Proposed Strategic Housing Development at
Ballymacaula, Drumbiggle, Keelty,
Circular Road, Ennis, Co. Clare

Volume I

Non-Technical Summary

August 2022

Glenveagh
Home of the new.

McCutcheon Halley
CHARTERED PLANNING CONSULTANTS

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1 Introduction to EIAR and Non-Technical Summary

1.1 Introduction

The preparation of a Non-Technical Summary (NTS) is a requirement under the EIA directive as one of the fundamental objectives of the EIA process is to "*ensure that the public are made aware of the environmental implications of any decisions about whether to allow new projects to take place*".

This NTS provides a concise and comprehensive summary of the assessments carried out, a description of the project, its existing environment and the effects of the proposed project on the environment.

The Environmental Impact Assessment Report (EIAR) sets out the results of the environmental assessments which have been completed for the proposed development to inform the planning consent process.

The assessment has been completed as a statutory environmental assessment. The environmental impact assessment process has been completed in line with Directive 2014/52/EU, based on the draft guidance presented in Guidelines on the Information to be contained in Environmental Impact Assessment Reports, Draft (EPA 2017).

1.2 Development Description

The development description is set out in detail in Chapter 2 Project Description, and briefly summarised below. Glenveagh Homes Ltd. are applying for permission for the construction of a Strategic Housing Development (SHD) at Ballymacaula, Drumbiggle, Circular Road, Ennis, Co. Clare.

The proposed development will compromise;

- The construction of 289 no. residential units comprising a mixture of 12 no. 1 bed apartments, 78 no. 2 bed townhouse/duplex units, 165 no. 3 bed dwelling houses, and 34 no. dwelling houses which will have an option of a 3- or 4-bedroom house-type.
- A 400.7m2 creche/childcare facility.
- The provision of landscaping, open space, and amenity areas, including play/exercise equipment, a linear amenity walkway, informal play areas and local play areas.
- The provision 2 no. pedestrian connections to the existing public footpath along the N85, 2 no. pedestrian connections into Ballymacaula View Estate, improvements/upgrades to the pedestrian footpaths along Circular Road including an uncontrolled pedestrian crossing and pedestrian footpath provision along part of the Drumbiggle and Cahercalla Roads.
- All associated infrastructure and services including 1 no. vehicular access point onto Circular Road, car parking and bin storage, lighting, 2 no. ESB substations, drainage and 1 pumping station, boundary treatments at Ballymacaula, Drumbiggle, Circular Road, Ennis, Co. Clare.

The location and context of the site within Ennis is shown on Figure 1.1 and the site layout is shown on Figure 1.2.

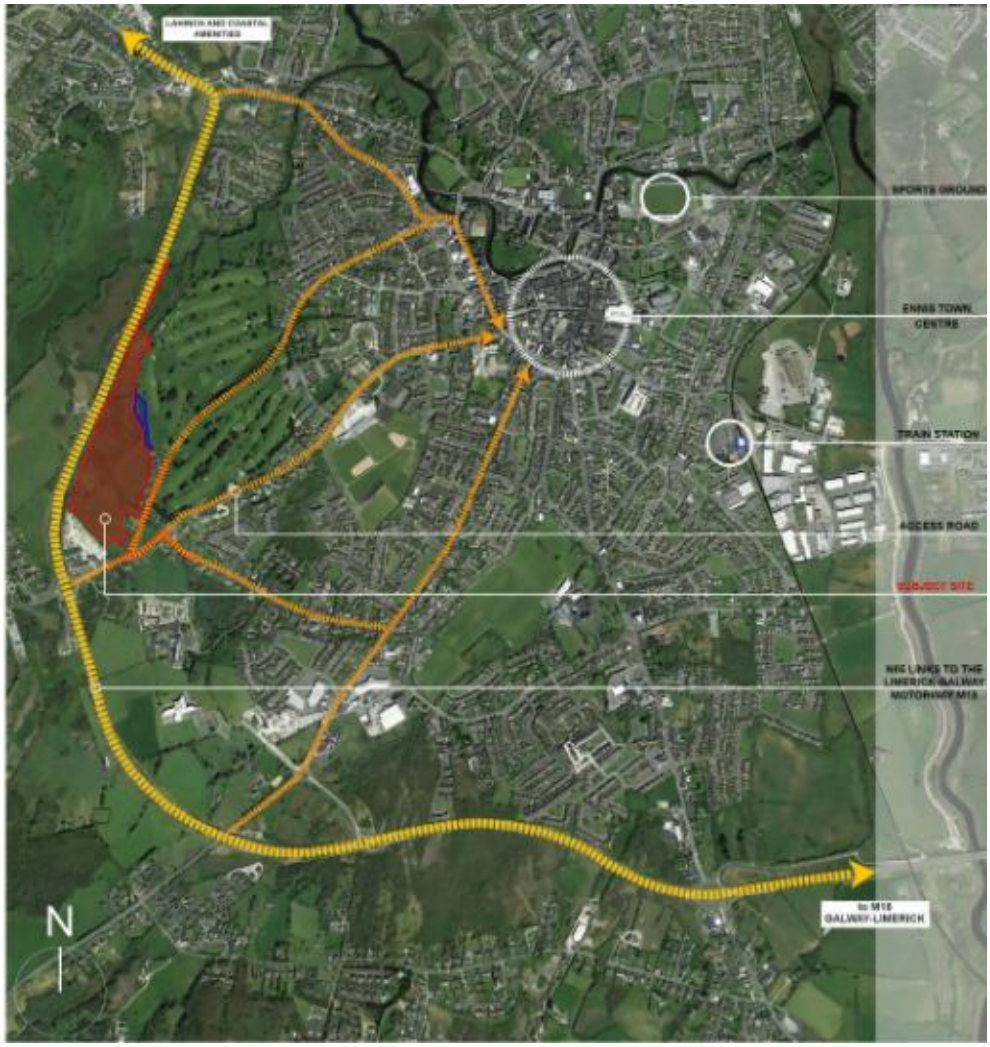

Figure 1.1: Site Context

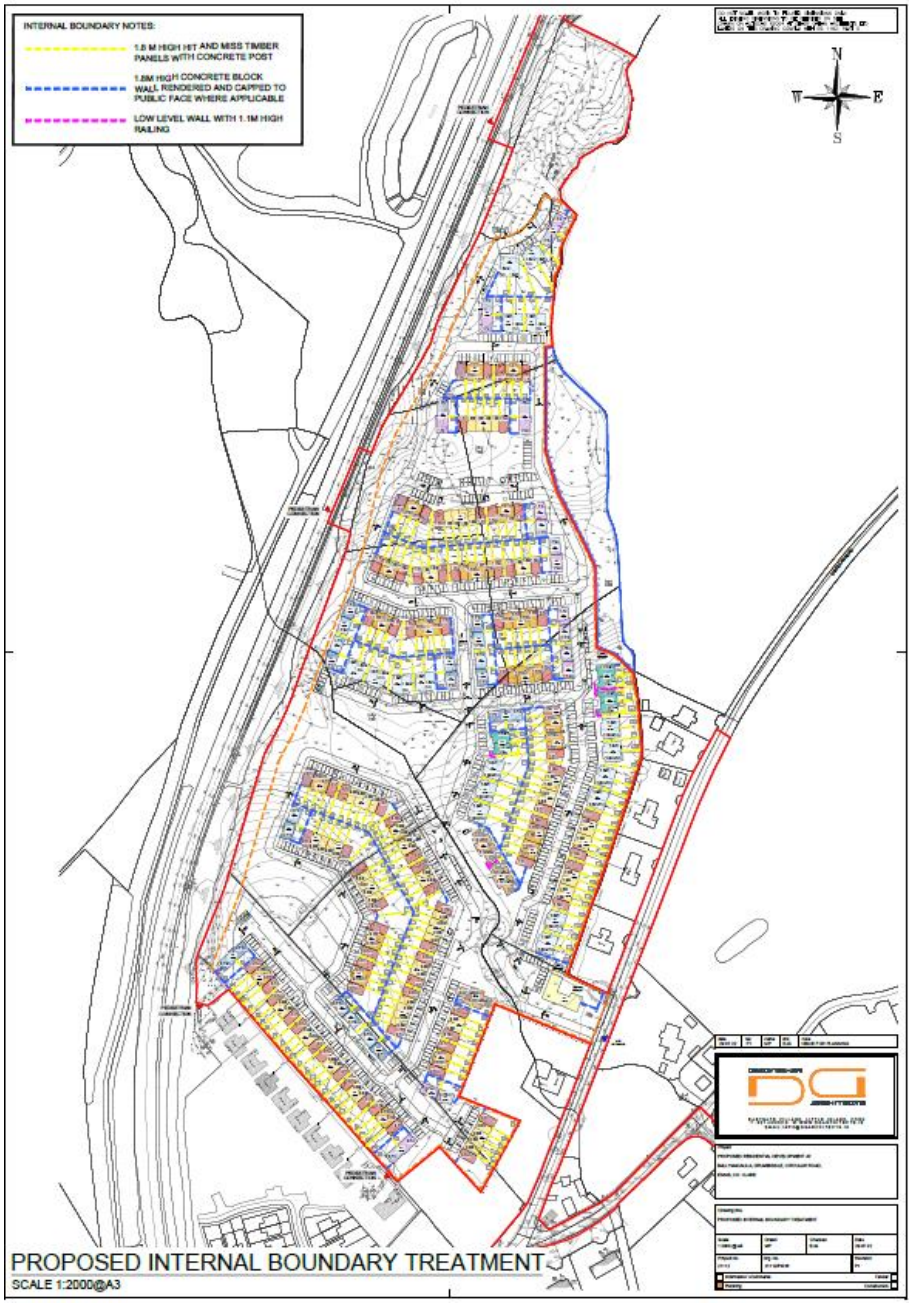

Figure 1.2: Site Layout

1.3 Screening for Environmental Impact Assessment

Environmental Impact Assessment (EIA) requirements derive from EU Directives. Council Directive 2014/52/EU amended Directive 2011/92/EU and is transposed into Irish Law by the European Union (Planning and Development) (Environmental Impact Assessment) Regulations 2018. The Requirement for projects needing an Environmental Impact Assessment is listed in Schedule 5 of the Planning and Development Regulations 2001-2018 (as amended).

