at the N71 and Clonakilty Park Hotel junction; all associated site development works; and all drainage and foul sewer infrastructure and network works including connections to the existing networks on the N71 national road and the L-4007-52 local road, and nature-based SuDS measures.

7.5 Predicted Effects of the Proposed Development

7.5.1 Construction Phase

The construction phase of the development will generate a certain amount of activity on the site. The general activities on site are likely to generate air and noise emissions and traffic movements. Alongside these general activities there will also be an amount of construction waste generated. The excavation of foundations and trenches for ductwork and sewers may require the removal of some rock underlying the site. The contractor will select the method of rock removal; however, it is likely the volume of rock to be removed will be minimal and localised and should not require a rock-breaker. The requirement to raise ground levels to facilitate the construction of the gravity drainage strives will ensure that most of the excavated material will be re-used on site and therefore minimise movements of earthworks vehicles out of the site.

Construction Programme

It is anticipated that the overall construction programme will commence in 2026 and take up to approximately 60 months to complete based on the phasing plan.

Site Operating Hours

It is proposed that Construction works will be carried out between the hours of 08:00 and 18:00 from Monday to Friday and 08:00 and 14:00 on Saturdays.

No construction works will be carried out on Sundays or Bank Holidays, without the specific agreement of Cork County Council and workings hours will be confirmed by Cork County Council.

Longer working days can occur when there is a planned concrete pour. If extended working hours are required, these will be agreed in advance with the planning authority.

Vehicle Types

The following vehicle types will be used on site during the construction stage:

- Bowser (2)
- Breaker (1)
- Container (1)
- Dozer (2)
- Dumper (2)
- Excavator (3)
- Generator (2)
- Plate Compactor (2)
- Power Washer (1)
- Roller (1)

There will be no abnormal load movements to the site.

Construction Compound and Storage Areas

The establishment of a site compound will be undertaken at commencement stage. The specific location of the site compound will change as the phase of the construction sequence are completed. As a rule the site compound will be required to be positioned at a location that is a minimum of 75m set back from the nearest point of the existing drainage channels along the eastern boundary of the project site. The construction compound for the development will be located within the green space area of the development, exact details shall be included in the construction stage CEM plan. The compound will include a site office and welfare facilities for construction workers. Portaloo's will be provided in the compound initially with a dedicated toilet block installed at a later date. Electrical and potable water supply will be provided from the adjoining farmyard. Car parking will be located adjacent to the construction compound.

Waste skips will be located adjacent to the site office. Containers and skips used for construction waste handling will be moved close to the work face, as required. Incoming construction materials will be offloaded and stored in the materials compound.

Vehicle Movements

Vehicle movements may result in dust emissions (by re-suspending dust from the road or from spilling dusty loads) and exhaust emissions. However, a number of control measures can be adopted to eliminate or minimise such emissions:

- Wheel washing facilities close to the site entrance to prevent mud from construction operations being transported on to adjacent public roads;
- Any spillages from vehicles leaving the site will be promptly removed;
- Damping down of site haul roads by water bowser during prolonged dry periods;
- Regular cleaning of hard-surfaced site entrance roads;
- Ensuring that dusty materials are transported appropriately (e.g. sheeting of vehicles carrying spoil and other dusty materials);

- Confinement of vehicles to designated haul routes within the site;
- Restricting vehicle speeds on haul roads and other unsurfaced areas on the site;
- All vehicles will be maintained to minimise exhaust emissions;
- Hoarding and gates to prevent dust breakout; and
- Appropriate dust site monitoring will be included within the site management practices to inform site management of the success of dust control measures used.

Construction Traffic

Construction traffic will comprise the construction workers (cars) and HGVs / LGVs carrying construction materials. The majority of construction traffic coming to and leaving the site will use the L4007-52 and the N71.

Transport of construction material will comprise the majority of HGV traffic movements during the construction works. Similarly, the Contractor will be required to use licensed and permitted waste management facilities within the Cork area which can accept C&D waste which will be generated from the site.

The appointed contractor will determine which facilities will provide construction materials and collect waste from the site. Suitably permitted waste contractors will be appointed to transport any waste off-site. Construction traffic, delivering to or collecting from the site, will be able to drive into the site from the N-71 / L4007-52, and turn within the site such that there will be no queuing of traffic on the adjacent road network. Drivers coming to site will be informed of the site working hours and suppliers will not be permitted to park at the site entrance awaiting the gates to open.

The N-71 national route provides a link between the site and areas to the east and west. As a result, HGV's will be able to avoid entering the town centre for the most part.

There will be a noticeable increase in HGV traffic on the road network during the construction stage works as waste materials are removed from site and deliveries brought to site, however this activity will be of short duration and generally staggered. Parking will be provided within the site boundary for construction staff and no car parking will be permitted outside of the site boundary.

Visual surveys of the road network approaching the site will be carried out on a regular basis. The main contractor will carry out road sweeping operations, employing a suction sweeper or similar appropriate method, to remove any project related dirt and/or material deposited on the road network by construction/delivery vehicles. The contractor will be required to provide suitable hard standing directly within the site boundary off the main access to minimize spoil being transferred onto the public road. Nonetheless, a wheel wash system will be set up in the event there is a risk of debris deposit on the road. Waste collection vehicles leaving the site will be required to cover their loads with a canvas to prevent waste or dust emissions from the vehicle on the road network.

The busiest period on site, in terms of HGV movements, could be during the early earth works stages. However, there is plenty of space on site to stockpile the material. There will be some excess material to be removed from the services installation with quantities of stone being delivered to backfill trenches and to fill under the floor slab.

Concrete pours are the next big item with the pouring of foundations and ground floor slabs assuming conventional blockwork or timber frame construction. After that it's mainly confined to the delivery of materials e.g. blocks, timber, plasterboard, windows etc. and these will be scheduled for a single time in any given day. In terms of construction traffic, the main impact will either be earthworks or concrete pours. During this period, it is anticipated that there will be a total of 20-30 HGV trips to the site (40-60 two-way movements), arriving at an average rate of 4-6 HGVs per hour.

In addition, it is anticipated that there could be 40 construction workers on site during peak periods. Based upon a conservative vehicle occupancy of 2 workers per vehicle, this would result in up to 20 inbound, and 20 outbound, vehicle trips to the site each day.

Construction worker travel will typically occur outside of peak hours on the local road network, with operatives typically arriving before 08:00, and leaving from 16:00 onwards.

Construction Site Access

It is proposed to restrict HGV deliveries to the most suitable routes, in order to minimise the impact to the local community.

The establishment of a site compound will be undertaken at commencement stage. The specific location of the site compound will change as the phase of the construction sequence are completed. As a rule the site compound will be required to be positioned at a location that is a minimum of 75m set back from the nearest point of the existing drainage channels along the eastern boundary of the project site. The site compound location, construction traffic routes and parking proposals of workers along with general site considerations shall be confirmed at the construction phase Construction & Environmental Waste Management Plan. There will be sufficient space for construction vehicles to enter onto the site for delivery of materials and collection of waste without causing an obstruction on the public road network. There will also be sufficient space for HGVs to turn within the site. Signage will be erected on the local roads to notify motorists of the construction works ahead. Signage at the site entrance will be provided to ensure members of the public do not enter the site road mistakenly.

The details of the proposed construction route will be agreed with Cork County Council, prior to commencement of construction works, with the national road network being used as much as possible. The use of these designated routes can be written into Contractor obligations, and compliance can be assured through observations and monitoring.

Table 7.5 shows the predicted daily percentage impact on the road junctions along the N71, conservatively assuming that all construction traffic travels on each section of the road (50 HGV and 40 staff trips a day).

Junction Ref.	Description	Base 2024 AADT (Two-way vehicles through the Junctions)	% HGV	% Increase in Traffic Volumes
1	N71 / L-4013 Inchydoney Road	15,115 vehs	4.1%	0.59%
2	N71 / Lamb Street Upper	11,886 vehs	4.9%	0.76%
3	N71 / Clonakilty Park Hotel Access	11,374 vehs	5.0%	0.79%
4	N71 / L-4007-52 The Miles Junction	12,828 vehs	4.8%	0.70%
5	N71 / R880 Maxol Roundabout	15,735 vehs	4.2%	0.57%

Table 7.5: Construction impact

Table 7.5 shows that, in terms of overall traffic numbers, the biggest impact will be less than 1.0% increase in traffic on the N71.

With reference to Table 7.1, the sensitivity of changes in HGV levels is considered to be medium for construction traffic impacts. With reference to Table 7.2, the magnitude of change in total traffic on the N71 is considered to be moderate. Although the predicted increase is below the 40% (Minor) threshold, it is considered that a more conservative assessment is justified in this instance.

When the medium magnitude of effect is combined with the moderate sensitivity of the receptor in accordance with Table 7.3, it can be concluded that there will be a short-term Moderate effect, which is considered to be Significant in accordance with the EIA regulations.

Severance			
Description	Sensitivity	Magnitude of Impact	Significance of Effect
N71 and Adjoining Road Network	Medium	Moderate	Moderate and Significant

Mitigation

Traffic impacts during the construction stage will be mitigated through the implementation of a

Construction Traffic Management Plan (CTMP), which will be agreed with CCC. A Framework CTMP, which sets out the principles to be followed, is included as part of the application package.

The following measures will reduce the magnitude of HGV impacts on the adjoining road network:

- HGV deliveries will be scheduled (as far as possible) outside of peak periods on the network, which have been identified as 08:00 – 09:00 and 16:30 – 17:30.

- Wheel washing facilities will be provided on site, which will reduce the amount of dust and debris transferred to local roads. In addition, a road sweeper will be employed as required to ensure that the local road network is not unduly affected.
- Signs will be placed along the length of the route, warning all road users, and local residents, of the presence of slow moving and turning HGV traffic. In addition, warning signs will be placed in advance of the Site Access junction, to warn drivers approaching from both directions.

Residual Impact

With the proposed mitigation in place, the Magnitude of Impact on the N71 is considered to be a Minor impact, which would result in a short-term Moderate / Minor Significant of Effect, which is considered to be Not Significant in terms of the EIAR regulations.

Severance			
Description	**Sensitivity**	**Magnitude of Impact**	**Significance of Effect**
N71 and Adjoining Road Network	Medium	Minor	Moderate / Minor and Not Significant

7.5.2 Operational Phase

Trip Generation

A person trip generation exercise for the proposed development was undertaken as part of the Traffic and Transport Assessment, and is set out in that document. Table 7.6 shows the predicted vehicle trip generation of the development, based upon the proposed 246 residential units and associated creche.

Time Period	Outbound (No. of trips)	Inbound (No. of trips)	Total Two-Directional (No. of trips)
AM Peak Hour			
Residential Dwellings	**149 vehs / hr**	**52 vehs / hr**	**201 vehs / hr**
Creche *	**3 vehs / hr**	**5 vehs / hr**	**8 vehs / hr**
Total	**152 vehs / hr**	**57 vehs / hr**	**209 vehs / hr**
PM Peak Hour			
Residential Dwellings	**59 vehs / hr**	**123 vehs / hr**	**182 vehs / hr**
Creche *	**4 vehs / hr**	**3 vehs / hr**	**7 vehs / hr**
Total	**63 vehs / hr**	**126 vehs / hr**	**189 vehs / hr**

Table 7.6: Predicted Development Trips (Veh) * Creche – Assume 25% of Creche trips are new / external trips

Based on the envisaged traffic generation for the proposed 246 No. residential dwellings and Creche (Fully Developed Site) a total of 152 outbound vehicle trips and 57 inbound vehicle trips are envisaged in the AM peak hour (Total = 209 vehicle trips in the peak hour). In addition, a total of 63 outbound

vehicle trips and 126 inbound vehicle trips are envisaged in the PM peak hour. (Total = 189 vehicle trips in the peak hour).

Traffic Distribution

New traffic demand to and from the development, as set out in Table 7.6, has been distributed through the network based upon the traffic splits observed in the 2024 surveys. Based on the layout of the residential dwellings and the position of the Creche the split of traffic would be experienced from both access points. Access / egress via the eastern access point will be critical for pedestrian and cycle connectivity to the town centre (10-minute town). This route will be encouraged for sustainable modes via direct connection to the centre of the site for this and all future phases.

Access / egress via the northern access (Lady's Cross) will ultimately mean traffic accessing the N71 via The Miles junction. Based on the envisaged trip generation from the proposed development (excluding the impacts of Mobility Management Plan initiatives) the following percentage split and two-way trips are envisaged to use both access points are summarised below. This process is detailed in the Traffic and Transport Assessment.

