

Fraser Homes Ltd

and Landowners at NS19 and NS43, Newtownards

Ballyreagh Village Master Plan Proposals

Environmental Impact Statement

Volume 1 Main Text



Pragma Planning & Development Consultants Ltd.
Scottish Provident Building
7 Donegall Square West
Belfast, BT1 6JH

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Chapter 1: Introduction

1.1 General Description of Site Location and Development

Site Location

This Environmental Impact Statement (EIS) has been co-ordinated by Pragma Planning & Development Consultants Limited on behalf of land owners acting in consortia in the lands at Ballyreagh, Newtownards identified in the Ards and Down Area Plan as NS 19 and NS 43. The site location is shown on Figure A (Appendix 2), the land is located on the east side of Newtownards, between the Bowtown Road and Movilla Road.

Proposal – General Description

In general terms it is proposed to develop the land as shown on Figure C (Appendix 2). The development proposal is composed of four main elements, firstly a residential development scheme within the area of zoned housing land and secondly a major piece of parkland within the area zoned for open space. Thirdly, a major road proposal linking the Bowtown Road with the Movilla Road and finally a major new trunk sewer and pumping main is included connecting the housing development areas of NS19, NS20 and NS21. Although the application is for outline permission it is envisioned that approximately 675 dwellings will be in due course constructed. The development will be phased with commencement from the Bowtown Road, followed by construction from the Movilla Road; the phasing is set out to deliver the completed link road at an early stage.

The development involves demolition of existing farm houses and agricultural buildings where these are associated with the landowners and are required for the development of the scheme. In addition there are a number of individual dwellings within the zoned land that do not form part of the scheme, these have been considered within the proposals, the owners have been consulted and their views have in part shaped the proposals as they relate to their dwellings.

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1.2 Scope and Purpose of Environmental Impact Statement

The Environmental Impact Statement is the report of the Environmental Impact Assessment process as provided in the Planning (Environmental Impact Assessment) Regulations (Northern Ireland) 2017 (*the "EIA Regulations"*). Environmental Impact Assessment (EIA) is the process of identification, description and assessment in an appropriate manner, in the light of each individual case, the direct and indirect significant effects of the proposed development on the following factors: -

- Population and human health;
- Biodiversity, with particular attention to species and habitats protected under [Directive 92/43/EEC\(16\)](#) and [Directive 2009/147/EC\(17\)](#);
- Land, soil, water, air and climate;
- Material assets, cultural heritage and the landscape; and
- The interaction between the factors referred to in sub-paragraphs (a) to (d)

The Environmental Impact Statement addresses these factors and responds to the EIA Regulations.

1.3 Consultation

In accordance with Regulation 12 of the EIA Regulations, Ards and North Down Borough Council (AND BC) was approached for a screening and scoping determination in February 2019. A request for pre-application discussion (PAD) had been submitted earlier in October 2018.

On receipt of both the screening and scoping request and the PAD, AND BC consulted the bodies set out in Table 1, the consultation responses are contained in Appendix 1.1 and have informed the preparation of the Environmental Impact Statement.

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Table 1.1 Consultees and Response Dates

Consultee	Response date
Shared Environmental Service	20 December 2018, 10 April 2019 and 17 April 2020
Department for Infrastructure: Roads	19 March 2019 and 4 June 2020
Department for Agriculture Environment and Rural Affairs	19 December 2018 and 1 April 2019
AND BC Environmental Health Protection and Development	14 March 2019 and 11 May 2020
Department for Communities Historic Environment Division	23 November 2018, 5 April 2019 and 19 May 2020
Department for Infrastructure: Rivers	5 December 2018, 5 April 2019 and 11 May 2020
Ulster Flying Club	20 November 2018
Northern Ireland Water	27 April 2020

In parallel a comprehensive process of community engagement was commenced; this is set out in the Pre-Application Community Consultation report that is submitted separately, but in brief involved:

- Direct consultation with the householders within the zoned area;
- Consultation with community groups and stakeholders located within the adjoining area;
- A fully staffed public exhibition held on 22 November 2018; and
- Engagement with political representatives

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Accordingly, the proposals and the EIS draw directly upon the consultee responses and the outcomes of the public consultation.