Schedule 5 (Part 2) of the Planning & Development Regulations 2001-2018 set mandatory thresholds for each project class. Sub-section 10 addresses 'Infrastructure Projects' and requires that a number of classes of project be subject to EIA. The following are applicable to the proposed development.

> *10. Infrastructure Projects*
>
> *(b) (i) Construction of more than 500 dwelling units*
>
> *(b) (iv) Urban Development which would involve an area greater than 2 hectares in the case of business district, 10 hectares in the case of other parts of a built-up area and 20 hectares elsewhere*
>
> *(in this paragraph 'business district' means a district within a town or city win which the predominant land use is retail or commercial use)*

1.3.1 Study Area

The study areas are defined individually for each environmental topic, according to guidance and the geographic scope of the potential impacts or of the information required to assess those impacts. Details are provided by each discipline as part of the description of baseline conditions of the site.

1.3.2 Report Structure

This EIAR has been prepared according to the 'Grouped Format Structure'. This means that each topic is considered as a separate section and is drafted by relevant specialists.

The EIAR is divided into three Volumes as follows:

Volume I: Non-Technical Summary
Volume II: Main Environmental Impact Assessment Report
Volume III: Appendices to the Main Environmental Impact Assessment Report

1.4 Design Team and Competency

McCutcheon Halley Planning Consultants (MH Planning) are the planning consultants and project co-ordinators of the EIAR. The qualifications of consultants responsible for each discipline is provided in the introduction to the relevant chapter. Production of the EIAR has been co-ordinated by Majella O'Callaghan, Senior Planner with McCutcheon Halley Planning and Aoife Browne, Planning Consultant, graduated from UCC with Master of Planning and Sustainable Development and Bachelor of Arts.

The EIAR Structure and consultant responsible for each of the chapters is set out in Table 1.1.

Table 1.1: Former Ford Site EIAR: List of Consultants and Responsibility

Consultant	Chapters prepared
McCutcheon Halley Planning, 6 Joyce House, Barrack Square, Ballincollig, Cork. **Tel: (021) 4208710**	Chapter 1 Introduction Chapter 2 Project Description Chapter 13 Population and Human Health Chapter 14 Significant Interactions

e-mail: info@mhplanning.ie	Chapter 15 Summary of Mitigation and Monitoring Chapter 16 Risk of Major Accidents or Disasters
Deady Gahan Architects, **Eastgate Village, Little Island, Co. Cork** **Tel: (021) 4365006**	Chapter 2 Project Description Chapter 3 Alternatives Considered
Tobin Engineers, **Block 10-4, Blanchardstown Corporate Park, Dublin 15, D15 X98N** **Tel: (01) 803 0406** **e-mail: richard.daly@tobin.ie**	Chapter 2 Project Description Chapter 5 Material Assets – Traffic and Transportation Chapter 6 Material Assets – Service Utilities and Infrastructure Chapter 7 Soils and Geology Chapter 8 Hydrology and Hydrogeology
Doyle O'Troithigh **Beggars Lane, Mountcross, Bridgetown, Co. Wexford** **Tel: (01) 608 7782** **e-mail: linda@doyle-otroithigh.com**	Chapter 4 Landscape and Visual Impact
Enviroguide **3D Core C, Block 71, The Plaza, Park West, Dublin 12, D12 F9TN** **Tel: (01) 565 4730** **e-mail: jdowdall@enviroguide.ie**	Chapter 9 Biodiversity
AWN Consulting	Chapter 10 Noise and Vibration Chapter 11 Air Quality and Climate Change
John Cronin and Associates, **3A Wesport Trade Centre, Ballincollig, Co. Cork** **TelL (021) 421 4368**	Chapter 12 Cultural Heritage and Archaeology
GNet 3D, **NSC Campus, Mahon, Co. Cork** **Tel (021) 230 7043**	Photomontages and CGI's

1.5 Methodology

The EIAR has been prepared in accordance with the requirements set out in the Planning and Development Act 2001 (as amended) and in Council Directive 2011/92/EU as amended by Directive 2014/52/EU (the EIA Directive). The Planning and Development Acts and Regulations 2000 to 2018 have been amended by the European Union (Planning and Development) (Environmental Impact Assessment) Regulations 2018 (SI No. 296 of 2018) to take account of the requirements of the EIA Directive (Directive 2014/52/EU).

Annex IX of the EIA Directive and Schedule 6 of the European Union (Planning and Development) (Environmental Impact Assessment) (Regulations) 2018 specify the information to be contained in EIAR. These requirements identify a range of prescribed environmental factors, the significant effects of which have been addressed in this EIAR. These include population and human health, biodiversity, land and soil, water, air and climate, noise, landscape, cultural heritage and material assets as well as the inter-relationship between the above topics.

The preparation of this EIAR was also undertaken in accordance with the following guidance;

- Department of Housing, Planning, Community and Local Government (2018) Guidelines for Planning Authorities and An Bord Pleanála on carrying out Environmental Impact Assessment (August 2018);
- Department of Housing, Planning, Community and Local Government (2017) Transposition of 2014 EIA Directive (2014/52/EU) in the Land Use Planning and EPA Licencing Systems;
- Department of Housing, Planning, Community and Local Government (2017) Implementation of Directive 2014/52/EU on the effects of certain public and private projects on the environment (EIA Directive): Advice on the Administrative Provisions in Advance of Transposition;

- Environmental Protection Agency (2017) Revised Guidelines on the Information to be contained in Environmental Impact Assessment Reports (Draft August 2017);
- Environmental Protection Agency (2015) Advice Notes for Preparing Environmental Impact Statements (Draft September 2015).

1.6 Consultation

The EIAR was scoped following an appraisal of the EPA guidelines of information contained within the EIAR through design team meetings and with the specialist consultants and the formal pre-planning meeting on 15th of October 2021 with representatives from Clare County Council. The EIAR was also informed by guidance and in particular the Inspector's Report and Opinion received from An Bord Pleanala during the Pre-Application Consultation Process (ABP-Ref: 312194-21)

Prior to lodging this application, the required information has been issued for the Department of Housing, Planning and Local Government's EIA Portal. The purpose of this tool is to inform the public, in a timely manner, of applications that are accompanied by the EIAR.

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A dedicated website has been created for the project; this is available here: at http://housinggovie.maps.arcgis.com/apps/webappviewer/index.html?id=d7d5a3d48f104ecbb206e7e5f84b71f1.

Prescribed Bodies / Agencies

1) Department of Culture, Heritage, & the Gaeltacht (Development Applications Unit)
    I. National Monuments Services;
    II. National Parks & Wildlife Service (NPWS);
2) Department of Education;
3) Geological Survey Ireland;
4) The Heritage Council;
5) Office of Public Works (OPW);
6) Transport Infrastructure Ireland (TII);
7) The National Transport Authority
8) The Health and Safety Authority;
9) The Health Service Executive (HSE);
10) Inland Fisheries Ireland;
11) Bat Conservation Ireland;
12) Irish Water;
13) An Taisce;
14) Birdwatch Ireland

1.7 Cumulative Impacts

Projects considered for their potential cumulative impacts with the proposed development are identified in Table 1.2 of Chapter 1. Within the EIAR other disciplines may have identified further projects which are considered to be relevant to their assessments.

The following projects were identified as being proposed or permitted in proximity to the proposed SHD and have been assessed by each discipline for potential cumulative impacts. No significant negative cumulative impacts have been identified.

Table 1.2: Projects considered for cumulative impacts

Proposal/Application	Planning Reference/An Bord Pleanála Reference	Comment
Permission for the proposed building upgrade works to, DSP Intro Office, Block 1, Government Buildings, Kilrush Road, Ennis, Co. Clare. Works include: A) Replacement roof finish and rooflight: B) New PV panels to roof and rooflight b) New PV Panels to roof C) New external wall insulation and render D) Elevation changes to include new doors and entrance lobby screens E) New Service Yard to the south-west of the building F) Changes to the site layout to include EV charge points All associated site works	Clare County Council Ref: 22/139	Under Review by Clare County Council
Permission for the construction of 58 no. residential units at Drumbiggle, Ennis, Co. Clare. Alterations and upgrade to the access road and associated site development works. The application is accompanied by a Natura Impact Statement (NIS)	Clare County Council Ref: 21/599 and ABP Ref: 313217-22	Under Appeal with An Bord Pleanála, decision due 08th August 2022
Permission for a change of use from retail warehouse to discount foodstore, extension to the rear and north of the existing building resulting in a total gross floor area of 2,270m^2	Clare County Council 21/756 and ABP Ref: 311569-21	Under Appeal with An Bord Pleanála.
Permission for demolition of existing farm shed, refurbishment and conversion of existing farmyard building into 10 no. housing units, refurbishment and conversion of the existing coach house into 1 no. housing unit and construct 4 no. terraced dwelling houses within the curtilage of the Protected structure of Cahercalla House.	Clare County Council Ref: 18/8009	Permitted by Clare County Council on the 17th August 2018
Permission for the construction of 39 no. 2 storey dwelling houses and 3 no. single storey dwelling houses, the provision of a foul pumping station and associated raising main to existing foul sewer, retire existing 38Kv overhead lines and associated poles within the proposed development and erect 2 number triple pole 38Kv cable end poles.	Clare County Council Ref: 17/237, ABP Ref: 300590-18	Permitted by An Bord Pleanála on the 29th May 2018

2 Project Description

2.1 Introduction

The EIA Directive requires that an EIAR includes a description of the project comprising information on the site, design, size and other relevant features of the project. Recital 22 of the 2014 Directive requires that

> *"In order to ensure a high level of protection of the environment and human health, screening procedures and environmental impact assessments should take account of the impact of the whole project in question, including, where relevant, its subsurface and underground, during the construction, operational and, where relevant, demolition phases".*

This chapter satisfies the requirements of the EIA Directive, providing detail on the location, size and characteristics of the proposed project.