Traffic Assignment

It is widely accepted that the total number of trips generated by a new development are not comprised wholly of new trips to the local road network. Many of the trips may in fact already exist on the network, albeit at another location – such as pass-by trips or diverted trips. In order to represent a robust assessment, no allowance for the removal of any previous trips generated by the site has been taken into consideration for the purpose of this assessment. Accordingly, it is considered that this assessment represents a robust analysis of the traffic volumes attracted and generated by the proposed residential development.

Traffic Growth

Based on the proposed construction plan for the proposed development, and for the purpose of this assessment, it has been assumed that the proposed development would have an opening year of 2027.

The TII Traffic and Transport Assessment Guidelines for a Traffic Impact Assessment recommend that the opening year (base year) of the development and a plan year, 10 and 15 years after the opening year, should be considered for assessing the proposed development. The traffic impacts have therefore been assessed for the following years:

- Opening year of 2027 (Phase 1 – 71 Units (29%));
- Design years (+4 years from initial opening – 100%) 2031;
- Design years (+10 & +15 years from opening – 100%) 2037 & 2042

The NRA in their Project Appraisal Guidelines for National Roads Unit 5.3 – Travel Demand Projections October 2021 envisage that car and light vehicle volumes on national roads would increase over these periods of time and are detailed in the Traffic and Transport Assessment.

Committed Developments

In addition to background traffic growth, traffic from committed developments in the Clonakilty area has been added to Baseline totals. These developments have been granted planning permission in close proximity to the subject site in the last number of year. Most recently the Cloncastle Residential Development (Planning Ref: 23/20; ABP-318260-23), The Miles, Clonakilty was granted permission but was appealed. In addition, a similar sized residential development was granted permission and part constructed at the 'The Miles', Cloheen, (Planning Ref: 18/605) on behalf of Daytona Contractors Ltd. Currently constructed, the applicant was granted planning permission for a similar sized residential development off the Cloheen Road, The Miles, Cloheen, (Planning Ref: 18/703).

The Do Something scenarios represent the Do Minimum scenarios, with traffic from any developments not operational at the time of the baseline data collection.

Traffic Impact

Traffic flows have been calculated for the following scenarios:

- 2024: Base Year
- 2027: Opening Year Assessment (Phase 1 – 71 residential units (29%));
- 2031: Design Year (+4 years) (Phase 1-3 – Full Opening 246 residential units (100%); and
- 2037 & 2042: Further Design Years (+10 & +15 years) (Phase 1-3 – 246 residential units (100%)).

In addition, by 2032, the initiatives set out by the Mobility Management Plan will further reduce the trip generation rate associated with the proposed development and this is reflected in the following junction appraisals and analysis for the future design years of 2037 and 2042. The development contribution to the future year flows on the wider local road network is shown in Tables 7.7 – 7.11.

Time Period	Do Nothing - Junction Traffic Volumes	Do Something - Junction Traffic Volumes	% Increase in Traffic Volumes
Base Year: 2024 Traffic Survey (vehs/hr)			
AM Peak Hour	**1,484**	**1,484**	**----**
PM Peak Hour	**1,566**	**1,566**	**----**
2027 Traffic Volumes (Proposed Opening Year) (vehs/hr)			
AM Peak Hour	**1,623**	**1,662**	**+ 2.40%**
PM Peak Hour	**1,703**	**1,735**	**+ 1.88%**
2031 Traffic Volumes (Full Opening Year) (vehs/hr)			
AM Peak Hour	**1,721**	**1,792**	**+ 4.15%**
PM Peak Hour	**1,803**	**1,868**	**+ 3.41%**
2037 Traffic Volumes (Design Year: 10 years) (vehs/hr)			
AM Peak Hour	**1,779**	**1,850**	**+ 4.01%**
PM Peak Hour	**1,878**	**1,939**	**+ 3.28%**
2042 Traffic Volumes (Design Year: 15 years) (vehs/hr)			
AM Peak Hour	**1,865**	**1,936**	**+3.83%**
PM Peak Hour	**1,969**	**2,030**	**+ 3.13%**

Table 7.7 – Summary of the percentage increase of traffic at the N71 / L-4013 Inchydoney Road

Based on the percentage increase in traffic at the junction, the proposed development generates between a maximum of 2.40% and 1.88% increase in traffic in the peak periods assuming that Phase 1 of the proposed development is fully operational in the Opening year 2027. The proposed development generates between a maximum of 4.15% and 3.41% increase in traffic in the peak periods once the proposed development is fully operational (Phases 1-3) and open in 2037.

Time Period	Do Nothing - Junction Traffic Volumes	Do Something - Junction Traffic Volumes	% Increase in Traffic Volumes
Base Year: 2024 Traffic Survey (vehs/hr)			
AM Peak Hour	1,090	1,090	----
PM Peak Hour	1,307	1,307	----
2027 Traffic Volumes (Proposed Opening Year) (vehs/hr)			
AM Peak Hour	1,203	1,242	+ 3.24%
PM Peak Hour	1,428	1,460	+ 2.24%
2031 Traffic Volumes (Full Opening Year) (vehs/hr)			
AM Peak Hour	1,274	1,346	+ 5.60%
PM Peak Hour	1,514	1,575	+ 4.07%
2037 Traffic Volumes (Design Year: 10 years) (vehs/hr)			
AM Peak Hour	1,306	1,378	+ 5.47%
PM Peak Hour	1,567	1,629	+ 3.93%
2042 Traffic Volumes (Design Year: 15 years) (vehs/hr)			
AM Peak Hour	1,370	1,441	+ 5.21%
PM Peak Hour	1,643	1,705	+ 3.75%

Table 7.8 – Summary of the percentage increase of traffic at the N71/ L-4011 Lamb Street Upper Junction

Based on the percentage increase in traffic at the junction, the proposed development generates between a maximum of 3.24% and 2.24% increase in traffic in the peak periods assuming that Phase 1 of the proposed development is fully operational in the Opening year 2027. The proposed development generates between a maximum of 5.60% and 4.07% increase in traffic in the peak periods once the proposed development is fully operational (Phases 1-3) and open in 2037.

Time Period	Do Nothing - Junction Traffic Volumes	Do Something - Junction Traffic Volumes	% Increase in Traffic Volumes
Base Year: 2024 Traffic Survey (vehs/hr)			
AM Peak Hour	992	992	----
PM Peak Hour	1,205	1,205	----
2027 Traffic Volumes (Proposed Opening Year) (vehs/hr)			
AM Peak Hour	1,098	1,162	+ 5.83%
PM Peak Hour	1,319	1,378	+ 4.47%
2031 Traffic Volumes (Full Opening Year) (vehs/hr)			
AM Peak Hour	1,164	1,261	+ 8.30%
PM Peak Hour	1,398	1,486	+ 6.31%
2037 Traffic Volumes (Design Year: 10 years) (vehs/hr)			

AM Peak Hour	**1,230**	**1,327**	**+ 7.85%**
PM Peak Hour	**1,479**	**1,567**	**+ 5.96%**
2042 Traffic Volumes (Design Year: 15 years) (vehs/hr)			
AM Peak Hour	**1,288**	**1,385**	**+ 7.50%**
PM Peak Hour	**1,549**	**1,637**	**+ 5.70%**

Table 7.9 – Summary of the percentage increase of traffic at the N71 / Clonakilty Park Hotel Junction

Based on the percentage increase in traffic at the junction, the proposed development generates between a maximum of 5.83% and 4.47% increase in traffic in the peak periods assuming that Phase 1 of the proposed development is fully operational in the Opening year 2027. The proposed development generates between a maximum of 8.30% and 6.31% increase in traffic in the peak periods once the proposed development is fully operational (Phases 1-3) and open in 2037.

Time Period	Do Nothing - Junction Traffic Volumes	Do Something - Junction Traffic Volumes	% Increase in Traffic Volumes
Base Year: 2024 Traffic Survey (vehs/hr)			
AM Peak Hour	**1,164**	**1,164**	**----**
PM Peak Hour	**1,373**	**1,373**	**----**
2027 Traffic Volumes (Proposed Opening Year) (vehs/hr)			
AM Peak Hour	**1,332**	**1,363**	**+ 2.33%**
PM Peak Hour	**1,539**	**1,572**	**+ 2.14%**
2031 Traffic Volumes (Full Opening Year) (vehs/hr)			
AM Peak Hour	**1,409**	**1,524**	**+ 8.15%**
PM Peak Hour	**1,630**	**1,736**	**+ 6.53%**
2037 Traffic Volumes (Design Year: 10 years) (vehs/hr)			
AM Peak Hour	**1,487**	**1,602**	**+ 7.72%**
PM Peak Hour	**1,722**	**1,828**	**+ 6.18%**
2042 Traffic Volumes (Design Year: 15 years) (vehs/hr)			
AM Peak Hour	**1,554**	**1,669**	**+ 7.39%**
PM Peak Hour	**1,802**	**1,908**	**+ 5.91%**

Table 7.10 – Summary of the percentage increase of traffic at the N71 / L-4007-52 The Miles Junction

Based on the percentage increase in traffic at the junction, the proposed development generates between a maximum of 2.33% and 2.14% increase in traffic in the peak periods assuming that Phase 1 of the proposed development is fully operational in the Opening year 2027. The proposed development generates between a maximum of 8.15% and 6.53% increase in traffic in the peak periods once the proposed development is fully operational (Phases 1-3) and open in 2037.

Time Period	Do Nothing - Junction Traffic Volumes	Do Something - Junction Traffic Volumes	% Increase in Traffic Volumes
Base Year: 2024 Traffic Survey (vehs/hr)			
AM Peak Hour	**1,413**	**1,413**	**----**
PM Peak Hour	**1,623**	**1,623**	**----**
2027 Traffic Volumes (Proposed Opening Year) (vehs/hr)			
AM Peak Hour	**1,556**	**1,588**	**+ 2.06%**
PM Peak Hour	**1,772**	**1,805**	**+ 1.86%**
2031 Traffic Volumes (Full Opening Year) (vehs/hr)			
AM Peak Hour	**1,650**	**1,725**	**+ 4.56%**
PM Peak Hour	**1,880**	**1,950**	**+ 3.76%**
2037 Traffic Volumes (Design Year: 10 years) (vehs/hr)			
AM Peak Hour	**1,694**	**1,770**	**+ 4.46%**
PM Peak Hour	**1,946**	**2,017**	**+ 3.63%**
2042 Traffic Volumes (Design Year: 15 years) (vehs/hr)			
AM Peak Hour	**1,785**	**1,861**	**+ 4.23%**
PM Peak Hour	**2,041**	**2,111**	**+ 3.46%**

Table 7.11 – Summary of the percentage increase of traffic at the N71 / R880 - The Maxol Roundabout

Based on the percentage increase in traffic at the junction, the proposed development generates between a maximum of 2.06% and 1.86% increase in traffic in the peak periods assuming that Phase 1 of the proposed development is fully operational in the Opening year 2027. The proposed development generates between a maximum of 4.56% and 3.76% increase in traffic in the peak periods once the proposed development is fully operational (Phases 1-3) and open in 2037.

The figures in Tables 7.7 – 7.11 show that the predicted impacts of the development are below 10% on all links of the junction in the study area. A further assessment of the junction capacity are contained in the Traffic and transport Assessment prepared by Hegsons Design Consultancy Ltd.

7.5.3 Cumulative Impacts

The subject application is part of wider proposed development in and around the Clonakilty area. Table 7.12 outlines the details of the various other committed developments in the area. It should be noted that the Traffic and Transport Assessment has included for the cumulative impact of the proposed development set out in Table 7.12 in the analysis.

NUMBER	LOCATION	DESCRIPTION	STATUS
1.	The Miles Estate, the Miles Road, Clonakilty	Application Register Reference 23/20 and ABP-318260-23: Permission granted for the construction of 93no. dwellings and a single storey cheche.	No works have commenced as yet
2.	The Miles Estate, the Miles Road,	Application Register Reference 18/605: Permission granted for the construction of 77	Construction completed.

	Clonakilty	no. dwelling houses, childcare facility and all ancillary site development works. This permission was extended under Application Register Reference 23/452.	
2.	An Sruthean Beag, Cloheen, Clonakilty	Application Register Reference: 18/703: Permission granted for the construction of 99no. dwellinghouses and a crèche, including all associated site works.	Construction completed.
3.	Pairc Thiar	Part 8 Development by Cork County Council for the construction of 52no. dwellings.	Construction completed.

Table 7.12 – Summary of the Cumulative Application in the area.

7.6 Cumulative Impacts

The cumulative assessment takes into account how development has or might proceed prior to the Cloheen LRD in future years. As no new transport infrastructure has been proposed, the cumulative traffic impacts associated with the proposed development are distributed on the existing road network in similar proportions to the current or assumed distribution. The future upgrade of the N71 / Miles Junction has not been assumed in any future assessment of the cumulative impacts.