1.4 Presentation

The Environmental Impact Statement is structured as follows: -

Chapter Number	Chapter Title
1.	Introduction
2.	Description of Development
3.	Alternatives
4.	Environmental Baseline
5	Assessment of Significance
6.	Biodiversity
7	Land Soils and Water
8.	Population
9.	Air Quality
10.	Transportation
11.	Drainage
12.	Noise
13.	Landscape and Visual
14.	Cultural Heritage
15.	Climate Change
16.	Cumulative and In-Combination
17	Mitigation

Each of the technical chapters is laid out in a standard format, as follows: -

- It sets out the environmental baseline;

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- It predicts impacts without mitigation measures;
- It identifies any cumulative effects
- It sets out the mitigation measures that are available;
- It predicts residual impacts following mitigation; and
- It identifies any shortage of information

Appendices are contained with each relevant chapter; there is no separate booklet of appendices.

In order to simplify the presentation a set of common drawings were prepared and agreed; these are:

- Figure A Site Location Plan
- Figure B Concept Master Plan Layout
- Figure C Link Road Alignment
- Figure D Bowtown Road/Link Road Junction Proposals
- Figure E Movilla Road/Link Road Junction Proposals

These drawings are contained in Appendix 2.

A separate Non-Technical Summary has been produced.

Cumulative, Interrelated and In-Combination Impacts

Cumulative effects are addressed in each individual chapter, a standard set of cumulative projects was developed in consultation with the Council, this is detailed in Chapter 5.

1.5 Environmental Impact Statement Team

The developer has instructed competent experts to prepare the Environmental Impact Statement.

These experts, the companies they represent, and their qualifications are set out below.

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Table 1.3 Expert Qualifications

EIS Chapter	Consultant Company	Report Author and Contributors	Qualifications
1. Background	Pragma Planning and Development Consultants Limited	David Worthington	Pragma Planning and Development Consultants is a practice Regulated by the Royal Institution of Chartered Surveyors.
2. Description of Development			
3. Alternatives			BSc (Hons) Environmental Planning Dip Town Planning; Chartered Member of the Royal Town Planning Institute with 25 years' experience.
4. Environmental Baseline			
5. Assessment of Significance			
8. Population			20 years' experience in the co-ordination and preparation of environmental assessments.
16. Interrelationships, Cumulative and In-Combination Impacts			
17. Mitigation			

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EIS Chapter	Consultant Company	Report Author and Contributors	Qualifications
7. Biodiversity 9. Air 10. Transportation 11. Drainage 12. Noise	RPS PLC	Conor O'Hara	Technical Director within the RPS Highways and Transportation section with over 20no. years' experience within Transport Planning. BSc (hons) in Transportation. Chartered Member of the Institute of Logistics and Transportation (CMILT) and a Member of the Chartered Institution of Highways and Transportation (MCIHT).
7. Land Soils and Water	O'Sullivan MacFarlane Limited	Frank MacFarlane Katherine Livingstone	BSc (Hons) Environmental Studies and MSc Environmental Management 10 years' experience in land contamination and risk assessment BSc (Hons) Earth Science and MSc Environmental Engineering Hydrogeologist with 5 years experience

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EIS Chapter	Consultant Company	Report Author and Contributors	Qualifications
13. Cultural Heritage	Gahan and Long	Audrey Gahan	BA(Mod) Trinity College, Dublin. Fellow of Royal Society of Antiquities, London (from 2006) Over 30 years experience of field archaeology. 25 years experience in preparation of Cultural Heritage Impact Assessment reports.
14. Landscape and Visual	Park Hood Partnership Limited	Andrew Bunbury	Park Hood is a Chartered Member of the Landscape Institute Fully qualified Landscape Architect and Chartered Member of the Landscape Institute (CMLI) UK with over 20 years' consultancy experience in the landscape profession across the UK and Ireland

Chapter 2: Description of the Proposed Development

2.1 Introduction

This chapter has been prepared by Pragma Planning and Development Consultants Limited, Chartered Town Planners and Chartered Surveyors with over 20 years' experience in conducting Environmental Impact Assessment.

The chapter is divided into two sections. The first provides information about the location of the development proposal. The second provides information about the development itself including demolition works, its land use requirements, main characteristics and estimated expected residues and emissions in construction and operational phases. The second section also addresses energy demand in the operational phase and the quantities of materials and natural resources used in construction.

2.2 Incorporated Mitigation

The chapter has been compiled following the preparation of outline concept designs and the completion of bio-diversity and landscape and visual studies. The proposals themselves have been informed by this reporting and therefore a number of mitigation measures have been incorporated into the proposals.