2.1.1 Author

This section of the EIAR has been prepared by Deady Gahan Architects, in conjunction with McCutcheon Halley Planning Consultants.

This chapter will set out a detailed description of the project together with details of the existing environment. The site has presented some challenges and issues to be resolved along the design process and they have mainly been caused by the long and complex planning history as Deady Gahan Architects were not involved in the previous design which was granted planning and extensive research needed to be conducted to ensure a complete knowledge of the planning history of the area, dealing with noise mitigation along the N85 national road and the difficult topography of the land.

2.2 Description of Existing Environment

The subject site of 11.32 Ha is located west of Ennis town center and occupies a green field site beside the N85 National Road. In the immediate context of the site is Ennis Golf Club to the east and a recently completed development to the southwest of the subject site. The site is located near a variety of facilities in Ennis town within a 20-minute walking distance.

The site itself is made up of a group of Greenfields subdivided by a variety of hedgerows. These native hedgerows define the existing field boundaries and are part of the local green infrastructure network. There are several mature tree species contained within the hedgerows with prominent high value trees retained within the open spaces. These are dealt with further in the Landscape and Visual Impact Chapter (Chapter 4) and the Biodiversity Chapter (Chapter 9).

The proposed layout will take the place of a previously granted scheme taking up a section of the site. The previous scheme consisting of 98 units had been granted on part of the site (under An Bord Pleanála Ref. No. 306088-19), and consisted of a large quantity of apartments and duplex units.

2.3 Description of the Proposed Development

The proposed development has been designed to provide high-quality houses that will contribute positively to Ennis and deliver much needed housing to Clare. The proposed scheme is located on a key site to promote connections west of the town centre to the N85.

The proposed scheme has a density of 32.5 units/HA considered on a net developable area of 8.9 HA which is appropriate for residential zoned land in close proximity to Ennis town centre. For this calculation the buffer strip along the N85 boundary and the zoned open space to the north of the site

have been excluded from the site area of 11.32 HA. The proposed layout includes 289 no. residential units ranging from 1 bed apartments to 4 bed semi-detached units. This housing mix is focused on providing affordable homes for both individuals and families alike. There is also a childcare facilities, a 60-child crèche, on the eastern boundary of the site. It has been placed adjacent the site entrance to allow for convenient accessibility and to address the Circular Road by creating an entrance feature.

Connectivity is one of the central design principles of the proposed scheme. The current layout is therefore crossed by several connections and links which connect to the adjacent areas. Logical movement routes through the new hierarchy of streets and paths assists vital future connections and the integration of the scheme into its context. The positive impact of the improved connectivity provides local residents with new links to take advantage of an existing transport infrastructure.

The proposed development places an emphasis on walking and cycling as a more appropriate mode of transport. An adequate number of car parking spaces has been provided, with particular attention to visitors, disabled and electric vehicle parking spaces. Adequate bike stores have been placed near the duplex-apartments and serving the central townhouse units.

In line with the existing site topography the project raises from north to south by approximately 25 meters. The proposed buildings are arranged in line with the existing contours to minimize the visual impact on the surrounding environment and to reduce the cut and fill and the movement of ground on site. This is discussed more in Chapter 7 – Soils and Geology of the EIAR.

To ensure the visual integration of the site, the proposed development will promote, where possible, the protection and enhancement of natural features on site, including hedgerows and tree lines. The subject site contains a number of such features both within the site and along the site boundaries. These features are integrated within the proposed development to emboss the identity of the proposed 3 no. Character Areas.

Particular attention was placed in the design of the public open spaces to create a strong and well-connected network of usable and enjoyable green areas, cycle and pedestrian paths, plazas and shared surfaces. These features will enhance/contribute to a sense of place.

The hedgerows within the site have been incorporated into the open spaces to create visual and physical connections between the dwellings and open spaces on site and the proposed amenity walk along the western boundary. A series of pedestrian connections are located along the southern, northern and western boundaries to create a permeable site allowing routes through the development.

The larger open spaces are located in the centre and southern sections of the site and act as node points to navigate through the development. These open spaces are carefully positioned in order to take full advantages of the existing topography and provide generous and usable spaces.

The development is structured to enable the creation of neighborhoods featuring distinct architectural languages. Each of these character areas are grouped around a central space creating a recognizable sense of place by using a mix of landmark housing typologies and blend of materials unique to that location.

3 Alternatives Considered

3.1 Introduction

This section of the EIAR has been prepared by Deady Gahan Architects, in conjunction with McCutcheon Halley Planning Consultants.

Several different scenarios and layouts were taken under consideration before arriving at the final layout which has been described in Chapter 2, Project Description. All these scenarios and layouts were developed in consultation with the Design Team. This chapter will set out why the final layout was selected and provides details of alternative layouts considered throughout the design and consultation process. This serves to indicate the main reasons for choosing the layout as proposed.

Several different scenarios and layouts were taken under consideration before arriving at the final layout which has been described in Chapter 2, Project Description. All these scenarios and layouts were developed in consultation with the Design Team. This chapter will set out why the final layout was selected and provides details of alternative layouts considered throughout the design and consultation process. This serves to indicate the main reasons for choosing the layout as proposed.

3.2 Description of Existing Environment

A detailed description of the existing environment is provided in Chapter 2 Project Description.

3.3 Consideration of Alternatives

3.3.1 Do Nothing Scenario

The 'Do-nothing' alternative is a general description of the evolution of the key environmental factors of the site and environs if the proposed project did not proceed.

The Ennis site comprises of a number of agricultural fields subdivided by a variety of hedgerows, with an undulating topography. The existing land-uses in the vicinity of the subject site comprise primarily residential, with a number of local services including a convenience supermarket, pharmacy, school, golf course, recreational uses, showgrounds, crèche and nursing home, all located within approximately 1 kilometre of the site entrance.

This proposed development proposes a high-quality layout and design, based on the provision of a mix of high-quality dwellings in three distinct neighbourhoods and creates a sustainable connection to Ennis town centre, prioritising pedestrians and cyclists. Due to the previous planning history, it is considered that the "do-nothing" scenario would result in a smaller sized development with a higher quantity of apartment blocks on the site which does not cater for the requirements in the area.

In addition to the above, under a 'do-nothing' scenario, the proposed development site would remain in its current condition as a greenfield site and it would not fulfil its residential zoning objective. Accordingly, there would be a negative/adverse effect on population, as this approach would fail to address the shortage of houses in Ennis. This development maximised the efficiency of zoned land and is therefore of critical importance.

There would be no increase in traffic under the 'do nothing' scenario, however, the site would fail to achieve the National Planning Framework, National Strategic Outcomes for compact growth and sustainable mobility, both of which have a positive climate and human health benefits.

A 'do-nothing' scenario is an inappropriate and unsustainable approach that would result in the inefficient use of a strategically located and easily serviced area of zoned residential lands. A 'do nothing' approach is likely to result in a neutral impact on the environment in relation to material assets, water, land, air, climate, cultural heritage, biodiversity and landscape.

3.4 Alternative Locations

Section 3.4 sets out the reasons why the current site is considered the most appropriate for the development and why no alternative locations were considered. These reasons are summed up below:

- The leading vision of the Applicant and the Design Team since the inception of the project has been to develop a high-quality residential scheme on zoned land. The site is located beside the N85 national road to its west, with pedestrian and vehicular connections to Ennis town centre to the east. There are a variety of connections to nearby towns and Shannon airport. Within the context of the site, a range of amenities are located within walking distance including various schools, recreational uses and shops.
- The site offered significant opportunity to deliver a large residential development on underutilised greenfield site in close proximity to existing services and in close proximity to Ennis town centre and the site has capacity to absorb development without significantly effecting the existing landscape and visual characteristics of the surrounding area.

3.5 Alternative Layouts

The final layout, presented in the Architectural Drawings and the Design Statement which should be read in conjunction with this chapter of the EIAR, has evolved since the initial design stage subsequent to a number of design team meetings and in response to pre-planning meetings with Clare County Council and An Bord Pleanála.

The scheme has undergone a rigorous appraisal, which has led to a final layout that responds appropriately to the site characteristics, opportunities and constraints.

Section 3.5 sets out the intermediate design progressions of the scheme, includes figures showing the proposed layout at each stage and outlines the positive and negative characteristics of each layout, until the final scheme.

3.6 Alternative Design

Section 3.6 sets out the reasons why the Design Team consider that the proposed design and layout is the optimal scheme for the subject site. These reasons are summed up below:

- The design of the layout has been informed by the characteristics, the opportunity and the constraints of the site.
- The proposed scheme provides an appropriate density and a good mix of housing typologies to meet the needs of the future residents.
- The project is focused in following and working with the contours and in retaining the native trees and hedgerows where possible that give a distinctive character to the development. Permeability is also very important and is achieved by providing connections between the proposed development, the N85, and the recently constructed development currently to the south with pedestrian connections to these included as part of this proposed development.

3.7 Alternative Processes

This is not considered relevant to the EIAR having regard to the nature of the proposed residential development. The proposed construction work comprises relatively of standard building construction processes, as such there are no specific alternative construction processed identified in this EIAR. It is also considered there is no new or technical challenging operational techniques required and no alternative operational process have been considered as part of this development.

3.8 Cumulative Impact

Each design iteration considered any potential impacts on neighboring developments (existing, under construction and future), transforming the edges of the scheme to provide an appropriate transition to its direct context and reducing the potential of cumulative impacts.