In terms of the initial threshold assessment, the cumulative assessment assumes that the above development are in place by the full opening of the Cloheen LRD.

7.7 Detailed Assessment

7.7.1 Severance

Description

The IEMA Guidelines advise that "*Severance is the perceived division that can occur within a community when it becomes separated by a major traffic artery*".

The potential for traffic associated with the proposed development to cause severance is assessed on a case-by-case basis using professional judgement where traffic increases are predicted on roads through residential settlements.

Increased severance can result in the isolation of areas of settlement or individual properties. Severance may result from the difficulty of crossing a heavily trafficked road or a physical barrier created by the road itself. Severance effects could equally be applied to residents, motorists or pedestrians.

Assessment

With reference to Table 7.1, the sensitivity of the N71 and adjoining roads to changes in traffic levels is considered to be low for severance, as although residential properties are located on either side of the road, there are no particular pedestrian attractors that would create crossing demand on the N71.

With reference to Table 7.2, the magnitude of change in total traffic on the N71 and adjoining roads is considered to be minor as the increase in both is between 10% and 40%. In addition, a signalised crossing facility that is provided to the east of the N71 / Clonakilty Park Hotel access, which will provide a safe crossing facility for any increase in demand as a result of the proposed development.

When the minor magnitude of effect is combined with the low sensitivity of the receptor in accordance with Table 7.3, it can be concluded that there will be a long-term, minor severance effect, which is considered to be Not Significant in accordance with the EIA regulations.

Severance			
Description	**Sensitivity**	**Magnitude of Impact**	**Significance of Effect**
N71 and Adjoining Road Network	Low	Minor	Moderate / Minor and Not Significant

7.7.2 Driver Delay

Description

EMA Guidelines advise "*delays are only likely to be significant when the traffic on the network surrounding the development is already at, or close to, the capacity of the system*".

Assessment

Additional delay to non-development traffic may occur at several points on the road network in the vicinity of the subject site. The sensitivity of the N71 to an increased driver delay effect is considered to be medium in accordance with Table 7.1, as there are few alternative routes for east-west movement around Clonakilty for traffic to use.

With reference to Table 7.2, the magnitude of change in total traffic on the N71 is considered to be minor as the increase in both is between 10% and 40%.

Combining the minor magnitude of the change with the medium sensitivity of the receptor in accordance with Table 7.3 equates to an effect which is classed as long-term, moderate / minor and Not Significant as per the EIA Regulations.

The results show that with the addition of traffic from the development, the N71 is predicted to operate close to practical capacity in the future year assessment. The Traffic and Transport Assessment prepared by Hegsons Design Consultancy Ltd concludes that this level of predicted short-lived congestion is not unusual in an urban setting during the peak hour, and is acceptable, particularly when the robust approach to trip generation that has been adopted is taken into account.

Driver Delay			
Description	Sensitivity	Magnitude of Impact	Significance of Effect
N71 and Adjoining Road Network	Medium	Minor	Moderate / Minor and Not Significant

7.7.3 Pedestrian Delay and Amenity

Description

Traffic volume, composition, speed, and the presence (or lack of) pedestrian footways and crossings all contribute to the level of general pleasantness, fear, intimidation and delay experienced by pedestrians and other vulnerable road users.

Assessment

There is a continuous footpath alongside the access roads to and from the proposed development, that run from the subject site toward the N71. Significant pedestrian and cycle facilities (dedicated routes through the proposed development) is proposed to connect the N71 to future lands. A signalised crossing is currently provided at on the N71 at the junction of the Clonakilty Park Hotel and new proposed junction improvements will connect this crossing to the proposed development and the town centre.

The sensitivity of N71 and adjoining roads to an increased pedestrian delay and amenity is considered to be medium in accordance with Table 7.1. This is in relation to pedestrian amenity, where narrow footways and the close proximity of traffic mean that the pedestrian experience may not be perceived to be particularly pleasant.

With reference to Table 7.2, the magnitude of change in total traffic on the N71 is considered to be minor as the increase in both is between 10% and 40%. The development will improve footways and cycle facility between the subject site and the N71, which also supports this assessed minor magnitude of change.

Combining the minor magnitude of the effect with the medium sensitivity of the location in accordance with the matrix in Table 7.3, it is considered that increased traffic associated with the proposed development will have a long-term, moderate / minor effect on pedestrian delay and amenity. This effect is assessed as Not Significant in accordance with the EIA Regulations.

Pedestrian Delay and Amenity			
Description	Sensitivity	Magnitude of Impact	Significance of Effect
N71 and Adjoining Road Network	Medium	Minor	Moderate / Minor and Not Significant

7.7.4 Accidents and Safety

Description

A high-level calculation has been undertaken to quantify the increased level of accident risk that could be expected due to an increase in traffic associated with the proposed development.

The likelihood of an accident occurring is commonly expressed in terms of 'accidents per million vehicle- km'. Accidents that are appraised in relation to transport are predominantly those in which personal injury is sustained by those involved (personal injury accidents (PIAs)).

Assessment

A Stage 1/2 Road Safety Audit has been carried out form the proposed development in relation to the access arrangement and the footpath / cycle facility proposals within the site. The RSA considers vehicle, pedestrian and cyclist safety, as well as the safety of other vulnerable road users. This has ensured that the proposed designs provide suitable and safe infrastructure for all users.

Receptor sensitivity for Accident and Safety effects is always considered as high. The assessed magnitude of this effect is negligible. When combined, the effect can be classified as long-term, Minor and Not Significant.

Accidents and Safety			
Description	**Sensitivity**	**Magnitude of Impact**	**Significance of Effect**
N71 and Adjoining Road Network	**High**	**Negligible**	**Moderate / Minor and Not Significant**

7.7.5 Conclusion

In conclusion, all of the impacts of the scheme have been assessed as Not Significant in accordance with the EIA Regulations.

7.8 Mitigation

This assessment concludes that the proposed development will not have a significant effect on the local road network during the operational phase.

A Mobility Management Plan has also been prepared by Hegsons Design Consultancy Ltd and is included as part of the planning application submission, as a 'best practice' measure, to accompany the planning application.

The aim of the Mobility Management Plan is to minimise the proportion of single occupancy vehicle trips and address the forecast transport impacts of the end-users of the subject site. These mobility measures will also support and enable those residents who may be living 'car-free' providing them with

a range of sustainable mobility options and negating the need to own a car. These measures are primarily focused on encouraging walking, cycling and the use of public transport and can be broadly summarized as follows:

- Appointing a Mobility Management Coordinator.
- Provision of a Welcome Travel Pack for residents.
- Measures to encourage walking, such as the provision of clear signage and maps throughout the site.
- Measures to encourage cycling, including the provision of bike hire hubs on the site, and the provision of cycling signage and maps, showing cycle times to key destinations.
- Measures to encourage Public Transport use, including liaising with local bus operators regarding bus scheduling, routes and school travel.

The development will be designed to complement and support future transport initiatives in the area, such as any Active Travel funding which supports important strategic pedestrian and cyclist routes, access to schools, permeability links, urban greenways and some minor public transport improvement projects.

7.9 Monitoring

A fundamental part of any Mobility Management Plan requirement is a commitment to fund and monitor it to determine its progress, identifying problem areas and initiating corrective measures to ensure targets are met.

A Mobility Coordinator will be appointed from within the management company to ensure the implementation and monitoring of the Mobility Management Plan. They will act as a point of contact for residents for all mobility and access related issues. The coordinator, in collaboration with the steering group, should carry out regular performance monitoring. The procedure would consist of:

- An inventory of the various infrastructure and promotional measures introduced, with commentary on their uptake and success.
- Surveys of residents of the proposed development to determine baseline demographic and travel behaviour information;
- Re-survey of residents of the proposed development for comparison each year;
- Analysis of the survey results to determine if targets are being met;
- Review and amend measures set out in the Mobility Management Plan;
- Controlling the achievement of the different targets;
- Devise corrective measures if needed; and
- Inform all concerned, including the Council Officers about the implementation and progress of the Mobility Management Plan.

At the end of the first year of the implementation of the plan, a full travel survey of all residents and visitors for the proposed development will be undertaken to determine current travel behaviours and to inform the travel strategy for future years. Monitoring will also be undertaken on an annual basis to assess performance against the targets.

The results of the travel survey and the monitoring can then be used to modify the targets and actions contained within the plan to ensure that it is an ongoing process. By continually reviewing the plan it will help to develop and improve it and ensure that the measures introduced are consistent with the occupier's requirements.

7.10 Residual Effects

Residual impacts are defined as '*effects that are predicted to remain after all assessments and mitigation measures*'. They are the remaining 'environmental costs' of a project and are the final or intended effects of a development after mitigation measures have been applied to avoid or reduce adverse impacts. Potential residual impacts from the Proposed Development were considered as part of this environmental assessment.

With the implementation of a Construction Traffic Management Plan and Mobility Management Plan in place, the residual impact of the Proposed Development will be 'not significant', in terms of the development in isolation.

7.11 Conclusion

The assessment has found that there will no significant negative impact in terms of Traffic and Transportation.

7.12 References

Design Manual for Urban Roads and Streets (DMURS), (2019).

Environmental Protection Agency (2022) Guidelines on the Information to be Contained in Environmental Impact Assessment Reports.

Institute of Environmental Management and Assessment (IEMA) Guideline: 'Environmental Assessment of Traffic and Movement (IEMA, 2023);

Government of Ireland, Project Ireland 2040 – National Planning Framework.

Project Appraisal Guidelines for National Roads Unit 5. 1 - Construction of Transport Models, October 2016, TII.

Project Appraisal Guidelines for National Roads Unit 5. 3 – Travel Demand Projections, October 2016, TII.

Transport Infrastructure Ireland (TII) (2014), Traffic and Transport Assessment Guidelines.

National Cycle Manual (NTA, 2023).

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8.0 AIR QUALITY AND CLIMATE

Contents

Figures, Plates and Tables

8.1 Introduction

Axis Environmental Services were commissioned by Coakley O' Neill Town Planning to assess the potential air quality and climatic impacts of the proposed development on the receiving environment during the construction and operational phases of the development. This assessment includes a comprehensive description of the existing air quality in the vicinity of the subject site, a description and assessment of how construction activities and the operation of the development may impact existing air quality. This chapter will also cover the mitigation measures that will be implemented to control any potential impacts on local air quality and the local climate and the residual potential for impact, if any, of the project with mitigation measures in place.

The proposed development will consist of a largescale residential development (LRD), comprising of 245no. residential dwellings as follows: 160no. houses consisting of 40no. 4-bed dwellings, 88no 3-bed dwellings, 20no. 2- bed dwellings and 12no. 1 bed sheltered housing units; 10no. 2-storey 4-unit apartment blocks consisting of 40no. 2-bed units and 3no. 3-storey 15-unit apartment blocks consisting of 36no. 2-bed units and 9no. 1-bed units.

The proposed development also includes a crèche (467sqm) with capacity to accommodate 65no. children. The proposal will include provision for car parking, including EV charging points, bicycle parking. The development will also include the provision of private, communal, and public open spaces; internal roads and pathways with potential for future links to adjacent lands; pedestrian and cyclist routes; hard and soft landscaping and boundary treatments; waste storage; plant; signage; a new access onto the local hotel road to the east, incorporating bridging of the existing stream with associated works to same, and a new access connecting to the L-9931-0 local road to the west; modifications to car parking at the Clonakilty Park Hotel and the provision of a roundabout; public lighting; new substation; all associated site development works; and all drainage and foul sewer infrastructure and network works including connections to the existing networks on the N71 national road and the L-4007-52 local road, and nature-based SuDS measures.

This chapter was compiled by Joanne Murray. Joanne holds a Bachelor of Science from University College Cork and has worked as a lead consultant on many licencing and planning projects. Joanne has worked at AXIS Environmental Services for five years and contributed to and compiled multiple Environmental Impact Assessment Reports.