These features include: -

- Retention of watercourses within the site;
- Retention of existing tree groups;
- Buffer zones around tree groups and watercourses;
- Attenuation of drainage to greenfield run off levels;
- Boundary buffer zones to protect wildlife using the existing boundary hedgerows; and
- Landscaping to assist with visual integration and screening

2.3 The Nature and Purpose of the Development

The proposal is to create a new residential neighbourhood based on the principles of an interconnected street network, urban blocks, open space and mixed uses where on a site of 43.4 hectares located on the eastern side of Newtownards. Access will be via a new distributor road linking Bowtown Road to Movilla Road. Direct driveway access will not be permitted onto this type of road and consequently additional hard surfacing will be required to enable dwellings to face onto it.

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A range of interconnected streets and types of accommodation are proposed within the residential areas.

10.3 hectares of open space are included in the master plan, which includes the NS43 open space zoning as well as open space that provides locally accessible play, manages and maintains bio-diversity features, provides foot and cycle access and protect boundaries. Within NS43 open space will contain a mix of types of areas including provision for children's play and a cycle/pedestrian route that extends north and south to provide a traffic free link between link Bowtown Road and Movilla Road.

Planning Constraints Contained in the Ards and Down Area Plan

ADAP is the statutory plan and provides the statutory framework for the development proposals. In respect to NS 19 and NS 43 ADAP contains a number of key development considerations. These KDCs provide a framework for the development of the site. The KDCs applying to NS 19 are as follows: -

- Housing development to be a minimum gross site density of 20 dwellings and a maximum gross site density of 25 dwellings per hectare;
- Development shall be phased to begin at the southern end of the site;
- Phasing of housing development in relation to infrastructural works;
- The Ballyreagh Road will be upgraded to distributor road standards or realigned and will provide a link from the Bowtown Road (near the existing junction) to the Movilla Road. The road will terminate at a roundabout on the Movilla Road which will also incorporate the Movilla Road/Donaghadee Road link;
- Provision of pedestrian and cycleway links to Movilla Road and Bowtown Road;
- The boundaries of the site adjacent to the countryside and the LLPA to be landscaped with an 8-10 metre deep belt of trees of native species to provide screening for the development and help integrate it into the surrounding countryside;
- A full survey of existing vegetation within the site and retention of trees and hedgerows where possible;
- Existing mature vegetation and trees along the eastern perimeter of the zoning shall be retained and enhanced with a planting buffer 8-10 metres deep to consist of indigenous trees and hedgerow species;
- Positive management arrangements to protect and maintain open space, and landscaping;
- The seven mature trees on the western edge of the Ballyreagh Road and opposite property No. 55 Ballyreagh Road and the cluster of mature trees between property Nos. 53 and 54 Ballyreagh Road to be retained and the positioning of buildings in

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relation to trees shall be such that development will not threaten the survival of trees;
and

- The layout shall be designed to provide for maximum permeability by bus services.

Development of the site will only be permitted in accordance with an agreed comprehensive scheme that will incorporate the neighbouring amenity open space (Proposal NS 43), to provide the necessary public infrastructure, including those roads required to serve these lands. The alignment and landscaping of the road shall be designed to achieve the maximum possible degree of integration in the landscape

ADAP requires the development and delivery of the road through the zoning linking Bowtown Road to Movilla Road. This road link is of primary importance in the plan, the land is zoned contingent upon its delivery and as such the plan sets down additional policy requirements.

Site Constraints

Ecological

Bio-diversity assessment has been on going at the site since early summer 2018 and a suite of assessments has been completed. The assessment has identified a number of site features, these include:

- A number of protected wildlife habitats along the eastern boundary;
- A network of watercourses and related bankside habitat
- A bat roost; and
- A number of lines of trees/hedgerows identified as being of value.

Topographical

A detailed topographical survey of the site was commissioned, it is shown at Figure [B]. Figure [B] illustrates that the site is composed of a series of drumlins, although it has a generally rising trend from south to north and east to west, the topographical progression is composed of a series of highs and lows.

Conceptual Framework

The conceptual framework treats the principal elements of the key design considerations and the site constraints as fixed assets of the site; these include:

- The Bowtown Road – Movilla Road link;
- The boundary of the NS 43 open space zoning;

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- Established trees identified in the KDCs;
- Identified wildlife habitats;
- Priority hedgerows; and
- Watercourses and bankside habitat

Lines of sight can be identified along the road line and from the public entrance point into the public open space from the existing housing to the west. These are all important elements in how the public will read and react to the development.