The noise buffer consisting of existing hedgerows with supplemented planting protects the scheme from the N85 to the west, with existing hedgerows creating boundaries to the south, east and north of the site.

3.9 Mitigation Measures

The mitigation measures outlined throughout the various EIAR chapters are considered appropriate for the proposed development therefore no alternative mitigation measures were considered in the preparation of this chapter.

4 Landscape and Visual Impact

4.1 Introduction

This Landscape and Visual Assessment (LVIA) has been prepared by Doyle + O'Troithigh landscape architecture. The purpose of this landscape and visual assessment is to assess the impact of the proposed development on the existing landscape of the site and the visual impact of the proposals on adjoining residents and the wider general public. The site is on the outskirts of Ennis and is located in the transition zone between the surrounding undeveloped hinterland and the existing residential housing associated with the town of Ennis.

The LVIA Report reviews the site's landscape with respect to the existing features and uses but also reviews wider designations, referencing the current Co. Clare Development Plan, in terms of views and prospects, landscape character and the presence of National Monuments. The location and setting of the site are also examined with respect to existing adjoining residential development and impacts of the proposed development on the existing landscape setting and features.

The site lands are located approximately 1.5Kms to the southwest of Ennis town centre between the N85 and the R474 roads and adjoining Ennis Golf Club. The lands are divided into a number of rough grazing fields separated by the now overgrown hedgerows. The undulating lands slope from southeast to northwest towards the local Claureen River. The newly constructed Ballymacaula housing development bounds the site to the south and the established housing on the R474 bound the site to the east. The golf club lands also form part of the eastern boundary, and the lands are set above the N85 road which is in a cutting and runs along the western boundary.

The proposed residential development will impact on the existing landscape features with some low landscape value hedge removal and excavations for the roads and buildings. It is proposed to retain particularly ecologically valuable sections of hedgerow and incorporate these into the landscape design of the open space areas. Significant tree and other biodiverse rich planting are proposed across the site to help integrate the site into the existing landscape and create an attractive and biodiverse rich location for the future residents.

The site's location on agricultural lands on the outskirts of the town of Ennis and the nature of the undulating landscape of the site would indicate that there would be some level of visual impact from the proposals. In order to evaluate the level and significance of visual impacts a field study indicated areas where the visual impacts may arise. Ten publicly accessible locations around the site were chosen and photomontages were created to demonstrate the potential visual impacts arising. The results showed that the construction stage would result in mainly Slight Negative Short term visual impacts with views 3,4, & 8, being Moderate Negative Short Term Visual impacts. The long-term operation stage visual impacts would be mainly Imperceptible Neutral with View 4 being Slight Negative and View 8 being Neutral to Positive. The layout and design of the proposals would create a residential development that would be acceptable from a landscape and visual perspective.

5 Material Assets: Traffic and Transport

5.1 Introduction

The full assessment of Material Assets: Traffic and Transport is contained within Chapter 5 of Volume II of the EIAR. This NTS provides a summary of the issues and impacts relating to the material assets of traffic and transport in respect of the subject lands.

5.2 Summary

The proposed development is bounded to the West by the N85 Road, and to the South and East by the R474 Circular Road. An assessment of the traffic impact on the existing road network by the proposed development in Ennis Co. Clare was undertaken. The site is forecast to generate 180 vehicle movements during the AM peak and 143 movements during the PM peak times. An allowance was made in the Traffic and Transport Assessment for trip generation of committed development in the area. The development was scoped with Clare County Council with the following junctions selected for analysis:

- Junction 1: Roundabout Junction (Beechpark) N85 / R474
- Junction 2: Priority Junction R474 / Drumbiggle Road
- Junction 3: Roundabout Junction R474 / Cloughleigh Rd / Davitt Terrace
- Junction 4: Priority Junction R474 / R458
- Junction 5: Priority Junction Proposed Access / R474

The Road Safety Audit carried out for the proposed development during the planning stage considered various aspects such as, junction design, provision for pedestrians, provisions for cyclists and road signage, marking and lighting. Recommendations noted from the independent company undertaking the road safety audit, CST Group Chartered Consulting Engineers, have been taken into account and the concerns raised have either been designed out or will be considered and suitable measures put in place during the detailed design stage.

The proposed development has integrated a number of measures in line with the relevant standards and guidelines, such as DMURS 2019 and the National cycle Manual, which promotes the use of sustainable travel to and from the site. Mitigation measures are to be implemented to promote and encourage more sustainable transport modes. Footpaths on the R474 Circular Road will encourage pedestrians to walk to the Ennis Town Bus Stops which are 1.5km away from the site. The proximity to the Bus Stops will encourage pedestrians to utilise the higher frequency Public Transport options. The proposed development is located close to a number of amenities such as local shops to the east of the proposed development, some 19 minutes walking (approx. 1.6km).

5.3 Conclusion

Based on this assessment it is considered that in general, the traffic generated by the proposed development in Ennis, Co. Clare will be adequately accommodated on the local highway network in the vicinity. The junctions are predicted to be below capacity without the development traffic in the future design years. The analysis predicts that the inclusion of the development traffic will result in a slight increase in the degree of saturation for the junctions, with all junctions forecast to continue to operate below capacity.

The implementation of the Operational Phase mitigation measures, such as the pedestrian, public transport and cycling measures, a shift in the modal spilt can be accomplished resulting in a reduction in the impact on the junction capacities.

6 Material Assets: Service Infrastructure and Utilities

6.1 Introduction

The full assessment of Material Assets: Services, Infrastructure and Utilities is contained within Chapter 6 of the EIAR. This NTS provides a summary of the issues and impacts relating to the material assets of surface water drainage, foul water drainage, water supply and utilities in respect of the subject lands.

6.2 Surface Water Drainage

There is no existing surface water network within the existing development site. The rainwater falling onsite naturally percolates directly to groundwater.

The proposed storm sewer collection system consists of a 100 mm diameter pipe collection network around each house in accordance with TGD part H discharging to 225mm diameter uPVC sewer pipes or larger under the estate streets. The surface water network layout and typical details are shown in the following drawings:

- Drainage Layout Sheet 1 of 3 (11269-2101),
- Drainage Layout Sheet 2 of 3 (11269-2102),
- Drainage Layout Sheet 3 of 3 (11269-2103),
- Drainage Layout Sheet 4 of 4 (11269-2104),
- Typical Attenuation/Soakaway Unit and Cross Section Detail (11269-2125)
- Standard Manhole Details Sheet 1 of 2 (11269-2127),
- Standard Manhole Details Sheet 2 of 2 (11269-2128),
- Standard Pipe Bedding Details (11269-2129),

It is proposed to approach the management of surface water drainage for the development using the principles of sustainable Urban Drainage Systems (SuDS). The overall strategy aims to provide an effective system to mitigate the adverse effects of urban surface water runoff on the environment by reducing rainfall runoff rates to equal greenfield runoff, reducing the overall volume leaving the site and reducing pollutant concentrations in the surface water. The proposed SUDS features in the development are modular permeable paving on driveways, EcoCell underground attenuation/soakaway units, petrol interceptors, Hydrobrake flow controls an infiltration basin and bio-swale.

The proposed surface water drainage networks will run to underground soakaway cells or an infiltration basin, from which the water will be contained until it naturally flows through the soil beneath the cells/infiltration basin and into the water table below ground level. Surface water from the infiltration basin will run through a hydro brake manhole, which controls the discharge rate of the water, and then onto a bio-swale before discharging to the Claureen River.

Possible negative effects from this drainage proposal include flooding of the area, however, the design of the drainage system minimises this. Another possible negative effect is the release of pollutants

from the water in the system entering a natural watercourse. But this is eliminated by oil/petrol interceptors, which treat the water for pollutants before it is discharged.

6.3 Wastewater Drainage

The layout of the proposed wastewater drainage network for the development and its typical details are shown on the following drawings:

- Drainage Layout Sheet 1 of 3 (11269-2101),
- Drainage Layout Sheet 2 of 3 (11269-2102),
- Drainage Layout Sheet 3 of 3 (11269-2103),
- Standard Manhole Details Sheet 1 of 2 (11269-2127),
- Standard Manhole Details Sheet 2 of 2 (11269-2128),
- Standard Pipe Bedding Details (11269-2129),

The network is a conventional piped, gravity sewer flowing to a wastewater pumping station in the North and lowest area of the site from where it is proposed to pump the wastewater, via a rising main, to the existing public wastewater sewer in the Cahircalla Road to the East of the site.

The proposed wastewater network has been designed in accordance with Irish Water specifications and a pre-connection enquiry was submitted to Irish Water. Irish Water has confirmed in consultations that connection of the proposed network is feasible with minor upgrades to the local wastewater treatment plant and has accepted the wastewater design submitted. See Appendix D to the Civil Works Design Report and Appendix 6.2 to this report for Irish Water correspondence.

The laying/construction of the foul network will be a standard trench excavation and kept as shallow as possible, adhering to Irish Waters Codes of Practice. All wastewater designs will be fully vetted by Irish Water prior to receiving an offer to connect.

Traffic will be affected during the construction phase when connecting the proposed wastewater network to the existing network. The connection location to the existing wastewater network is circa 350m away from the site entrance. Therefore, will consist of a rising main being constructed on the public road to this network.

These works will have a significant effect on traffic as a section of the road will need to be closed during the works until completion. Traffic movements associated with the proposed development are addressed within Chapter 5 – Traffic of this EIAR, this chapter specifically deals with traffic and the impact of the development on road infrastructure. A construction traffic management plan (CTMP) has been prepared by TOBIN to help reduce the impact of traffic during the works period. No long-term impacts are envisaged on the existing wastewater network from the construction stage.

6.4 Watermain Design

It is proposed to connect the watermain for the development to an existing watermain that runs past the proposed entrance in the Circular Road. Irish Water has confirmed that this connection is feasible without upgrade to the local water supply infrastructure.