8.1.1 Methodology

The general assessment methodology of the potential impact of the proposed development on air quality and climate has been conducted in accordance with the following guidance and legislation:

- EPA "Guidelines on the Information to be contained in Environmental Impact Assessment Reports- May 2022";
- Environment, Community and Local Government, "Guidelines for Planning Authorities and An Bord Pleanála on carrying out Environmental Impact Assessment", August 2018;
- Desktop survey of the National and EU legislation;
- European Council (2014) (23 and 24 October 2014) Conclusions on 2030 Climate and Energy Policy Framework, SN 79/14 Framework
- IPCC (2006) IPCC Guidelines for National GHG Inventories;
- 2019 Refinement to the 2006 IPCC Guidelines for National Greenhouse Gas Inventories
- IAQM Guidance on Construction Impacts, 2014;
- IAQM Guidance on the assessment of dust from demolition and construction, Version 2.2 January 2024;
- Greater London Authority, The Control of Convention on Climate Change (FCCC) (1997) Kyoto Protocol to The United Nations Framework Convention on Climate Change;
- 2019 Refinement to the 2006 IPCC Guidelines for National Greenhouse Gas Inventories. May 2019;
- Dust and Emissions During Construction and Demolition, Supplementary Planning Guidance July 2014;
- IAQM Guidance on Monitoring in the Vicinity of Demolition and Construction Sites, Version 1.1, October 2018;
- Ambient Air Quality and Cleaner Air for Europe (CAFE) Directive (2024/2881);
- The Climate Action and Low Carbon Development (Amendment) Act 2021;
- Guidance on Integrating Climate Change and Biodiversity into Environmental Impact Assessment (European Commission, 2013);
- TII Road Emissions Model (REM): Model Development Report, May 2024;
- TII Air Quality Assessment of Proposed National Roads, December 2022;
- TII Air Quality Assessment of Specified Infrastructure Projects – Overarching Technical Document, December 2022;
- Climate Guidance for National Roads, Light Rail and Rural Cycleways (Offline & Greenways) – Overarching Technical Document, November 2024;
- Department of Environment, Heritage and Local Government (DoEHLG) (2004), Quarries and Ancillary Services, Guidelines for Planning Authorities.

The following documents and reports were reviewed as part of the desktop survey carried out as part of this chapter:

- EPA ''Air Quality in Ireland Report 2023";
- National Ambient Air Quality Monitoring Programme 2017 – 2022;
- Metrological Conditions obtained from Met Éireann;
- Annual Review 2025 - Our Changing Climate in 2024 (published March 2025)
- Ireland's Provisional Greenhouse Gas Emissions 1990-2023 (published July 2024);

- Cork County Development Plan 2022 – 2028.
- Cork County Council Climate Action Plan 2024 - 2029.

8.1.2 Guidance and Legislation

To reduce the risk of poor air quality, National and European statutory bodies have set limit values in ambient air for a range of air pollutants. These limits are set for the protection of human health and ecosystems. Air Quality significance criteria are assessed on the basis of compliance with the appropriate standards or limit values.

The applicable standards in Ireland include the European Commission Directive 2024/2881 which has set limit values for the pollutants SO_2, NO_2, PM_{10}, Lead, Benzene and Carbon Monoxide. Council Directive 2024/2881 combines the previous Air Quality Framework Directive (96/62/EC) and its subsequent daughter directives. The revised Directive (EU) 2024/2881 (EU, 2024) entered into force in December 2024, aligning 2030 EU air quality standards more closely with World Health Organization recommendations.

The revised directive introduces new and revised air quality (AQ) standards that must be met by 1 January 2030, emphasising the need for early action to achieve cleaner air . The Directive introduces stricter exposure reduction targets for $PM_{2.5}$ and new ones for NO_2, aligning the average exposure objectives with the WHO annual guidance levels (WHO, 2021).

Pollutant	Limit Value Objective	Averaging Period	Limit Value µg/m³	Basis of Application of the Limit Value
Nitrogen Dioxide	Protection of human health	1 hour	200	Not to be exceeded more than 18 times in a calendar year
	Protection of human health	Calendar year	40	Annual mean
$PM_{2.5}$	Protection of human health	Calendar year	20	Annual mean
PM_{10}	Protection of human health	24 hour	50	Not to be exceeded more than 35 times in a calendar year
	Protection of human health	Calendar year	40	Annual mean
Sulphur Dioxide	Protection of human health	1 hour	350	Not to be exceeded more than 24 times in a calendar year
	Protection of human health	24 hour	125	Not to be exceeded more than 3 times in a calendar year
Carbon Monoxide	Protection of human health	8 hour	10,000	Maximum daily 8 hour mean

Table 8.4 Summary of 2024/2881 Directive Limits for 2026

Pollutant	Limit Value Objective	Averaging Period	Limit Value µg/m³	Basis of Application of the Limit Value
Nitrogen Dioxide	Protection of human health	1 hour	200	Not to be exceeded more than 3 times in a calendar year
	Protection of human health	24 hour	50	Not to be exceeded more than 18 times in a calendar year
	Protection of human health	Calendar year	20	Annual mean
$PM_{2.5}$	Protection of human health	24 hour	25	Not to be exceeded more than 18 times in a calendar year
	Protection of human health	Calendar year	10	Annual mean
PM_{10}	Protection of human health	24 hour	45	Not to be exceeded more than 18 times in a calendar year
	Protection of human health	Calendar year	20	Annual mean
Sulphur Dioxide	Protection of human health	1 hour	350	Not to be exceeded more than 3 times in a calendar year
	Protection of human health	24 hour	50	Not to be exceeded more than 18 times in a calendar year
	Protection of human health	Calendar year	20	Annual mean
Carbon Monoxide	Protection of human health	8 hour	10,000	Maximum daily 8 hour mean
	Protection of human health	24 hour	4,000	Not to be exceeded more than 18 times in a calendar year

Table 8.5 Summary of 2024/2881 Directive Limits for 2030

This assessment was prepared having regard to the requirements of the Transport Infrastructure Ireland (TII) Air Quality Assessment of Proposed National Roads – Standard, December 2022 (PE-ENV01107) and Air Quality Assessment of Specified Infrastructure Projects – Overarching Technical Document, December 2022. These guidelines are relevant to the project as the proposed development will affect traffic volumes in its vicinity during the construction and operational phases.

The effect of the proposed development on air quality is assessed for both the construction and operational phases by considering the pollutant background concentrations, emissions from road traffic and the potential for construction dust. Predicted concentrations are compared to the relevant limit values. Carbon emissions are considered in terms of Ireland's climatic obligations.

Magnitude of Change	Annual Mean NO_2 / PM_{10}	No. days with PM_{10} concentration >50 µg/m³	Annual Mean $PM_{2.5}$
Large	Increase/decrease ≥4 µg/m³	Increase/decrease >4 days	Increase/decrease ≥2.5 µg/m³
Medium	Increase/decrease 2 - <4 µg/m³	Increase/decrease 3 or 4 days	Increase/decrease 1.25 - <2.5 µg/m³
Small	Increase/decrease 0.4 - <2 µg/m³	Increase/decrease 1 or 2 days	Increase/decrease 0.25 - <1.25 µg/m³
Imperceptible	Increase/decrease <0.4 µg/m³	Increase/decrease <1 day	Increase/decrease <0.25 µg/m³

Table 8.6 Definition of Impact Magnitude for Changes in Ambient Pollutant Concentrations

Absolute Concentration in Relation to Objective/Limit Value	Change in Concentration[a]		
	Small	Medium	Large
Increase with Scheme			
Above Objective/Limit Value With Scheme (≥40 µg/m³ of NO_2 or PM_{10}) (≥25 µg/m³ of $PM_{2.5}$)	Slight Adverse	Moderate Adverse	Substantial Adverse
Just Below Objective/Limit Value With Scheme (36-<40 µg/m³ of NO_2 or PM_{10}) (22.5-<25 µg/m³ of $PM_{2.5}$)	Slight Adverse	Moderate Adverse	Moderate Adverse
Below Objective/Limit Value With Scheme (30-<36 µg/m³ of NO_2 or PM_{10}) (18.75-<22.5 µg/m³ of $PM_{2.5}$)	Negligible	Slight Adverse	Slight Adverse
Well Below Objective/Limit Value With Scheme (<30 µg/m³ of NO_2 or PM_{10}) (<18.75 µg/m³ of $PM_{2.5}$)	Negligible	Negligible	Slight Adverse
Decrease with Scheme			
Above Objective/Limit Value With Scheme (≥40 µg/m³ of NO_2 or PM_{10}) (≥25 µg/m³ of $PM_{2.5}$)	Slight Beneficial	Moderate Beneficial	Substantial Beneficial
Just Below Objective/Limit Value With Scheme (36-<40 µg/m³ of NO_2 or PM_{10}) (22.5-<25 µg/m³ of $PM_{2.5}$)	Slight Beneficial	Moderate Beneficial	Moderate Beneficial
Below Objective/Limit Value With Scheme (30-<36 µg/m³ of NO_2 or PM_{10}) (18.75-<22.5 µg/m³ of $PM_{2.5}$)	Negligible	Slight Beneficial	Slight Beneficial
Well Below Objective/Limit Value With Scheme (<30 µg/m³ of NO_2 or PM_{10}) (<18.75 µg/m³ of $PM_{2.5}$)	Negligible	Negligible	Slight Beneficial

Table 8.7 Air Quality Impact Descriptors for Changes to Annual Mean NO_2 / PM_{10} and $PM_{2.5}$ Concentrations at a Receptor - a Where the Impact Magnitude is Imperceptible, then the Impact Description is Negligible.

Absolute Concentration in Relation to Objective/Limit Value	Change in Concentration[a]		
	Small	Medium	Large
Increase with Scheme			
Above Objective/Limit Value With Scheme (≥35 days)	Slight Adverse	Moderate Adverse	Substantial Adverse
Just Below Objective/Limit Value With Scheme (32-<35 days)	Slight Adverse	Moderate Adverse	Moderate Adverse
Below Objective/Limit Value With Scheme (26-<32 days)	Negligible	Slight Adverse	Slight Adverse
Well Below Objective/Limit Value With Scheme (<26 days)	Negligible	Negligible	Slight Adverse
Decrease with Scheme			
Above Objective/Limit Value With Scheme (≥35 days)	Slight Beneficial	Moderate Beneficial	Substantial Beneficial
Just Below Objective/Limit Value With Scheme (32-<35 days)	Slight Beneficial	Moderate Beneficial	Moderate Beneficial
Below Objective/Limit Value With Scheme (26-<32 days)	Negligible	Slight Beneficial	Slight Beneficial
Well Below Objective/Limit Value With Scheme (<26 days)	Negligible	Negligible	Slight Beneficial

Table 8.8 Quality Impact Descriptors for Changes to No. of Days with PM_{10} Concentration >50 µg/m³ at a Receptor - a Where the Impact Magnitude is Imperceptible, then the Impact Description is Negligible.

Dust Deposition Guidelines

The concern from a health perspective is focused on particles of dust which are less than 10 microns (PM_{10}) and less than 2.5 microns ($PM_{2.5}$) and the EU ambient air quality standards outlined in the table above, have set ambient air quality limit values for PM_{10} and $PM_{2.5}$.

With regards to larger dust particles that can give rise to nuisance dust, there are no statutory guidelines regarding the maximum dust deposition levels that may be generated during the construction phase of a development in Ireland. Furthermore, no specific criteria have been stipulated for nuisance dust in respect of this type of development.

With regard to dust deposition, the German TA-Luft standard for dust deposition (non-hazardous dust) (German VDI, 2002) sets a maximum permissible emission level for dust deposition of 350mg/m^2/day averaged over a one-year period at any receptors outside the site boundary. Recommendations from the

Department of the Environment, Health and Local Government (DEHLG, 2004) apply the Bergerhoff limit of 350mg/m^2/day to the site boundary of quarries. The limit value can also be implemented with regard to dust impacts from construction of the proposed development as is considered best practice in the absence of sire specific guidance.

Climate Agreements

Ireland ratified the United Nations Framework Convention on Climate Change (UNFCCC) in April 1994 and the Kyoto Protocol in 1997 (Framework Convention on Climate Change, 1999 and Framework Convention on Climate Change, 1997). For the purposes of the EU burden sharing agreement under Article 4 of the Kyoto Protocol, Ireland agreed to limit the net anthropogenic growth of the six GHGs under the Kyoto Protocol to 13% above the 1990 level over the period 2008 to 2012. The UNFCCC is continuing detailed negotiations in relation to GHGs reductions and in relation to technical issues such as Emission Trading and burden sharing.

In 2015, the Paris Agreement was adopted by 196 parties at the UN Climate Change Conference (COP21) in Paris, France. The Paris Agreement is a legally binding international treaty on climate change. Its overarching goal is to hold "the increase in the global average temperature to well below 2°C above pre-industrial levels" and pursue efforts "to limit the temperature increase to 1.5°C above pre-industrial levels". The aim is to limit global GHG emissions to 40 gigatons as soon as possible whilst acknowledging that peaking of GHG emissions will take longer for developing countries. Contributions to greenhouse gas emissions will be based on Intended Nationally Determined Contributions (INDCs) which will form the foundation for climate action post 2020. Significant progress was also made on elevating adaption onto the same level as action to cut and curb emissions.