Key Principles of Sustainable Urbanism

Sustainable urbanism provides a design process that clearly and transparently utilizes the universal urban forms of street and grid in a systematic manner allied to the analysis to create places that are both universal and unique, due to their response to the topographical, contextual and strategic uniqueness of each individual site.

This approach is based on the delivery of four key principles:

- An Urban Block Form – a street-led development form supporting walkable neighbourhoods;
- A Sustainable Movement Pattern – derived from the urban block formation that prioritises walking, cycling and public transport ahead of the car;
- Open Space – in a connected and accessible hierarchy linked to and mutually reinforcing with the movement pattern; and
- Mixed uses – accessible at the core of the development encouraging a modal shift towards public transport, walking and cycling

The master plan arising from the application of these principles is a design for a sustainable community in which its characteristics are derived from a universal set of parameters applied to local conditions on site.

Public Open Space

In accordance with the principles of sustainable urbanism the open space strategy is based on the interconnectivity of key spaces identified in the ADAP and site assets identified through the analysis. These spaces are: -

- The Town Park – located centrally at the hub of the development and comprising the NS 43 zoning;
- Tree/hedgerow and watercourse corridors – existing site assets integrated into the development; and
- Play – play spaces of different types and configurations integrated into the layout

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A play strategy based on creating different levels of play space spread throughout the development.

The urban block layout is flexible and provides overlooking and passive supervision of all the open space types.

The greenway proposal provides a direct, traffic free pedestrian and cycle way linkage from Bowtown Road to Movilla Road, through the Town Park and linking with the mixed use centre.

Mixed Use Centre

An area of mixed and accessible uses at the core of the development encouraging the modal shift towards public transport, walking and cycling while maximizing diversity and vitality in a shared civic experience. The central location allows provision of a bus stop that will serve most of the area based on a 400 metre radius walk in area.

The centre is proposed to contain a mix of uses that meet local needs and facilities including public transport as shown in Table 2.1 below. The area also offers the opportunity to provide housing for active older people as well as elderly care.

Table 2.1 Mixed Use Centre Schedule of Commercial Accommodation

Block no	Unit no	Use Type	Floorspace (m²)
Block 1	Unit 1	Convenience Store - Class A1	230
Block 2	Unit 2	Coffee Shop - sui generis	230
Block 3	Unit 3	Barber/Hairdresser - Class A1	115
	Unit 4	Off Licence - Class A1	115
Block 4	Unit 5	Creche - Class D1	230
Total			920

Standard Drawings

Seven drawings contained in Appendix 2 constitute the main drawings that the ER and the planning application relate to. These are numbered Figure A to Figure I as set out below and are addressed in the subsequent sections of this part of Chapter 2.

- Figure A – Site Location Plan
- Figure B – Topographical Survey
- Figure C – Site Constraints
- Figure D – Concept Master Plan

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- Figure E – Phasing Plan
- Figure F – Link Road Design
- Figure G – Bowtown Road Roundabout Access
- Figure H – Movilla Road Roundabout Access
- Figure I.1 – Storm Drainage Master Plan
- Figure I.2 – Foul Drainage Master Plan
- Figure J – Landscape Master Plan

2.4 Location of the Proposed Development (Figures A, B and C)

The development lands are located immediately adjoining the eastern edge of Newtownards, they are bounded by Bowtown Road in the south, Movilla Road in the north, the existing urban area at the Abbots Drive estate to the west and open countryside to the east. Immediately to the north of the site is the housing zoning NS20, which is under development as 'Rivenwood'. To the south west on the opposite side of Bowtown Road is the housing development of Greystown Park and Teal Rocks that runs from Bowtown Road to the Portaferry Road on the shore of Strangford Lough, while to the south and south-east lies open countryside forming part of the Area of Outstanding Natural Beauty. The site is located approximately 650 metres north of the shore of Strangford Lough.

Figure A Location Plan shows this general arrangement.

The development lands are irregularly shaped, roughly like an inverted Y; a form determined by the presence of three tall drumlins on the southern boundary. The zoning shape was designed to utilise these drumlins to protect views of the development from the adjoining AONB and shore of Strangford Lough approximately 650 metres to the south.

The Ballyreagh Road, a very minor country road winds its way through the lands from Bowtown Road to Movilla Road.