A 150mm diameter watermain is proposed to supply water to the proposed development, while a 100mm diameter PE watermain will breach off this spine main to service the clusters of houses/Cul-de-sacs as per the following accompanying drawings:

- Proposed Watermain Layout Sheet 1 of 3 (11269 - 2109)
- Proposed Watermain Layout Sheet 2 of 3 (11269 – 2110)

- Proposed Watermain Layout Sheet 3 of 3 (11269 - 2111)

The watermain will be metered in accordance with Irish Water requirements at the entrance to the proposed development to monitor bulk water usage.

There will be some disruption to the existing watermain whilst making the connection, but the works will be brief and any potential temporary shutdowns to water supply will be agreed with Irish Water and people that will be affected will be advised in advance of the short-term impacts that they may experience.

See Appendix 6.2 to this report for the Irish Water confirmation of feasibility for the water pre-connection enquiry.

6.5 Electricity Supply

There are existing power lines running along the eastern boundary of the site, this development proposes to underground the power line. There is a 10kV line running from south to north through the site that will also need to be undergrounded. There will be 2No. new substations constructed. One at the rear of the creche located near the entry to the estate and the other located in the centre of the eastern boundary. The proposed substations will provide power to several mini pillars which will provide power to the residential dwellings.

It is proposed to underground the existing power lines that are currently overhead from the southern boundary to the ESB distribution facility to the west of the site.

When the structures, ducting and new cabling is in place and ready for connection there will need to be a short-scheduled outage of power supply to the local area as the overhead cables are shut down and the underground cables become live. This outage will be agreed with the ESB, local residents and businesses and they will be warned and the impact from the construction phase of the proposed development on the local electrical supply network is likely to be brief and imperceptible.

6.6 Communications

Telecoms ducting and cables will be laid within the development site during the construction stage. Prior to the operational phase of the development this internal network will be connected to the local infrastructure of one or more of the telecoms providers in the area.

The potential impact from the construction phase of the proposed development on the local telecoms network is likely to be brief, neutral and imperceptible.

6.7 Gas

No gas is proposed for the development and no works are envisaged to the local gas network.

6.8 Earthworks

The development of the subject site will require the stripping of top and sub soils and the excavation or fill of ground to formation level. Estimates of the earthwork cut and fill volumes are described in Chapter 7 – Soils and Geology of this EIAR and a prepared Preliminary Construction Waste Management Plan, accompanying this application.

Construction activities and vehicle movements shall be in accordance with the Construction Environmental Management Plan, Construction Waste Management Plan and the Construction Traffic Management Plan, all formulated by the appointed Main Contractor and overseen by their

Construction and Demolition Waste Manager in order to minimise any impact on the existing environment and the surrounding area.

7 Soils and Geology

7.1 Introduction

The proposed project is described in detail in Chapter 2 'Project Description'. The site of the proposed development is currently a greenfield site. The site is adjacent to Ennis Golf Club, North/North-East of the site. The west boundary is bounded by the N85 Ennis Bypass/Western Relief Road and the eastern boundary by the R474 Regional Road, Circular Road, into Ennis. There are 7 no. private residential homes between the eastern boundary of the site and the R474 and a small, newly built residential estate along the southern boundary of the site. In addition, the development will also include ancillary public open space and ancillary residential parking spaces.

Infill material will be imported on-site. This material will either be quarried product from quarries that have planning permission; greenfield/inert soil imported under a Waste Permit issued by a local authority; or materials that have been approved as by-products by the EPA accordance with the EPA's criteria for determining a material is a by-product, per the provisions of article 27(1) of the European Communities (Waste Directive) Regulations, 2001.

The site is predominately in agricultural use with the exception of a few residential properties on the site boundaries. The site comprises of a series of irregularly shaped fields divided by hedgerows and some scrub typical of agricultural setting. The site does not contain any existing dwellings and farm outbuildings. The western proposed development boundary is bounded by the Ennis western bypass. According to the EPA data (2022) there are no licensed activities within the site boundary of the proposed development or directly adjacent to it.

The impact of the proposed development on land, soils, geology and hydrogeology has been assessed. The objectives of the assessment were as follows:

- Produce a baseline study of the existing environment
- Identify likely significant effects of the proposed development during the construction phase and operational phase of the development
- Identify mitigation measure to avoid, remediate or reduce significant effects and
- Assess significant residual effects and cumulative effects of each aspect of the proposed project cumulatively and in-combination with other developments.

7.2 Construction Phase

Earthworks are required to reprofile the site to the design levels of the development. It is proposed to keep all soils on site to achieve an earthworks balance. Mitigation measures have been proposed to manage the impact of the development on land, soils, and geology.

7.3 Potential Impacts

7.3.1 Operational Phase

The operational stage of the residential development consists of the typical activities in a residential area and will not involve significant disturbance to land, soils and geology.

7.3.2 Cumulative Impact

The cumulative impact of other adjacent development has been assessed. No significant cumulative impacts on land, soil, geology will occur due to the proposed development.

7.4 Mitigation Measures

Stripping of topsoil will be managed with the proposed staging of the development. At any given time, the extent of topsoil strip (and consequent exposure of subsoil) will be limited to the immediate vicinity of active work areas. Topsoil's stockpiles will be protected for the duration of the works and not located in areas where sediment laden runoff may enter existing surface water drains. Topsoil stockpiles will also be located so as not to require double handling.

Surface water runoff from areas stripped of topsoil will be directed to on-site settlement ponds where measures will be implemented to capture and treat sediment laden runoff prior to discharge of surface water at a controlled rate.

No large or long-term stockpiles of fill material will be held on the site. At any time, the extent of fill material held on site will be limited to that needed in the immediate vicinity of the active work area.

Smaller stockpiles of fill, where required, will be suitably protected to ensure no sediment laden runoff enters existing surface water drains. Such stockpiles are to be located in order to avoid double handling.

Earthworks plant and vehicles delivering construction materials to site will be confined to predetermined haul routes around the site.

It is expected that all stripped topsoil will be reused on site (incorporated into landscaping of back gardens and public open spaces).

7.5 Conclusion

The development of the project will have a not-significant negative long-term effect on the land, soil, and geological hydrogeological environment, through the application of identified mitigation measures and appropriate management of the development.

8 Hydrology and Hydrogeology

8.1 Introduction

The impact of the proposed development on hydrology and hydrogeology has been assessed. The objectives of the assessment were to:

- Produce a baseline study of the existing environment;
- Identify likely significant effects of the proposed development during the construction phase and operational phase of the development;
- Identify mitigation measures to avoid, remediate or reduce significant effects and,
- Assess significant residual effects and cumulative effects of each aspect of the proposed project cumulatively and in-combination with other developments.

The site is a gently undulating site comprised of open field and encroaching scrub from overgrown/rank hedgerows. Surface water drainage comprises the Claureen River which runs to the northwest of the northern development site boundary, and which flows in a NE direction. The river is also known as the Inch River and converges with the river Fergus farther to the NE which in turn ultimately discharges into the Fergus and Shannon Estuary. Regional and local hydrology is intrinsically connected to the hydrogeological setting within the greater development area.

8.2 Potential Impact

8.2.1 Construction Phase

Risk of impact to the Claureen River during construction is temporary and can be managed by way of establishing suitable water management and sediment control practices. Earthworks are required to reprofile the site to the design levels of the development. It is proposed to keep all soils on site to achieve an earthworks balance. Mitigation measures have been proposed to manage the impact of the development on surface water.

8.2.2 Operational Phase

The developable area and open attenuation pond are located outside the predicted flood extents of the Claureen River. All works within the floodplain are drainage associated, and will not impact existing ground levels, fluvial flow routes or floodplain storage. The operational stage of the residential development consists of the typical activities in a residential area and will not involve significant disturbance on the water environment. The storm drainage the site that will result during operations may release sediment and potential pollutants to the local drainage channels.

8.3 Mitigation Measures

The use of plant and machinery during construction works will require the storage and use of fuels and oils. Any servicing of vehicles on-site will be confined to designated areas. Spill kits will be retained on-site to ensure that all spillages or leakages are dealt with immediately and staff will be trained in their proper use. Storage tanks, used to store fuel for plant and machinery, will be self-contained, bunded, and double-walled. Refuelling plant and equipment will be carried out from these tanks or from delivery vehicles at designated refuelling areas. The design of all bunds will conform to EPA bunding specifications. Details of spill protection measures and emergency spill response procedures will be included in a Construction and Environmental Management Plan (CEMP).

Programming of works will need to be such that earthworks are not scheduled during severe (wet) weather conditions. Where such weather is forecast, suitable measures will be taken to secure the works.

Following the Site-Specific Flood Risk Assessment, it has been determined that the site / zoned developable area is located in Flood Zone C as defined by the Guidelines. No proposed dwellings are located in Flood Zone A or B Surface water runoff from the site will be attenuated to the greenfield runoff rate. Surface water discharge rates will be controlled by a Hydrobrake type vortex control device in conjunction with below ground attenuation storage. Sustainable Urban Drainage Systems will be implemented for the proposed development.

8.4 Cumulative Impact

The cumulative impact of other adjacent developments has been assessed. No significant cumulative impacts on land, soil and geology will occur due to the proposed development.

8.5 Conclusion

The development of the project will have a not-significant negative long-term effect on the land, soil, and geological hydrogeological environment, through the application of identified mitigation measures and appropriate management of the development.

9 Biodiversity

9.1 Introduction

An assessment of the likely effects on biodiversity (flora and fauna) arising due to the proposed development at Ballymacaula, Circular Road, Ennis, Co. Clare was undertaken by Enviroguide Consulting. The assessment involved several steps and was conducted by suitably qualified ecologists.

9.2 Assessment

The assessment involved several steps and was conducted by suitably qualified ecologists. Firstly, the baseline ecological surveys were undertaken to assess the nature conservation importance of the proposed site. Secondly, the direct, indirect and cumulative ecological implications or impacts of the proposed projects during its lifetime were assessed. Finally, where possible mitigation measures to remove or reduce negative impacts during the Construction and Operational Phases of the proposed development were proposed.