Since adoption of the Paris Agreement, global climate action has been encouraged and facilitated under the banner of the Marrakech Partnership for Global Climate Action, which was agreed in Morocco at COP 22 and acknowledged at subsequent Conferences of the Parties. The Partnership brings together in stakeholders working in key sectors and themes to spur enhanced climate ambition and action, and then recognizes that action, to inspire sill greater effort.

The EU, on the 23/24th of October 2014, agreed the "2030 Climate and Energy Policy Framework" (EC, 2014). The European Council endorsed a binding EU target of at least a 40% domestic reduction in greenhouse gas emissions by 2030 compared to 1990. The target will be delivered collectively by the EU in the most cost-effective manner possible, with the reductions in the ETS and non-ETS sectors amounting to 43% and 30% by 2030 compared to 2005, respectively. Secondly, it was agreed that all Member States will participate in this effort, balancing considerations of fairness and solidarity. The policy also outlines, under "Renewables and Energy Efficiency", an EU binding target of at least 27% for the share of renewable energy consumed in the EU in 2030.

The Effort Sharing Regulation (ESR) was adopted in May 2018 with the aim to reduce emissions from key sectors by 30% by 2030 (compared to 2005. The (ESR) is a key piece of climate legislation in the EU that sets binding annual greenhouse gas (GHG) emission reduction targets for each EU Member State in sectors not covered by the EU Emissions Trading System (EU ETS). In April 2023, the ESR was amended under which the 2030 emission target was set to -40%. The regulation assigned an emission target for each Member State. Member States had to prepared National Energy and Climate Plans to achieve the targets.

In October 2023, the EU adopted the two final pillars of its "Fit for 55" legislative package for delivering the EUs 2030 climate targets. EU countries are now legally bound to reduce emissions by at least 55% by 2030. This is an intermediate step towards new-zero emissions in 2050.

In 1999, Ireland signed the Gothenburg Protocol to the 1979 UN Convention on Long Range Transboundary Air Pollution. The initial objective of the Protocol was to control and reduce emissions of Sulphur Dioxide (SO_2), Nitrogen Oxides (NO_X), Volatile Organic Compounds (VOCs) and Ammonia (NH_3). In 2012, the Gothenburg Protocol was revised to include national emission reduction commitments for the main air pollutants to be achieved in 2020 and beyond and to include emission reduction commitments for $PM_{2.5}$.

European Commission Directive 2001/81/EC, the National Emissions Ceiling Directive (NECD), prescribes the same emission limits as the 1999 Gothenburg Protocol. A National Programme for the progressive reduction of emissions of these four transboundary pollutants has been in place since April 2005. Data available from the EU in 2010 indicated that Ireland complied with the emissions ceilings for SO_2, VOCs and NH_3 but failed to comply with the ceiling for NO_X. Directive (EU) 2016/2284 "On the Reduction of National Emissions of Certain Atmospheric Pollutants and Amending Directive 2003/35/EC and Repealing Directive 2001/81/EC" was published in December 2016. The Directive will apply the 2010 NECD limits until 2020 and establish new national emission reduction commitments which will be applicable from 2020 and 2030 for SO_2, NO_X, NMVOC, NH_3 and $PM_{2.5}$. In relation to Ireland, 2020-29 emission targets are for SO_2 (65% below 2005 levels), for NO_X (49% reduction), for VOCs (25% reduction), for NH_3 (1% reduction) and for $PM_{2.5}$ (18% reduction). In relation to 2030, Ireland's emission targets are for SO_2 (85% below 2005 levels), for NO_X (69% reduction), for VOCs (32% reduction), for NH_3 (5% reduction) and for $PM_{2.5}$ (41% reduction).

In 2019, the EU endorsed a new target of achieving net zero greenhouse gas emissions by 2050. The Commission committed to presenting an impact assessed plan to increase the existing target for 2030 of reducing emissions by 40% to at least 50% (as against 1990 levels). In Ireland, the current coalition government has enacted an ambitious Climate Law 'The Climate Action and Low Carbon Development (Amendment) Act 2021' which has committed the State to 2030 and 2050 targets for reducing greenhouse gas emissions and providing the governance framework by which this is to be realised. Compared to the 2015 Act, this is a significantly strengthened obligation, more clearly imposed on the State.

Ireland's first draft National Energy And Climate Plan (NECP) 2021 – 2030 was submitted to the European Commission in December 2018. It contains comprehensive policy framework that outlines the country's strategies and commitments to meet its energy and climate objectives. A draft updated NECP was submitted to the European Commission in July 2024. This updated plan builds upon the initial 2018 NECP and aligns with the EU's Governance Regulation, which mandates Member States to develop and periodically update their national energy and climate plans.

The Climate Action Plan was first published by the Government of Ireland in 2021 which sets the roadmap for taking decisive action to halve Ireland's emissions by 2030 and reach net zero no later than 2050. Climate Action Plan 2025 was approved by the government on the 15th of April 2025. It is the third statutory update to the plan since the Climate Action and Low Carbon Development (Amendment) Act 2021

The assessment of impact will be based on the EPA Guidance:

Quality of Effects **It is important to inform the non-specialist reader whether an effect is positive, negative or neutral**	**Positive Effects** **A change which improves the quality of the environment (for example, by increasing species diversity; or the improving reproductive capacity of an ecosystem, or by removing nuisances or improving amenities).**
	Neutral Effects No effects or effects that are imperceptible, within normal bounds of variation or within the margin of forecasting error.
	Negative/adverse Effects A change which reduces the quality of the environment (for example, lessening species diversity or diminishing the reproductive capacity of an ecosystem; or damaging health or property or by causing nuisance).
Describing the Significance of Effects **''Significance' is a concept that can have different meanings for different topics – in the absence of specific definitions for different topics the following definitions may be useful (also see Determining Significance below).**	**Imperceptible** An effect capable of measurement but without significant consequences.
	Not significant An effect which causes noticeable2 changes in the character of the environment but without significant consequences.
	Slight Effects An effect which causes noticeable changes in the character of the environment without affecting its sensitivities.
	Moderate Effects An effect that alters the character of the environment in a manner that is consistent with existing and emerging baseline trends.
	Significant Effects An effect which, by its character, magnitude, duration or intensity alters a sensitive aspect of the environment.
	Very Significant An effect which, by its character, magnitude, duration or intensity significantly alters most of a sensitive aspect of the environment.
	Profound Effects An effect which obliterates sensitive characteristics

Table 8.9 Assessment of Impact

8.2 Baseline Environment

The subject site is located south-west of Clonakilty town centre. The site is bound by existing agricultural land to the south and west with a commercial park and agricultural showground to the north of the site. The residential estate, Lady's Cross is located northwest. Clonakilty Park Hotel and Clonakilty Enterprise Centre is located to the east. The site is a greenfield site that is currently being used as agricultural land. There is an unnamed stream close to the eastern boundary of the site flowing in a generally south to north direction.

An assessment of the baseline conditions included a desktop survey and a site visit. A site visit was conducted on the 13th March 2025 by Joanne Murray, AXIS Environmental Services. The visit included a site inspection, installation of passive samplers and Bergerhoff dust.

Figure 8.6: Location of the proposed development (site generally outlined in yellow)

Impact of the proposed site development and operations are considered by taking account of the existing baseline conditions, projected impacts and compliance with relevant standards outlined in the appropriate legislation. The site is currently a greenfield site that is being used for agricultural purposes. The principal potential impacts would be from particulate matter released from site clearance, construction, earthworks and trackout activities. To a much lesser extent, there is potential for impact from combustion gas emissions from equipment on site. Climate change impacts were assessed based on the pollutants that could also be generated. When considering a development of this nature, the impacts should be assessed

in the surroundings for both the period of the construction phase and long-term operation of the proposed development.

A review of the surrounding area was undertaken with specific focus on land use and sensitive receptors. A sensitive receptor can be defined as any living thing which can be adversely affected by contaminants and/or pollution. This may include hospitals, childcare facilities, elderly housing, convalescent facilities and more. In this context, a review of the most likely sensitive receptors was determined within a catchment of 1km. With respect to the surrounding area, the nearest receptors were identified as residential dwellings, industrial/commercial premises, a residential care home and associated roads and walkways.

The following table indicates how sensitive receptors are defined for the purposes of this report:

Classification	Human	Ecological
High Sensitivity Receptor	• Locations where members of the public are exposed over a time period relevant to the air quality objective for PM_{10} (in the case of the 24-hour objectives, a relevant location would be one where individuals may be exposed for eight hours or more in a day). • Indicative examples include residential properties. Hospitals, schools and residential care homes should also be considered as having equal sensitivity to residential areas for the purposes of this assessment.	• Locations with an international or national designation and the designated features may be affected by dust soiling; or • Locations where there is a community of a particular dust sensitive species. • Indicative examples include a Special Area of Conservation (SAC) that is dust sensitive.
Medium Sensitivity Receptor	• Locations where the people exposed are workers, and exposure is over a time period relevant to the air quality objective for PM_{10} (in the case of the 24-hour objectives, a relevant location would be one where individuals may be exposed for eight hours or more in a day). • Indicative examples include office and shop workers but will generally not include workers occupationally exposed to PM_{10}, as protection is covered by Health and Safety at Work legislation.	• Locations where there is a particularly important plant species, where its dust sensitivity is uncertain or unknown; or • Locations with a national designation where the features may be affected by dust deposition. • Indicative example is a Site of Special Scientific Interest (SSSI) with dust sensitive features
Low Sensitivity Receptor	• Locations where human exposure is transient. • Indicative examples include public footpaths, playing fields, parks and shopping street.	• Locations with a local designation where the features may be affected by dust deposition. • Indicative example is a local Nature Reserve with dust sensitive features.

Table 8.10 Sensitivity Classification

8.2.1 Regional Air Quality

The existing ambient air quality in the vicinity of the site has been characterised with information obtained from a number of sources as follows:

- Environmental Protection Agency's Annual Air Quality in Ireland 2023 Report;
- EPA Ambient Monitoring Network.

The ambient air quality data reviewed for the purpose of this study focuses on the principal substances (dust, vehicle exhaust emissions and boiler emissions) which may be released from the site during the construction and operation phases and which may impact local air quality. In order to assess a range of pollutants in the development area, it is necessary to review current air quality monitoring data from published sources such as the EPA's 2023 Annual Report entitled Air Quality in Ireland. This EPA report provides detailed monitoring data collected from a number of locations throughout Ireland on an annual basis to assess national compliance with National Air Quality Regulations.

In 1996, the Environment Council adopted the Framework Directive 96/62/EC on Ambient Air Quality Assessment and Management (AAQ&M). The Directive sets a general policy framework for dealing with ambient air quality. Instead of looking first at the sources of the pollution, the Directive looks at the effects of the air pollution on human health and environments and then shifts the focus to those sources that contribute the most to the effects.

The main objectives of the Air Quality Framework Directive are to set out an EU-wide system for setting binding air quality objectives for specific pollutants to protect human health and environment. It requires Member States to put in place systems for assessing the quality of the ambient air based upon common methods and criteria. It requires Member States to maintain ambient air quality where it is good and improve it in other cases, by means of plans and programmes of action and it lays down provisions for a system of gathering, reporting and publicising information. This includes both data to be reported to the European Commission and information to be disseminated to the public.

In accordance with the regulations, the EPA have divided the country into zones for the assessment and management of air quality.

- Zone A, Dublin conurbation;
- Zone B, Cork conurbation;
- Zone C, 23 large towns in Ireland with population >15,000;
- Zone D, remaining rural areas of Ireland.

The study area falls into Zone D, remaining rural areas of Ireland.

Figure 8.7: EPA Air Quality Zone – Zone D, remaining rural areas of Ireland.

The EPA Air Quality in Ireland Report 2023 states that the main pollutants of concern are fine particulate matter ($PM_{2.5}$) from burning solid fuel in our homes, and Nitrogen Dioxide (NO_2) mainly from vehicle emissions/traffic. EPA monitoring shows that $PM_{2.5}$ and NO_2 levels are within the current EU legal limits, however the pollutants exceed the World Health Organisation (WHO) Air Quality guidelines (AQGs) for health[2]. The long-term trends in ambient $PM_{2.5}$ concentrations and NO_2 for each zone is shown in Figure 8.3 and 8.4 below.