Figure B illustrates the site topography. Topographically land levels rise from Bowtown Road where the level is shown on the topographical map as being around 35 metres to Movilla Road where it is around 51 metres. The southern arms of the inverted Y are defined by the Ballyreagh Road, which forms the north-western boundary of the western arm and the northern boundary of the eastern arm. This area is relatively flat, here the land is low-lying at the base of the group of three tall drumlins; on the south-western arm the level is around 38 metres, while the south-eastern arm south of the Ballyreagh Road varies generally between 33 and 36 metres with a general fall to the south and east towards Strangford Lough.

North and west of the junction between the arms of the Y the land is formed from the flanks of two drumlins in the west of the lands that rise to around 58 metres at the highest point in the

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north west of the land. This higher area demarcated by the 48-metre contour occupies the western boundary of much of the land and is zoned for open space use. Its purpose also appears to be one of protection, ensuring that the development does not intrude into views from the AONB or shores of Strangford Lough.

East of the open space zoning the drumlin flanks continue to fall to the east with the gradient decreasing to a level of between 36 and 39 metres on the eastern boundary.

Levels in the north east corner of the site relate to a drumlin that rises to a peak north of the site boundary and on the opposite side of the Movilla Road.

Figure C illustrates a series of physical and environmental constraints on the development of the land.

The land comprises a series of 22 agricultural fields, bounded by hedgerows and includes three farm groups and seven dwellings independent of the farm holdings. The farm groups incorporate traditional masonry-built dwellings and agricultural buildings constructed in a range of materials including metal and masonry incorporating tanks and other infrastructure associated with active farming. These groups and their related lands are part of the development scheme, while the individual dwellings are [with one exception] not included in the proposals, which make allowances for their owners in the layout and access proposals.

Three linear groupings of mature trees on the Ballyreagh Road stand out as features in the area, while a watercourse rises close to the north-eastern boundary and flows along the boundary and through the site towards Strangford Lough to the south-east. A second watercourse enters the land from the Bowtown Estate on the western arm of the inverted Y, it runs south to Bowtown Road and although it is culverted parallel to Ballyreagh Road it is open south of Bowtown Road from where it runs directly to Strangford Lough.

2.5 The Development Proposal (Figures D and E)

Introduction

While Section 2.3 provides information on the general nature of the development, section 2.5 provides information on the physical characteristics of the whole development, which is illustrated on the Concept Master Plan in Figure D. These physical characteristics involve:

- Any demolition;
- Land use in the construction and operational phases;
- Use of natural resources in construction through civil engineering, cut and fill related works to enable the link road proposal and the housing land to be developed;
- Use of materials in construction;

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- Estimated residues and emissions in the construction and operational phases; and
- Energy demand in the operational phase

Available Information

It should be noted that at this stage full information is not available in relation to a number of the aspects that would otherwise be included in this chapter; specifically, detailed information is not available in respect to: -

- Civil engineering works associated with the development, as the proposal is very much at outline stage no detailed calculations have been carried out; however, it is possible to identify from the topographical information those areas of the site that will be subject to cut as a result of levels and those areas that are able to act to receive fill in a balanced engineering operation;
- Materials, as the detailed design of housing, roads, paths, other hard standings and open space has not been completed it is not possible to present a set of detailed figures for the materials to be used; however, Fraser Homes has five decades of experience in developing residential neighbourhoods and accordingly, a general set of calculations have been used based upon experience from other development sites;
- Land use, as for materials an estimated set of land use areas have been derived based on experience from other sites;
- Types and quantities of residues and emissions have been derived from published sources; and
- Energy demand in the operational phase has also been derived from published sources

Demolition

The proposals involve the demolition of two farm groups and an individual dwelling. All the properties belong to land owners within the zoned lands. In total five dwellings and 16 agricultural buildings will be demolished. A third farm group, including farm dwellings, greenhouses and an agricultural shed is located within the public open space zoning NS43, this is scheduled to be retained (it is currently occupied) and incorporated into the park as part of allotment gardens, for storage of park equipment and for park management.

The dwellings scheduled for demolition are of traditional construction in a rural area, comprising of rendered brick or block work walls and slated or tiled roofs. None are listed although two of them appear on the OS first edition maps contained in Chapter 15 Archaeology.

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The farm buildings are mostly of modern block and corrugated metal construction, although there are some older buildings that appear on the OS first and third edition maps. Again, none are listed.