For this biodiversity chapter, baseline ecological surveys involved a combination of both desk based and field studies. A desk study was conducted to assess existing information relation to the site's natural environment. A range of field surveys were undertaken including habitat surveys, bird surveys, flightless mammal surveys, bat surveys and invasive species surveys. All surveys were conducted following standard and/or best practice protocols.

The main ecological value of the site of the Proposed Development is the value of its natural and semi-natural habitats (scrub, trees and hedgerows). The Proposed Development will result in the loss of the majority of internal hedgerow habitats on Site. The north, northeast, and southwest hedgerow habitat on Site will be retained. A total of 6 bat species were recorded at the Site, with Lesser Horseshoe Bat included among them. The linear vegetation and scrub within the Proposed Development Site are used as foraging and commuting habitat for local bat populations. Four trees on-site were noted as having bat roost potential and will be felled utilising specific methods designed for the safety of potentially roosting bats. Several bird species were also recorded throughout the hedgerow and scrub habitat on Site. The Site contain suitable habitat for small mammals (hedgehog, pygmy shrew) particularly along the boundaries of the Site, and within the internal hedgerows and scrub habitat on Site. No Badger signs (setts, latrines, snuffle holes) were recorded at the Site. Red Fox were recorded utilising the Site. Overall, the Proposed Development Site has been evaluated to be of *Local importance (higher value)* having regard for the conservation evaluation scheme (NRA 2009) as "*Sites or features containing common or lower value habitats, including naturalised species that are nevertheless essential in maintaining links and ecological corridors between features of higher ecological value*".

The Proposed Development Site itself is not designated. The closest designated Sites to the Proposed Development include Lower River Shannon SAC, Newhall and Edenvale Complex SAC, Pouladatig Cave SAC, and River Shannon and River Fergus Estuaries SPA. The Lower River Shannon SAC and River Shannon and River Fergus Estuaries SPA are hydrologically connected to the Proposed Development via surface water drainage from the Site to the Inch River. The Site lies within 2.5km foraging range of the Lesser Horseshoe Bats associated with the Newhall and Edenvale Complex SAC and Pouladatig Cave SAC.

Potential impacts arising from the Construction and/or Operational Phase of the Proposed Development, in the absence of mitigation, can be summarised as follows:

- Water quality impacts to the Inch River and River Fergus, and associated aquatic species arising from surface water- run off during the Construction and Operational Phase
- Groundwater quality impacts during the Construction Phase, as the Site lies on karst bedrock
- Noise and dust emissions from the proposed development site during the construction phase
- Spread of invasive alien flora during the Construction Phase
- Semi-natural habitat loss
- Disturbance to bats within the site due to increased lighting and potential loss of foraging and/or commuting habitat during the Construction Phase and Operational Phase
- Disturbance and/or mortality of birds within the site, due to increased lighting, human presence and loss of potential nesting habitat during the Construction Phase and Operational Phase

Potential Impacts of the Proposed Development were predicted to range from slight to significant at the local scale only and can be addressed with the mitigation measures proposed.

To address impacts on freshwater environments and nearby designated sites arising from surface water discharges, a range of mitigation measures to protect surface water quality are provided. These surface water mitigation measures will remove the pathway (e.g., no release of wastewater generated on-site into nearby waterbodies or existing drains during the Construction Phase) or treat the source (e.g., removal of silt from surface waters via incorporation of sustainable drainage systems (SuDS) into the project design during the Operational Phase). These measures will also protect the mitigate impacts to groundwater contamination during the Construction Phase of the Proposed Development.

Additional native hedgerow and woodland planting within the Site will contribute to the mitigation of the loss of hedgerow and scrub habitat at the Site. The retention of the hedgerow along the west, north, and northeast boundaries of the Site, along with wildlife-friendly lighting, will allow for these dark corridors to be utilised as commuting habitat for light-sensitive bat species.

Disturbance and/or mortality of local fauna within the Site (e.g., bats, otter, small mammals, and birds) is addressed in the Biodiversity Chapter. The mitigation measures outlined ensure that there will be no significant impact on local fauna at the Site. The mitigation measures address the source of impacts (e.g., night-time light pollution, dust, noise, timing of and approach to vegetation clearance, increased human presence).

The potential spread or import of invasive alien flora during the Construction Phase is addressed in the Biodiversity Chapter. Measures ensure that the source of the impact (i.e., the invasive flora) is removed from or prevented entering the Site so that there is no pathway for transfer of invasive flora to the surrounding environs.

9.3 Conclusion

Provided all mitigation measures are implemented in full and remain effective throughout the lifetime of the development, no significant residual negative impacts on the local ecology or any designated nature conservation sites are expected from the proposed development.

10 Noise and Vibration

10.1 Introduction

Chapter 8 of the EIAR provides information on the assessment of the noise and vibrations impacts on the surrounding environment during both the construction and operational phases of the proposed development.

10.2 Methodology

The study has been undertaken using the following methodology:

- Environmental noise surveys have been conducted at locations representative of the closest noise sensitive locations to the site;
- A review of the most applicable standards and guidelines has been carried out in order to set a range of acceptable noise and vibration criteria for the construction and operational phases of the proposed development;
- Predictive calculations have been performed to determine the noise and vibration impact on the nearest sensitive locations during the construction phase;
- An assessment of the likely key sources of noise associated with the operational phase are identified and potential impacts calculated; and
- A schedule of mitigation measures has been proposed for both the construction and operational phases to reduce, where necessary, any significant noise and vibration impacts arising from the development; The inward impact of noise from the surrounding environment on the proposed buildings has also been assessed to determine the requirements for additional noise mitigation to provide suitable residential amenity for the occupants of the site.

10.2.1 Baseline Noise Environment:

The baseline noise environment at the closest noise sensitive locations to the proposed development and across the development site is influenced by road traffic along the surrounding road network, activities within neighbouring residential areas and general environmental noise sources. The range of noise levels measured are typical of a suburban environment.

10.2.2 Construction Phase:

Construction noise calculations have been performed representing typical noise levels associated with the construction of the various phases of work on site. The results of the assessment have determined that construction works can operate within the construction noise limits adopted for the project at distances beyond 15m. This indicates that potential exceedances of the construction thresholds may occur when construction activities are occurring within 15 from residential dwellings along the western boundary, however due to the dynamic nature of construction activities this potential impact is temporary in nature.

A range of noise mitigation measures have been included to reduce construction noise levels at the closest site boundaries including the inclusion of a solid construction site hoarding along noise sensitive boundaries. The application of binding noise limits and hours of operation, along with implementation of appropriate noise control measures, will ensure that the noise impact is controlled to within the construction significance thresholds.

Vibration impacts during the construction phase of the proposed development are not significant at the nearest sensitive buildings due to the type of construction activity on site, the low levels of vibration associated with same and the distances to nearest sensitive buildings. Site activities will be managed so as not to exceed the vibration limits set out in Chapter 8.

10.2.3 Operational Phase

The main potential sources of outward noise from the development during the operational phase relate to traffic flows to and from the development via public roads and any mechanical and electrical plant used to service the proposed buildings. The primary sources of outward noise in the operational context are deemed to be long term in nature. There are no vibration sources associated with the operational phase.

The assessment has determined that the above sources will not generate any significant noise impact at existing noise sensitive locations in the surrounding environment. Residential properties within the development itself are the closest noise sensitive locations to any noise sources generated within the site.

A range of noise mitigation and best practice control measures have been included within the assessment to control noise levels at the closest noise sensitive properties within the development once operational.

11 Air Quality and Climate Change

11.1 Introduction

AWN Consulting Limited has been commissioned to conduct an assessment of the likely impact on air quality and climate associated with the proposed Strategic Housing Development Ballymacaula, Circular Road, Ennis, Co. Clare. The proposed development will consist of mix of residential units, a creche, landscaping and amenity areas and all associated infrastructure works.

11.2 Methodology and Assessment

In terms of the existing air quality environment, baseline monitoring data available from similar environments indicates that levels of nitrogen dioxide, particulate matter less than 10 microns and less than 2.5 microns are generally well below the National and European Union (EU) ambient air quality standards.

The existing climate baseline can be determined by reference to data from the EPA on Ireland's total greenhouse gas (GHG) emissions and compliance with European Union's Effort Sharing Decision "EU 2020 Strategy" (Decision 406/2009/EC). The EPA state that Ireland had total ESR GHG emissions of 43.48 Mt CO2eq in 2021. This is 2.71 Mt CO2eq higher than Ireland's annual target for emissions in 2021. The EPA predict that Ireland can comply with the GHG targets for 2021 – 2030 provided full implementation of the measures outlined within the Climate Action Plan and the use of the flexibilities available.

Impacts to air quality and climate can occur during both the construction and operational phases of the proposed development. With regard to the construction stage the greatest potential for air quality impacts is from fugitive dust emissions impacting nearby sensitive receptors. Impacts to climate can occur as a result of vehicle and machinery emissions. In terms of the operational stage air quality and climate impacts will predominantly occur as a result of the change in traffic flows in the local areas associated with the proposed development.

There are a number of high sensitivity residential properties within 20m of the site boundary along Circular Road to the east and further to the south of the site. A high level of sensitivity to construction dust soiling impacts has been assigned to the surrounding area. The surrounding area is considered of low sensitivity to human health related dust impacts. The IAQM guidance was used to determine the level of risk associated with the construction phase of the proposed development in relation to potential dust impacts to the surrounding area. It was determined that there is a high risk of dust soiling impacts and a low risk of human health related dust impacts as a result of the construction phase activities. Provided the dust mitigation measures outlined in Appendix 11.2 of Chapter 11 are implemented, dust emissions are predicted to be short-term, negative and imperceptible and will not cause a nuisance at nearby sensitive receptors.