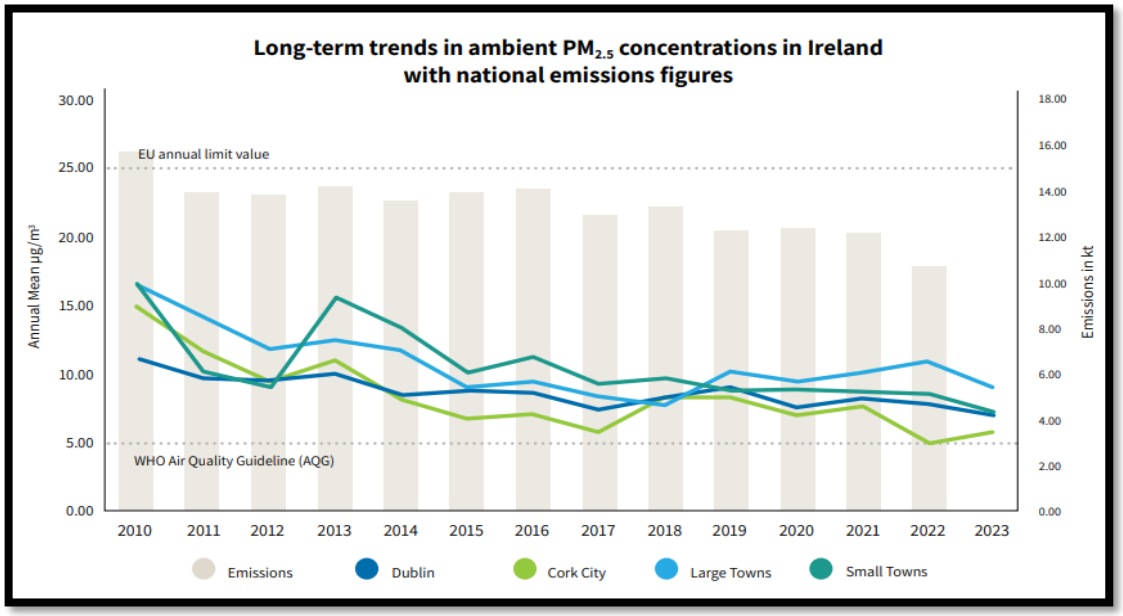

Figure 8.8: Long-term trends in ambient $PM_{2.5}$ concentrations in Ireland with national emissions figures.

[2] https://www.epa.ie/publications/monitoring--assessment/air/Air_Quality_Report_23_v13_flat.pdf

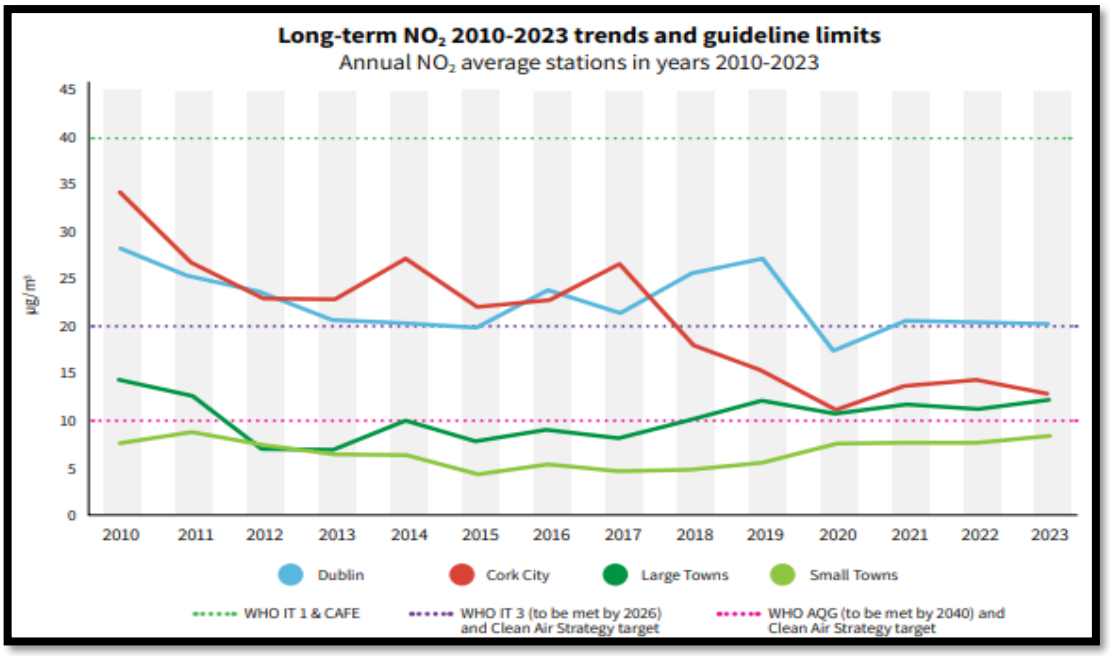

Figure 8.9: Long-term trends in ambient NO_2 concentrations in Ireland with national emissions figures.

8.2.2 Local Air Quality

The EPA have a network of ambient air monitoring sites throughout the country. The nearest national monitoring station in relation to the subject site is Clonakilty station but data is limited in this location. The only available data is $PM_{2.5}$ and PM_{10} from the 03rd March 2025 to present which is illustrated in Table 8.8. There are 12 other EPA ambient air monitoring stations are situated at different locations in Cork with the closest to the proposed development location for required parameters being Macroom, Cork Airport, Cork Lower Glanmire Road, University College Cork and South Link Road in demonstrated in Table 8.9 and 8.10.

	Clonakilty EPA Station ($\mu g.m^3$)	CAFE Directive AQS – Annual Mean [Note 1] ($\mu g.m^3$)
PM_{10}	15.1	40
$PM_{2.5}$	9.8	20

Table 8.11 EPA Ambient Air Quality Station March 2025 (Clonakilty) Note 1: 2024/2881 Directive Limits for 2026

	Cork EPA Stations ($\mu g.m^3$)	CAFE Directive AQS – Annual Mean [Note 1] ($\mu g.m^3$)
NO_2	21.9	40
PM_{10}	15.8	40
$PM_{2.5}$	9.4	20

Table 8.12 EPA Ambient Air Quality October 2024– March 2025 (Macroom, Cork Airport, Cork Lower Glanmire Road, University College Cork) Note 1: 2024/2881 Directive Limits for 2026

	Cork EPA Station ($\mu g.m^3$)	CAFE Directive AQS – Annual Mean Note 1 ($\mu g.m^3$)
SO_2	1.98	20

Table 8.13 EPA Ambient Air Quality Feb – March 2025 (South Link Road) Note 1: 2024/2881 Directive Limits for 2026

The results are well within the hourly and calendar limit values as outlined in the CAFE Directive.

Two rounds of passive sampling were also conducted onsite for Nitrogen Oxides and Sulphur Dioxide. The results are well within the hourly and calendar limit values as outlined in the CAFE Directive and are illustrated in the Tables below.

	Units	Location	Results	CAFE Directive AQS – Annual Mean Note 1
Round 1: February to March	$\mu g/m^3$	Location 1 – Northwest boundary	4.4	40
	$\mu g/m^3$	Location 2 - Southeast boundary	4.8	40
Round 2: March to April	$\mu g/m^3$	Location 1 – Northwest boundary	7.5	40
	$\mu g/m^3$	Location 2 - Southeast boundary	6.8	40

Table 8.14 Nitrogen Oxides Passive results Note 1: 2024/2881 Directive Limits for 2026

	Units	Location	Results	CAFE Directive AQS – Annual Mean Note 1
Round 1: February to March	$\mu g/m^3$	Location 1 – Northwest boundary	1.2	20
	$\mu g/m^3$	Location 2 - Southeast boundary	1.0	20
Round 2: March to April	$\mu g/m^3$	Location 1 – Northwest boundary	<0.5	20
	$\mu g/m^3$	Location 2 - Southeast boundary	<0.5	20

Table 8.15 Sulphur Dioxide Passive results Note 1: 2024/2881 Directive Limits for 2026

Passive diffusion tubes were installed at two locations on the proposed development over a 28-day period. These Tenex thermal desorption tubes were analysed for the Volatile Organic Compounds (VOCs). Where specific parameters have their own individual limit, these have been included in the tables. Both monitoring locations were well below the associated limits for VOCs.

Parameter	Units	Location 1	Location 2	2024/2881 Limits		EPA Guidance Note AG4 Limits	
				Annual	Hourly	Annual	Hourly
Total VOC	µg/m3	28	32	-	-	-	-
Toluene	µg/m3	0.62	N/D	-	-	1,910	8,000
Phenol	µg/m3	1.1	1.2	-	-	200	3,900
Benzaldehyde	µg/m3	2.5	2.3	-	-	-	-
Acetophenone	µg/m3	3.2	2.6	-	-	-	-
Benzoic Acid	µg/m3	16	21	-	-	-	-
Vinyl Benzoate	µg/m3	2.3	2.5	-	-	-	-

Table 8.16 Round 1 VOC scan results N/D – Not detected. Where "-" is implied, there are no comparable limits for that parameter. Where no limits applied in the CAFE Directive (2024/2881), reference was made to the EPA Guidance Note AG4.

Parameter	Units	Location 1	Location 2	2024/2881 Limits		EPA Guidance Note AG4 Limits	
				Annual	Hourly	Annual	Hourly
Total VOC	µg/m^3	32	31	-	-	-	-
Toluene	µg/m^3	1.1	N/D	-	-	1,910	8,000
Phenol	µg/m^3	1.1	1.1	-	-	200	3,900
Benzaldehyde	µg/m^3	3.0	2.7	-	-	-	-
Benzeneacetaldehyde	µg/m^3	0.56	N/D	-	-	-	-
Isopropylbenzene	µg/m^3	3.6	3.0	-	-	-	-
Benzoic acid	µg/m^3	21	22	-	-	-	-

Table 8.17 Round 2 VOC scan results N/D – Not detected. Where "-" is implied, there are no comparable limits for that parameter. Where no limits applied in the CAFE Directive (2024/2881), reference was made to the EPA Guidance Note AG4.

Bergerhoff dust analysis was carried out at two locations on the proposed site: northwest boundary and southeast boundary. This is a long-term ambient dust measurement carried out over a 28-day period at two locations on the proposed development site. Total Dust consists of all types of dust from a range of sources, including organic and inorganic fractions. Dust that is generated from the proposed project would largely be inorganic in nature, therefore the sample was subjected to further detailed analysis to determine this proportion of dust in the sample. The result of Bergerhoff dust analysis for the inorganic fraction was

157.1 mg/m^2/day and 139.5 mg/m^2/day. The limit set in many EPA licences for avoidance of nuisance dust is 350mg/m^2/day.

The nearest synoptic weather station operated by Met Éireann with long-term data available (for over 30 years) is located at Cork Airport, approximately 49km southwest of the site. The World Meteorological Organization (WMO) recommends that climate averages are computed over a 30-year period of consecutive records. This period is considered to be sufficiently long enough to smooth out year to year variations in meteorological parameters. The meteorological data listed below was obtained from Met Éireann and is based on 30-year records for Cork airport over the period 1991-2020.

The annual mean temperature is 10°C, with a mean daily maximum of 13°C and a mean daily minimum of 7°C. The mean relative humidity at 09:00 is 87.3% and at 15:00 is 77.5%. The mean daily sunshine duration ranges from 1.8 hours in winter to 6.2 hours in summer, with an annual average of 4 hours. The annual mean rainfall is 1239 mm with average monthly totals ranging from 80.8 mm (May) to 136.6 mm (December). On average, 161.7 days are recorded per year with rainfall greater than 1.0 mm. The annual mean wind speed is 9.8 m/s.

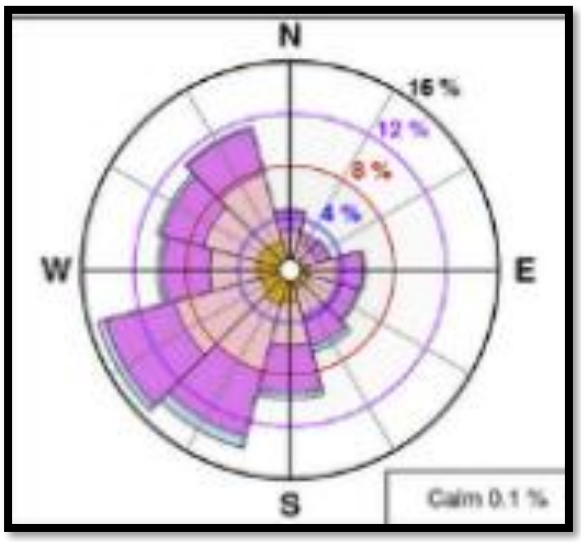

Figure 8.10: Cork Airport Windrose 1981 - 2010

8.2.3 Climate

Ireland has annual GHG targets which are set at an EU level and need to be complied with in order to reduce the impact of climate change. Impacts to climate as a result of GHG emissions are assessed against the targets set out by the EU under Regulation (EU) 2018/842 on binding annual greenhouse gas emission reductions by Member States from 2021 to 2030 contributing to climate action to meet commitments under the Paris Agreement and amending Regulation (EU) No. 525/2013 which has set a target of a 30% reduction in non-ETS sector emissions by 2030 relative to 2005 levels.