The best practice dust mitigation measures that will be put in place during construction of the proposed development will ensure that the impact of the development complies with all EU ambient air quality legislative limit values which are based on the protection of human health. Therefore, the impact of construction of the proposed development will be short-term, localised, negative and imperceptible with respect to human health.

Potential impacts to air quality and climate during the operational phase of the proposed development are as a result of a change in traffic flows and volumes on the local road network. The changes in traffic flows were assessed against the UK Design Manual for Roads and Bridges (DMRB) screening criteria for an air quality and climate assessment. The change in traffic on the surrounding roads as a

result of the proposed development is below the threshold requiring a detailed air quality and climate modelling assessment. Therefore, the operational phase is considered long-term, neutral and imperceptible in relation to air quality and climate. In addition, the proposed development has been designed to reduce the impact to climate where possible during operation.

As the National and EU standards for air quality are based on the protection of human health, and concentrations of pollutants in the operational stage of the proposed development are predicted to be significantly below these standards, the impact to human health is predicted to be imperceptible, neutral and long term.

11.3 Conclusion

No significant impacts to either air quality or climate are predicted during the construction or operational phases of the proposed development.

12 Cultural Heritage and Archaeology

12.1 Introduction

The Cultural Heritage chapter assesses the impact of the proposed development on the known and potential cultural heritage resource which includes assets relevant to both the tangible heritage resource (archaeology and architecture heritage); and non-tangible resources (history, folklore, tradition, language, placenames etc.). The recorded and potential cultural heritage resource within a study area encompassing the proposed development site and lands extending for 1km in all directions from its boundary, was assessed in order to compile a comprehensive cultural heritage baseline to inform the assessment.

The assessment was based on a programme of desktop research combined with a field survey which were undertaken to identify any features of archaeological, architectural or cultural heritage significance likely to be impacted by the proposed development.

Documentary research was carried out in order to identify the recorded elements of the cultural heritage resource within the study area. This information assisted in an evaluation of the potential presence of unrecorded cultural heritage sites or features within the proposed development site. The principal sources reviewed for the recorded archaeological resource were the Sites and Monuments Record (SMR) and the Record of Monuments and Places (RMP) maintained by the Department of Housing, Local Government and Heritage. Clare County Council's current Record of Protected Structures (RPS) and structures listed in the National Inventory of Architectural Heritage (NIAH) were reviewed in order to assess the designated architectural heritage resource. The desktop study also included reviews of historic mapping, publications and various online heritage sources.

The results of the field survey are described within the chapter and extracts from the photographic record compiled during the survey are presented in Appendix 11.1 of the EIAR.

The methodology used for the assessment of potential impacts was based on the Environmental Protection Agency (EPA 2022) Guidelines for Information to be Contained in EIAR.

12.2 Description of Existing Environment

There are no recorded archaeological sites located within the proposed development site while there are ten recorded examples within lands extending for 1km from its boundary. One of these (CL033-170----) is located in close proximity to the west boundary of the proposed development site but this comprised a 19th-century lime kiln which was excavated in 2004 in advance of the construction of the N85 road and no longer remains at this location. There are no other recorded archaeological sites located within 215m of the boundary of the proposed development. A review of the current Sites and Monuments Record, as published on the National Monument Service's online Historic Environment Viewer, revealed that it contains no records for the presence of any unlocated archaeological sites within the two townlands that extend into the proposed development site (Keelty and Ballymacaula).

The Database of Irish Excavation Reports does not contain any entries for archaeological investigations within the proposed development site but does contain entries for investigations within surrounding townlands. A number of these were carried out in advance of the construction of the N85 road and identified sub-surface archaeological remains, including the lime kiln (CL033-170----) outside the west end of the proposed development site. A pre-construction programme of archaeological test trenching was carried out at the location of the housing estate directly outside the south end of the proposed development and nothing of archaeological significance was identified in this area.

The RPS and NIAH for County Clare do not list any designated architectural heritage buildings or structures within the proposed development site or its close environs. There are two country houses (Cahercalla House: RPS 045 and the Hermitage: RPS 850) listed in the Record of Protected Structures located within the surrounding 1km study and neither of these are located within 350m of the boundary of the proposed development. A review of historic cartographical sources revealed that there are no demesne lands or curtilage features associated within these two houses located within the proposed development site or its close environs. The proposed development site is not located within an Architectural Conservation Area, and none extend into the surrounding 1km study area. There are no extant structures of any date within the site boundary and the existing built environment within its immediate surrounds is uniformly modern in date.

The cartographic sources examined for the study area comprised the first edition 6-inch Ordnance Survey (OS) map (published 1842) and the 25-inch OS map (published 1897). A review of online sources for the 17th century Down Survey mapping revealed that the maps for the area were destroyed in the early 18th century. The proposed development site is shown as an area of vacant farmland with sub-rectangular fields on the 6-inch and 25-inch editions OS maps.

A review of aerial, satellite and LiDAR sources published by the Ordnance Survey of Ireland, Google, Bing Maps and the Geological Survey of Ireland (LiDAR) was undertaken in order to assess if any traces of potential unrecorded archaeological sites were visible within the proposed development site. The reviewed images all show the area within the proposed development site occupied by vacant, enclosed pasture fields and no evident traces of any potential unrecorded archaeological sites were noted. The detail on the LiDAR imagery shows a series of regularly spaced linear marks extending through a number of the southern fields which are likely the result of agricultural activity, perhaps cultivation furrows or land drains. The reviewed imagery demonstrates the layout of the fields within the site has not been significantly altered since the publication of the historic OS maps and the main changes to the surrounding lands are the presence of modern housing developments to the south and east as well as the golf course to the east and the Ennis bypass to the west.

There are no historic settlement centres, extant structures or associations with historical events located within, on in close proximity to, the proposed development site. The online archive of the National Folklore Collection (www.duchas.ie) contains no records of folklore or traditions associated with the study area. The proposed development site extends into two townlands: Ballymacaula and Keelty. The townland name of Ballymacaula derives from the Irish *Bhaile Mhic Amhlaidh*, which translates as McCauley's homestead while the townland name of Keelty derives from the Irish for wood (coillte). A series of northwest to southeast orientated field boundaries extending through the proposed development site form part of the boundary between these two townlands.

The field survey of the proposed development site revealed it to comprise vacant pasture farmland within an area of undulating terrain that contains areas of natural bedrock outcrops. The back gardens of a row of detached modern houses extends along the southern end of the eastern boundary and the golf course adjoins the northern end of this side of the proposed development. A cut section of the N85 road extends along the west side of the proposed development while a modern housing estate is located to the south. There are no buildings of any date located within the site and no surface traces of any potential unrecorded archaeological sites were noted during the inspection. The townland boundary between Keelty and Ballymaculla extends in a northwest to southeast orientation through the southern half of the site and comprises an overgrown field boundary.

12.3 Predicted Impacts

12.3.1 Do Nothing Scenario

A 'Do Nothing Scenario' will see the continued preservation of recorded and potential cultural heritage features within the study area.

12.3.2 Construction Phase

There are no extant recorded archaeological sites located in the proposed development site or within its close environs. The construction phase of the proposed development will, therefore, have no predicted impacts on the known archaeological resource. While there was no evidence for the presence of unrecorded archaeological features within the proposed development site identified during the desktop study and field inspection, the potential for the survival of unrecorded, sub-surface archaeological features within its boundary cannot be discounted. As the existence, nature and extent of any unrecorded archaeological features or artefacts within the proposed development site are unknown; the significance of potential construction phase impacts cannot be quantified but ground works during the construction phase will have the potential to result in permanent, direct, negative effects on any such remains and this will require mitigation.

There are no designated architectural heritage structures located within the proposed development lands or within 350m of its boundary and it contains no undesignated structures of architectural heritage interest. In addition, the proposed development site is not located within, or in the close environs of, an ACA. The construction phase of the proposed development will, therefore, result in no predicted impacts on the architectural heritage resource.

There are no undesignated vernacular structures, demesne lands, or historic settlements located within the proposed development site and no intangible attributes, such as historical or folklore associations, were noted during the assessment. A section of the townland boundary between Keelty and Ballymacaula extends through the interior of the proposed development site and continues outside its boundary. The construction phase of the proposed development will result in a direct, permanent, slight, negative impact on this element of the undesignated cultural heritage resource.

12.3.3 Operational Phase

There are no extant recorded archaeological sites within the proposed development site, and none are located within 215m of its boundary. The proposed development will, therefore, have no predicted impacts on the setting of any recorded archaeological sites during the operational phase. Following the successful implementation of archaeological mitigation measures presented in Section 11.4, it is predicted that no impacts will arise in relation to the potential archaeological resource within the proposed development site during the operational phase.

There are no designated architectural heritage structures located within the proposed development lands or within 350m of its boundary, it is not located within an ACA and it contains no undesignated structures of architectural heritage interest. The proposed development will, therefore, have no predicted impacts on the architectural heritage resource during the operational phase.

The only undesignated cultural heritage feature within the proposed development site comprises field boundaries forming a section of the townland boundary between Keelty and Ballymacaula. Following the successful implementation of archaeological mitigation measures presented in Section 11.4, it is predicted that no impacts will arise in relation to the undesignated cultural heritage resource during the operational phase.

12.3.4 Cumulative Impacts

No cumulative impacts on the setting of the cultural heritage assets within the wider landscape are predicted.

12.4 Mitigation Measures

12.4.1 Construction Phase Mitigation

Given the scale and extent of the proposed development within a green field location, a programme of pre-development licensed archaeological test trenching will be undertaken within the proposed development site prior to the commencement of the construction phase. In the event that any sub-surface archaeological deposits, features or artefacts are identified during these site investigations, their locations will be recorded and securely cordoned off while the National Monuments Service are notified of the discovery and consulted to determine further mitigation measures, which may entail preservation *in situ* by avoidance or preservation by record through a systematic archaeological excavation.