An EPA Report, completed in July 2024, 'Ireland Provisional Greenhouse Gas Emissions 1990 – 2023, reports that in 2023, overall total national greenhouse gas emissions are estimated to have decreased by 6.8% on 2022 levels to 55.01 million carbon dioxide equivalent (Mt CO_2eq). Greenhouse gas emissions from the residential sector declined substantially for the second year running while 2023 also saw the largest annual reduction in emissions from electricity generation. While there was a also a decrease in agriculture and a slight increase in greenhouse gas emission from the transport section, using the ETS flexibility Ireland can meet compliance with the ESR for 2021- 2023. The provisional estimates of greenhouse gas emissions indicate that Ireland exceeded its 2023 annual emission limit, without the use of flexibilities, set under the EU's Effort Sharing Regulation (ESR) by 2.27 Mt CO_2eq.

Provisional estimates of National greenhouse gas emissions (including LULUCF) in 2023 are 7.8% below 2018, well off the National Climate ambition of a 51% reduction by 2030. The data indicate that from 2021-2023 Ireland has used 64% (188.4 Mt CO_2eq) of the 295 Mt CO_2eq Carbon Budget for the five-year period 2021-2025. This leaves 36% of the budget available for the next two years, requiring a substantial 8% annual emissions reduction for 2024 and 2025 to stay within budget.

Greenhouse gas emissions from the Transport sector increased by 0.3% or 0.03 Mt CO_2eq in 2023, having already increased by 6% in both 2021 and 2022. Emissions in 2023 are 4.3% below 2019 pre-COVID levels. In 2023 the increased use of biofuels and electric vehicles slowed growth in emissions in this sector due to increases in the national fleet and a growing workforce.

Greenhouse gas emissions from the Residential sector declined substantially for a second year running (-7.1% or 0.4 Mt CO_2eq), with 2023 being a low point in emissions since 1990. A milder weather contributed to reduced fossil fuel use, as coal, natural gas and peat use declined by 22.1%, 13.9 and 13.0% respectively. Over 25,000 heat-pumps were installed in Irish homes in 2023 bringing the total to 120,000 with renewable ambient heat increasing by almost 25%.

Emissions from road traffic associated with the proposed development have the potential to emit carbon dioxide (CO_2) which will impact climate. The TII Guidance Air Quality Assessment of Specified Infrastructure Projects – Overarching Technical Document (December 2022) specifies that traffic data should be screened to establish if traffic changes are expected due to a proposed scheme and if these changes may affect air quality. The screening is completed using the following criteria to determine the affected road network (ARN). The criteria are based on the changes between the Do-Something (DS) traffic compared to a Do-Minimum (DM) traffic:

- Annual average daily traffic (AADT) flows will change by 1,000 or more; or

- Heavy duty vehicle (HDV) (vehicles greater than 3.5 tonnes, including buses and coaches) flows will change by 10 kph or more; or
- Peak hour speed will change by 20 kph or more;
- Daily average speed change by 10kph or more; or
- Road alignment will change by 5 meters (m) or more.

A Traffic Impact Assessment was carried out by Hegsons Design Consultancy Limited for the proposed project. The TII Traffic and Transport Assessment Guidelines for a Traffic Impact Assessment recommend that the opening year (base year) of the development and a plan year, 10 and 15 years after the opening year, should be considered for assessing the proposed development. The traffic impacts have therefore been assessed for the following years:

- Opening year of 2027 (Phase 1 – 71 Units (29%)); and
- Design years (+10 & +15 years from opening – 100%) 2037 & 2042

Opening Year 2027					
Junction	**Description**	**Do Nothing**	**Do Something**	**Change**	**%**
1	Whales Tail	16519	16840	321	1.9%
2	Clogheen Road	13078	13291	213	1.6%
3	Hotel Access	12419	13133	714	5.7%
4	The Miles	14581	14864	283	1.9%
5	Maxol Roundabout	17276	17565	289	1.7%
2037 AADT (+ 10 years)					
Junction	**Description**	**Do Nothing**	**Do Something**	**Change**	**%**
1	Whales Tail	18120	18850	730	4.0%
2	Clogheen Road	14249	14978	729	5.1%
3	Hotel Access	14047	15055	1008	7.2%
4	The Miles	15381	16585	1204	7.8%
5	Maxol Roundabout	18866	19661	795	4.2%
2042 AADT (+ 15 years)					
Junction	**Description**	**Do Nothing**	**Do Something**	**Change**	**%**
1	Whales Tail	18997	19721	724	3.8%
2	Clogheen Road	14940	15664	724	4.8%
3	Hotel Access	14701	15713	1012	6.9%
4	The Miles	16122	17330	1208	7.5%
5	Maxol Roundabout	19835	20630	795	4.0%

Table 8.18: Traffic Impact Assessment - Day Opening 2027 and Design Years 2037 & 2042.

Traffic movements associated with the development have been evaluated and assessed as part of the Traffic Impact Assessment. Over the three phases of the development from 2027, 2037 through to 2042, there are two junctions that will see greater than 1,000 increase in AADT – Hotel Access and The Miles.

8.3 Potential Impacts of the Proposed Project

The main air quality impacts that may arise during the proposed construction activities are:

- Dust deposition, resulting in the soiling of surfaces;
- Visible dust plumes, which are evidence of dust emissions;
- Elevated PM_{10} and $PM_{2,5}$ concentrations from construction activities (including earthworks and trackout);
- To a lesser extent, increase in concentrations of airborne particles and nitrogen dioxide due to exhaust emissions from vehicles and equipment used on site (non-road mobile machinery "NRMM") and vehicles accessing the site.

As with any impact, the risk will be determined by the magnitude of the source, the effectiveness of the pathway and the sensitivity of the receptor. The most common impacts are dust soiling and increased ambient PM_{10} (including $PM_{2.5}$) concentrations due to dust arising from activities on the site. As reported in the European Environment Agency EMEP Guidance, research indicates that dust suspended by construction activities has a relatively low content of $PM_{2.5}$ in PM_{10}. For construction, it is recommended that the average $PM_{2.5}$ content of PM_{10} should be assumed to be 10%.

The most common impacts are dust soiling and increased ambient PM_{10} concentrations due to dust arising from activities on the site. Dust soiling will arise from the deposition of Particulate Matter (PM) in all size fractions but would be associated mostly with particulate matter greater than 10 µm. The ambient PM relevant to health outcomes would be that measured as PM_{10}, although most of this will be in the $PM_{2.5-10}$ fraction, rather than the $PM_{2.5}$ portion

Experience of assessing the exhaust emissions from on-site plant (NRMM) and site traffic suggests that they are unlikely to make a significant impact on local air quality, and in the vast majority of cases they will not need to be quantitatively assessed. The most common impacts are dust soiling and increased ambient PM_{10} (including $PM_{2.5}$) concentrations due to dust arising from activities on the site.

The construction stage traffic has been reviewed and a screening determined that none of the link roads will be impacted by the proposed development based on assessment criteria:

- Annual average daily traffic (AADT) changes by 1,000 or more during construction;
- Heavy duty vehicle (HDV) changes by 200 or more;
- A change in speed band;
- A change in carriageway alignment by 5m or greater.

The construction stage traffic has the potential for a negligible and short-term impact on air quality.

A "human receptor' refers to any location where a person may experience the adverse effects of airborne dust or dust soiling, or exposure to particulate matter over a time period relevant to the air quality objectives. In terms of annoyance effects, this will most commonly relate to residential dwellings but may also refer to

industrial and commercial premises that have a particular sensitivity to dust impacts. The impact of dust from construction is generally localised (within 50 – 200 meters from the works).

The surrounding area has also been assessed for the presence of any ecological receptor or sensitive habitat which would be affected by dust soiling. This includes the direct impacts on vegetation or aquatic ecosystems of dust deposition, and the indirect impacts on fauna (e.g. on foraging habitats). The location of the nearest Special Areas of Conservation or Special Protected Areas was assessed for proximity and potential impact by this development.

The risk of dust emissions from a construction site causing loss of amenity and/or health or ecological effects is generally related to:

- The activities being undertaken (demolition, number of vehicles and plant etc.);
- The duration of these activity; the size of the site;
- The meteorological conditions (wind speed, direction and rainfall);
- The proximity of receptors to the activity;
- The adequacy of the mitigation measures applied to reduce or eliminate dust; and
- The sensitivity of the receptors to dust.

The quantity of dust emitted from construction operations is related to the area of land being worked and the level of construction activity (nature, magnitude and duration). Emissions from construction vehicles passing over unpaved ground can be particularly important. The impact is determined by the silt content of the soil, as well as the speed and weight of the vehicle, the soil moisture content, the distance covered and the frequency of vehicle movements.

Wind direction, wind speed and rainfall, at the time when a demolition / construction activity is taking place, will also influence whether there is likely to be a dust impact. Due to the variability of the weather, it is impossible to predict what the weather conditions will be when specific construction activities are being undertaken.

Therefore, the assessment of construction dust impacts are typically qualitative in this report. Adverse impacts can occur in any direction from the site; however, they are more likely to occur downwind of the prevailing wind. Winds in Cork are generally in a south westerly direction, which would mean that receptors from this site would in general be to the northeast of the development.

Dust impacts are more likely to occur during drier periods as rainfall acts as a natural dust suppressant.

Local wind speed and direction data can be used to assess the risk of a significant dust impact. This will depend on the frequency that the receptor is downwind and the distance of the receptors from the construction activities. It is generally the higher wind speeds that will result in the highest potential for release of dust from a site. Impacts during the summer and winter months are generally very different given the higher rainfall levels in winter and number of occasions with higher wind speeds.

There are five primary factors which influence the potential for dust to be generated from the site.

These are:

- Wind speed across the surface. Dust emissions from exposed surfaces generally increase with increasing wind speed. However, dust pick up by winds is only significant at wind speeds above 5m/s. Above wind speeds of 10m/s dust pick up increases rapidly.
- Moisture content of the material. Moisture binds particles together, preventing them from being disturbed by winds or vehicle movements. Similarly, vegetated surfaces are less prone to wind erosion than bare surfaces.
- The area of exposed surface. The larger the area of exposed surfaces the more potential there will be for dust emission.
- The percentage of fine particles in the material on the surface. The smaller the particle size of material on an exposed surface the more easily the particles are able to be picked up and entrained in the wind.
- Disturbances such as traffic and loading and unloading of materials. Vehicles travelling over exposed surfaces tend to pulverise any surface particles. Particles are displaced from rolling wheels and the surface. Dust is also sucked into the turbulent wake created behind moving vehicles.

8.3.1 Construction Phase

Ambient Air Quality

The greatest potential impact on air quality during the construction phase of the proposed development is from construction dust emissions which have the potential for nuisance dust outside the boundary of the proposed site.

As per the IAQM guidance (IAQM, 2024), the following three types of overarching dust generating activities have been assessed to reflect the different potential impacts:

- Earthworks;
- Construction;
- Trackout.

The fourth type, demolition, has been excluded as no demolition work is associated with the Proposed Development.

Activity	Discharge	Potential Impact
Earthworks	Dust / PM_{10}	There will be some excavation works on site with some reuse of material. Excavation, screening and movement of material could give rise to dust.
Construction	Dust / PM_{10}	Excavation, haulage, tipping, stockpiling will all contribute to dust in the area.
Trackout	Dust / PM_{10}	Raw materials, (stone, sand, cement), concreting, sandblasting, con sawing, etc can all generate dust.

Table 8.19 Construction activities with the potential to generate discharges into the air.

The impacts as outlined in Table 8.16 will primarily be in the form of dust fall in the smaller fractions of dust and PM_{10} / $PM_{2.5}$. Combustion gases or ozone would not be considered significant or have the

potential to impact the ambient air quality in terms of limits from the CAFE Directive given the proposed activities and would not be considered for inclusion in the risk

Distance to Nearest Receptor (m)	Dust Emission Class			
Dust Soiling and PM_{10}	Ecological	Large	Medium	Small
<20	-	High Risk Site	High Risk Site	Medium Risk Site
20 - 50	-	High Risk Site	Medium Risk Site	Low Risk Site
20 – 100	<20	High Risk Site	Medium Risk Site	Low Risk Site
100 – 200	20 - 40	Medium Risk Site	Low Risk Site	Low Risk Site
200 - 350	40 - 100	Medium Risk Site	Low Risk Site	Negligible
Assessment Criteria . Large: Total site area >110,000m^2, potentially dusty soil type (e.g. clay, which will be prone to suspension when dry to due small particle size), >10 heavy earth moving vehicles active at any one time, formation of bunds >6m in height. . Medium: Total site area 18,000m^2 – 110,000m^2, moderately dusty soil type (e.g. silt), 5-10 heavy earth moving vehicles active at any one time, formation of bunds 3m – 6m in height; and . Small: Total site area <18,000m^2, soil type with large grain size (e.g. sane), <5 heavy earth moving vehicles active at any one time, formation of bunds <3m in height The site area is <110,000m^2 and is classed as medium. The nearest receptor is within <20m of the earthworks. There are no ecological sensitive receptors <100m.				
Classification: High Risk Site				

Table 8.20 Risk Category from Earthwork Activities

Distance to Nearest Receptor (m)	Dust Emission Class			
Dust Soiling and PM_{10}	Ecological	Large	Medium	Small
<20	-	High Risk Site	High Risk Site	Medium Risk Site
20 - 50	-	High Risk Site	Medium Risk Site	Low Risk Site
20 – 100	<20	Medium Risk Site	Medium Risk Site	Low Risk Site
100 – 200	20 - 40	Medium Risk Site.	Low Risk Site	Negligible
200 - 350	40 - 100	Low Risk Site	Low Risk Site	Negligible
Assessment Criteria . Large: Total building volume >75,000m^3, on site concrete batching; sandblasting, . Medium: Total building volume 12,000m^3 – 75,000m^3, potentially dusty construction material (e.g. concrete), piling, on site concrete batching; and . Small: Total building volume <12,000m^3, construction material with low potential for dust release (e.g. metal cladding or timber) Materials used in the build are not particularly dusty and have low potential for dust release. The construction will be carried out over a phased basis so construction impacts will be reduced. The site would be considered a medium risk of dust nuisance at receptors between 20 – 100m.				
Classification: Medium Risk Site				

Table 8.21 Risk Category from Construction Activities

Distance to Nearest Receptor (m)	Dust Emission Class			
Dust Soiling and PM_{10}	Ecological	Large	Medium	Small
<20	-	High Risk Site	High Risk Site	Medium Risk Site
20 - 50	<20	Medium Risk Site	Medium Risk Site	Low Risk Site
50 – 100	20-100	Low Risk Site	Low Risk Site	Negligible
Assessment Criteria . Large: >50 HDV (>3.5t) trips in any one day, potentially dusty surface material (e.g. high clay content), unpaved road length >100m; . Medium: 10-50 HDV (>3.5t) trips in any one day, moderately dusty surface material (e.g. high clay content), unpaved road length 50m – 100m; and . Small / Medium: <25 HDV (>3.5t) trips in any one day, surface material with low potential for dust release, unpaved road length <50m Factors which determine trackout are vehicle size, speed, numbers geology and duration. Given that there could be over 50 trips during peak activity, the site would be considered as a high risk site at receptors of <20m.				
Classification: High Risk Site				

Table 8.22 Risk Category from Trackout Activities

Source	Dust Soiling effect	Ecological Effects	Health effects
Earthworks	Medium Risk Site	Low Risk Site	High Risk Site
Construction	Medium Risk Site	Low Risk Site	Medium Risk Site
Trackout	High Risk Site	Low Risk Site	High Risk Site

Table 8.23 Summary of the Risk of Dust Effects with no Mitigation

The determination of risk effects is combined with the sensitivity of the surrounding landscape in terms of human health, air quality and ecological receptors. Dependent on the level of risk and level of impact, suitable controls and mitigation measures are implemented. These measures will form part of the Construction & Environmental Management Plan to ensure there is no negative impact during construction.

In the absence of any mitigation measures, the overall impact on ambient air quality from the construction phase of the development would classified as negative, moderate, likely and short-term. In order to ensure that dust nuisance does not occur, a series of preventative measures and a dust management plan will be formulated for the construction phase of the project. This mitigation measures are summarised in Section 8.4.

Human Health and Ecological Impacts

While construction dust tends to be deposited primarily within the confines of the construction site, the majority of the deposition occurs within the first 50 meters from source.

The proposed site is located south-west of Clonakilty town centre. The site is bound by existing agricultural land to the south, and west with a commercial park and agricultural showground to the north of the site. The residential estate, Lady's Cross is located northwest and will provide an alternative means of access. Clonakilty Park Hotel is located to the east. Particulate matter from earthwork and track out activities will be most likely to impact these receptors during these phases. Examples of these receptors are identified in Figure 8.6 below. The construction management plan will provide for significant focus on dust suppression efforts and management techniques in this area.

Figure 8.11 Sensitive Receptors within 50m radius (highlighted in blue)

Particulate matter (PM_{10})

The size of particles is directly linked to their potential for causing health problems. Small particles less than 10 micrometres in diameter pose the greatest problems, because they can penetrate into the lungs, and some may even enter the bloodstream. Exposure to such particles can affect the lungs and heart. Particle pollution exposure has been linked to a variety of problems, including:

- Premature death in people with heart or lung disease;
- Nonfatal heart attacks;
- Irregular heartbeat;
- Decreased lung function;
- Increased respiratory symptoms, such as irritation of the airways, coughing or difficulty breathing.

Particles can be carried over long distances by wind and then settle on ground or water. Depending on their chemical composition, the effects of this settling may include:

- Making lakes and streams acidic;

- Changing the nutrient balance in coastal waters and large river basins;
- Depleting the nutrients in soil;
- Damaging sensitive forests and farm crops;
- Affecting the diversity of ecosystems;
- Contributing to acid rain effects.

In order to minimise the impact of particulate matter on the local environment, limits have been set out in the EU Directive 2024/2881, also known as the CAFE Directive. The limits for particulate matter in the form of PM_{10} are to ensure 24-hour average concentrations do not exceed 50ug/m^3 on more than 35 occasions in any one year, or an annual average of 40ug/m^3. From 2030, a limit of 20ug/m^3 for an annual average for particulate matter less than 2.5 microns is applied for an annual mean.

Nitrogen Dioxide

Nitrogen Dioxide (NO_2) mainly impacts on respiratory conditions causing inflammation of the airways at high levels. Long term exposure can decrease lung function, increase the risk of respiratory conditions and increases the response to allergens. NO_2 also contributes to the formation of fine particles (PM) and ground level ozone, both of which are associated with adverse health effects.

High levels of NO_2 can have a negative effect on vegetation, including leaf damage and reduced growth. It can make vegetation more susceptible to disease and frost damage. NO_2 also reacts with other pollutants in the presence of sunlight to form ozone which can damage vegetation at high concentrations. The limit value objective for the protection of vegetation is 30µg/m^3 measured as an annual average. The values applied in the CAFE Directive for protection of human health are 40µg/m^3 for a calendar year average and 200µg/m^3 is not to be exceeded in any one-hour period on more than 18 times in a calendar year.

Benzene

Benzene (C_6H_6) is a clear, colourless and flammable liquid with a sweet petrol-like smell. Benzene is found in ambient air as a result of burning fuels, such as coal, petrol and wood. Benzene is common in unleaded fuel, where it is added as a substitute for lead, allowing smoother running. Benzene concentrations in fuel were once as high as 20%, but are now reduced to <1% in many countries, due to harmful health impacts. The World Health Organisation (WHO) and International Agency for Research on Cancer (IARC) classify benzene as a group one carcinogen. Prolonged exposure to high concentrations of benzene causes leukaemia and impacts red and white blood cells.

Less severe health impacts can occur at lower concentrations, causing headaches, nausea, drowsiness and even unconsciousness. The values applied in the CAFE Directive for protection of human health an annual average standard of 5µg m^{-3} .

Carbon Monoxide (CO)

Carbon monoxide (CO) affects healthy and unhealthy people. Increased levels of carbon monoxide reduce the amount of oxygen carried by haemoglobin around the body in red blood cells. The result is that vital organs, such as the brain, nervous tissues and the heart, do not receive enough oxygen to work properly.

For healthy people, the most likely impact of a small increase in the level of carbon monoxide is that they will have trouble concentrating. Some people's coordination is affected, and they get tired more easily. People with heart problems are likely to suffer more frequent and longer angina attacks and are at greater risk of heart attack. Children and unborn babies are particularly at risk because they are smaller and their bodies are still growing and developing.

The levels of carbon monoxide in the general environment is low at approximately 500 - 2000ug/m^3. The CAFE Directive has a limit applied of 10,000µg/m^3 which is not to be exceeded in any 8-hour period for the protection of human health. The impact on the local environmental from carbon monoxide would be negligible as the primary source would be from operational HDV. The volumes of vehicles proposed for use at this site would not be considered significant in terms of emissions.

Suspended Particulate Matter

Suspended particulate matter could also be released which tends to remain suspended in the atmosphere over longer distances. The main effects of this could be immediate impacts on site of reduced visibility and off-site impact of respiratory nuisance. Dust can be generated as a result of disturbance of materials, as a result of wind speed and direction and from construction vehicles operating on site.

In general, there would be lower concentrations of dust released during the construction phase; however any earth works or deliveries of materials can give rise to dust that could be a potential nuisance off site if not adequately mitigated against. In the context of air pollution, the relative significance of the site and surrounding areas must be taken into account. The sensitivity of an area can be defined by use of the criteria outlined in Table 8-21.

Sensitivity	Human receptors	Ecological receptors
Very high	Very densely populated area. More than 100 dwellings within 20m. Local PM_{10} concentrations exceed the objective. Contaminated buildings present. Very sensitive receptors (e.g. oncology units). Works continuing in one area of the site for more than one year.	European Designated site.
High	Densely populated area. 10-100 dwellings within 20m of site. Local PM_{10} concentrations close to the objective (e.g. annual mean 36-40 µg/m^3).	Nationally Designated site
Medium	Commercially sensitive horticultural land within 20m. Suburban or edge of town area. Less than 10 receptors within 20m. Local PM_{10} concentrations below the objective (e.g. annual mean 30-36 µg/m^3).	Locally designated site.
Low	Rural area; industrial area No receptors within 20m Local PM_{10} concentrations well below the objectives (less than 75%) Wooded area between site and receptors	No designations.

Table 8.24 Factors Defining Sensitivity of the Area

Given the above assessment criteria, the proposed development would be considered an area of Medium Sensitivity based on human factors as there are limited numbers of sensitive receptors within 20m of the proposed development and local PM_{10} data is well below that allowable under the CAFE Directive for daily and annual averages. There are no designated ecological sensitive receptors (SPA or SAC's) in close proximity to the development.

The sensitivity of the local area is determined for dust soiling, human health and ecosystem impacts respectively. The following tables take account of a number of factors which may influence the sensitivity of the area surrounding the proposed development.

Receptor Sensitivity	Number of Receptors	Distance from the Source (m)			
		<20	<50	<100	<350
	>100	High	High	Medium	Low
High	10 – 100	High	Medium	Low	Low
	1 – 10	Medium	Low	Low	Low
Medium	>1	Medium	Low	Low	Low
Low	>1	Low	Low	Low	Low
The proposed development would be classified as an area of medium sensitivity, with >1 sensitive receptor at a distance of <20 metres from the construction project.					
Classification: Medium sensitivity					

Table 8.25 Construction: Sensitivity of the area to dust and soiling effects on people and property

Receptor Sensitivity	Number of Receptors	Distance from the Source (m)			
		<20	<50	<100	<350
	>100	High	High	Medium	Low
High	10 – 100	High	Medium	Low	Low
	1 – 10	Medium	Low	Low	Low
Medium	>1	Medium	Low	Low	Low
Low	>1	Low	Low	Low	Low
The proposed development would be classified as an area of medium sensitivity, with >1 sensitive receptor at a distance of <20 metres from the earthworks project.					
Classification: Medium sensitivity					

Table 8.26 Earthworks: Sensitivity of the area to dust and soiling effects on people and property

Receptor Sensitivity	Number of Receptors	Distance from the Source (m)			
		<20	<50	<100	<350
	>100	High	High	Medium	Low
High	10 – 100	High	Medium	Low	Low
	1 – 10	Medium	Low	Low	Low
Medium	>1	Medium	Low	Low	Low
Low	>1	Low	Low	Low	Low
The proposed development would be classified as an area of medium sensitivity, with >1 sensitive receptor at a distance of <20 metres from the trackout route.					
Classification: Medium sensitivity					

Table 8.27 Trackout: Sensitivity of the area to dust and soiling effects on people and property