There are no designated or undesignated assets of architectural or cultural heritage significance located within the proposed development site or its close environs and no mitigation measures for these elements of the cultural heritage resource are required.

12.4.2 Operational Phase Mitigation

All required cultural heritage mitigation measures will be enacted prior to and during the construction phase and, therefore, no mitigation measures during the operational phase are envisioned.

12.4.3 Monitoring

The obligatory application and reporting processes required as part of license applications to the National Monuments Service to carry out archaeological site investigations will allow for monitoring of the successful implementation of the mitigation measures.

12.5 Residual Impacts

The proposed development site and its close environs do not contain any extant recorded archaeological sites or designated architectural heritage structures and no residual impacts on these elements of the cultural heritage resource are predicted. The mitigation measures presented in Section 11.4 will provide for either the preservation in situ of any unknown archaeological features within the proposed development site or the proper and adequate recording of such features by full archaeological excavation. Preservation in situ shall allow for a negligible magnitude of impact resulting in a potential not significant/imperceptible significance of effect in the context of residual impact on the unrecorded archaeological resource. Preservation by record shall allow for a high magnitude of impact, albeit ameliorated by the creation of a full and detailed archaeological record, the results of which shall be publicly disseminated. This shall result in a potential slight/moderate range of significance of effect in the context of residual impacts on the unrecorded archaeological resource.

13 Population and Human Health

13.1 Introduction

The assessment of potential impacts on Population and Human Health is contained within Chapter 13 of Volume II. It also details the proposed mitigation measures where necessary. The 2014 EIA Directive (2014/52/EU) updated the list of topics to be addressed in an EIAR and replaced 'Human Beings' with 'Population and Human Health'. This chapter also meets the requirement for assessment of 'Human Beings', as set out in Schedule 6 of the Planning and Development Regulations 2000 (as amended).

13.2 Existing Environment

The proposed site is located in the townland of Ballymacaula and Drumbiggle within the town of Ennis, Co. Clare. The subject site is situated to the West of Ennis town centre and approximately 25 km north of Shannon Airport. The site is located to the west of Ennis town centre and occupies a greenfield site beside the N85 National Road. To the east of the site is local amenity Ennis Golf Course and a recently completed development on the south western boundary.

The site is located in close proximity to facilities in Ennis town hosting a range of commercial, recreational and community facilities. The site is located along the N85 Ennis ring road, the M18 Limerick to Galway route and the R474 Ennis to Miltown Malbay route. The Claureen River is located to the north of the site and flows adjacent to the northern boundary of the site.

13.2.1 Population

13.3 Impact Assessment

In identifying potential impacts and receptors, consideration was given to the proposed mixed use residential scheme and identified receiving environment. The principal potential receptors that will be affected by the development proposals include;

- Residential areas in proximity
- Community facilities and services including schools and creches
- Local amenity
- Economic Activity

13.3.1 Do Nothing Scenario

If the development were not to proceed there would be no immediate impact on the existing population, or economic activity for residents living in the area. However, it would also prevent the development of a greenfield site which will be a catalyst for development within proximity to Ennis town. This would have a very significant negative long-term impact on both Ennis town center and the projected population targets of both the National Planning Framework and Clare County Development Plan.
This development will facilitate an appropriate, sustainable settlement pattern which will accommodate residential, community, leisure and recreational facilities to satisfactorily match the level of population growth and household generation envisaged by the NPF 2040.

The land would likely remain vacant, with occasional agricultural use. The impacts on the land use are therefore envisaged to be a neutral 'do nothing scenario'.

13.3.2 Construction Phase Impacts

Generally, the potential impacts arising during the construction phase relate to quality of life including visual impact/noise, amenity, air quality and transport. Where relevant, these impacts have been considered in the relevant chapters of the EIAR and will minimised or mitigated where appropriate.

No significant negative residual impacts have been identified once mitigation measures are put in practice. No significant impacts on economic activity or local amenity are anticipated as a result of the proposed development. The existing road network has been demonstrated to have sufficient capacity to accommodate construction traffic associated with the proposed development.

An Outline Construction Management Plan and Outline Demolition and Construction Waste Management Plan have been prepared which set out the general measures which will be taken to ensure the site is secured and to ensure the health and safety of workers, on-site staff and those likely to be affected by the development including pedestrians, road users, neighbours and visitors to the site. The measures include;

- Health and safety policies on the site, including a main contractor's construction stage health and safety plan which will be prepared by the project supervisor for the construction stage;
- Liaison with local residents and businesses to maintain good relationships and minimise disruption;
- Site security and suitable hoarding to separate the site from surrounding roads and buildings;
- A management plan for siting and using large plant (cranes);
- Site compound and safe storage of materials, excavated materials, fuels, paints, cleaning agents etc.

Following implementation of these measures adverse effects on human health during the construction phase of the project are not likely, and any effects will be neutral and short term.

13.4 Operational Phase

The proposed development will consist of X no. units, a creche and all ancirllary works. Due to the nature of the proposed development, there will be a few hazards associated with the operational phase of the development and therefore no potential significant impact in terms of health and safety. The potential impacts on cycling and pedestrians will be positive. The proposed layout increases the current public amenity and creates a new layer of permeability.

The provision of these amenity facilities within the proposed development will be of benefit to future residents and existing residents in the local environs. The operational phase of the proposed development, in terms of recreation and amenity facilities will, therefore, have a permanent significant **positive impact** on Human Health.

13.5 Cumulative Impacts

There are several permitted and proposed developments in the vicinity of the EIAR study area which in combination with the proposed development may have cumulative impacts. The cumulative impacts related to the following projects have been considered where relevant, in the context of the human environment:

Table 1.3: Cumulative Impacts

Proposal/Application	Planning Reference	Comment
Part 8 Housing Scheme 11 no. residential housing units at Uplands, Fermoy	Cork County Council Part 8 Application	Information at:

Proposal/Application	Planning Reference	Comment
		https://www.corkcoco.ie/en/Planning/Part-8-Development-Consultation/active-part-8-development-consultation
Retention for Internal woks for new technology room, sanitary rooms, 3 no. new classrooms, 1 no. new computer room at St. Colman's College, Monumental Hill, Fermoy	Planning Ref: 21/4049	Permitted on 15th July 2021
A) the change of use (through intensification of use) of part of an existing light industrial building currently used for the assembly and commissioning of stainless-steel vessels to provide for an electropolishing area within the building footprint; b) internal works to facilitate the change of use, including the provision of an underground containment pit and other alterations to the factory floor; and c) ancillary external site works to connect to the existing on-site sewer network.	Planning Ref: 20/6246	Permitted by 07/12/2020
The demolition of 2 No. dwelling houses and associated sheds/outhouses and the construction of 28 No. residential units and all ancillary site development works, including access, car/bike parking, bin storage and amenity areas	Planning Reference: 21/7241	Under review by Cork County Council
To demolish existing pump canopy, shop and stores, for construction of valeting buildings, car wash, boundary fencing and 2 no. signs together with associated works.	Planning Reference: 19/6221	Permitted by 11/6/2020

13.6 Mitigation

No likely negative impacts have been identified for population, or land use, accordingly no mitigation measures are required.

The proposed development has been designed to the highest building standards in accordance with current best practice guidance, and incorporates suistinable development measures such as exhaust, heat pumps, triple glazed windows and sustainable urban drainage features.

In relation to site enabling works, construction phases and health and safety risks, these will be managed in accordance with the Safety, Health, and Welfare at Work (Construction) Regulations, 2013. Health and Safety Consideration and measures are set out in the OCMP.

13.7 Residual Impacts

The proposed mitigation measures will avoid, prevent, or reduce impacts on the human environment during the construction and operational phases of the proposed development. Residual impacts are those which remain following the implementation of the proposed mitigation measures, however no significant adverse residual impacts have been identified.

The land will have an urban character, rather than greenfield site within Ennis town centre. However, this change is in context with the specific zoning of the site for residential / mixed use/ public green space development and the impact is considered acceptable when balanced with the other positive impacts on amenity, such as the provision of active public amenity spaces, much needed housing in the Ennis town context, employment and local services.

14 Significant Interactions of Impacts

The construction, operational and cumulative impacts of the proposed development have been assessed within each chapter of the EIAR. This chapter describes the significant interactions of impacts identified in the previous chapters.

All potential inter-relationships impact between the various areas covered in the EIAR are listed and the key interactions and interrelationships are summarised. Mitigation measures outlined where required. With mitigation measures in place, no significant residual negative impacts are predicted.

A schedule of proposed mitigation measures and monitoring measures is presented in Chapter 15.

15 Summary of Mitigation and Monitoring

Chapter 15 of the Environmental Impact Assessment provides a summary of the construction and operational phase mitigation measures proposed for each discipline throughout the EIAR document. These are reflective of those measures identified in the Outline Construction Management Plan (OCMP) which sets out construction phase mitigation measures for the proposed development. It will be a requirement that all personnel will understand and implement the final agreed CEMP. A An Outline Construction and Demolition Waste Management Plan (CWMP) has also been prepared.

Some disciplines have proposed monitoring following their assessment of impacts and implementation of proposed mitigation measures. Monitoring will take place after consent is granted in order to demonstrate that the project in practice conforms to the predictions made during the EIA process. Monitoring provides assurance that proposed systems are operating as intended. This allows adjustments of operations to be made to ensure continued compliance with consent conditions such as emission limit values, conditions of operation, performance criteria/ indicators and detection of unexpected mitigation failures.

16 Risk of Major Accidents and Disasters

The potential of major risks and disasters as a result of the proposed development has been assessed by other disciplines within this EIAR. No risk of major accidents and disasters has been identified. The project comprises development of a residential estate, in a greenfield area at the periphery of a suburban area. There are no sites in proximity which are subject to The Chemicals Act (Control of Major Accident Hazards Involving Dangerous Substances) Regulations 2015.