Prior to demolition the buildings will be assessed for the presence of asbestos and other contaminated materials, which will be removed safely and disposed of off-site or in the case of ground contamination remediated on site. Buildings will also be checked for the presence of wildlife. Following demolition, safe waste arising will be stockpiled on site for use in the construction phase.

Land Use in the Construction and Operational Phases

The overall development is made up of a number of elements, these are: -

- Demolition of the agricultural buildings and farm dwellings;
- Distributor road linking Bowtown Road to Movilla Road;
- Residential development;
- Mixed use development and public transport infrastructure
- Community open space development and associated pathways;
- Residential access roads and associated infrastructure works;
- Private amenity space associated with residential development;
- Car parking, in the forms of in curtilage spaces and communal spaces;
- Cycle paths/paths/footways;
- Protected site assets free from development;
- Hedgerow, tree and meadow planting and other landscaping works;
- The earthworks associated with all of the above; and
- Services that will be accommodated in the roadbed including drainage infrastructure

The development has been designed in an integrated manner and accordingly the provision of each of these elements has been considered together.

Open Space:

At 10.1 hectares the public open space shown on the master plan represents 23% of the total area of the land.

The Residential Development:

The residential development proposes: -

- A total development of 684 dwelling units;

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- These will be in a mix of apartments, town houses, semi-detached and detached houses,

The total numbers of dwellings proposed has been derived from assessment. The density range provided in the ADAP zoning key design considerations is between 20 and 25 dwellings per hectare which provides a range of between 675 and 845 dwellings based on an overall zoning area for NS19 of 33.75 hectares. Although the bulk of the open space to be provided will be located in NS43 there will still be scope for open spaces within the housing development, this reduces the available area and overall density.

Accordingly, a density of 20 dwellings per hectare was chosen for the proposed development as it meets all the above criteria.

The Concept Master Plan in Figure D shows a total of 684 units in a mix of 105 apartments and 579 dwellings, which in turn breakdown into 39 terraced town houses, 421 semi-detached houses and 119 detached houses.

The dwellings themselves are likely to represent around 20% of the area zoned for residential use and around 16% of the total land area.

Residential Access Roads/Car Parking:

Servicing the development will involve construction of road vehicle carriageways in a range of types, footways, cycleways and parking areas. As the development is at outline stage the exact extent of these are unknown, however, drawn from other developments residential access roads and car parking is likely to represent approximately 40% of the residential land zoning and 32% of the total land area.

Residential Private Amenity Space:

Residential private amenity space is likely to represent around 35% of the residential land zoning and 29% of the total land area. This includes driveways with porous surfaces.

Paths/Footways/Cycle Paths

Paths/Footways/Cycle Paths are likely to represent around 5% of the residential land zoning and 4% of the total land area.

Drainage Infrastructure

The development incorporates new storm and foul drainage infrastructure.

Storm water will be attenuated on site with flows to water courses restricted to greenfield run-off rates. Calculations for the total attenuation required is set out in the Services and Drainage

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section below, however, briefly owing to site topography the drainage network will be designed in a series of self-contained cells with integrated water storage in the form of either tanks or oversized pipes that will accommodate all the storm water within the development, Throttles on the flow will restrict the outflow to the greenfield run-off rate. The proposed storm network is shown on Figure I.1.

Foul sewage is not self-contained in the same manner. Foul sewage infrastructure in the area requires upgrading and the provision of a new 300mm diameter mains sewer to connect NS20 through NS19 to the pumping station on Portaferry Road. Foul sewage is not self-contained in the same manner as storm water however, owing to site topography, some of the foul sewage network will be designed as a series of self-contained cells with connection back to the new NS19 mains sewer via small pumping stations. These small pumping stations will require an Emergency Overflow (EO) consent under the Water (Northern Ireland) Order. The new mains sewer will be a 300mm diameter mains sewer to connect NS20 through NS19 and ultimately discharge to the existing NI Water pumping station on Portaferry Road. Accordingly, the foul sewage infrastructure in NS19 must be designed to accommodate NS20 as well as NS19. A pumping station is required, which will be located on the southern part of NS19 to pump the sewage beyond the site before gravity can take over.

NI Water have confirmed that the existing local sewer network does not have sufficient capacity to serve this development and therefore owing to existing topography, built environment and land constraints, a gravity connection from the lower end (south west) of NS19 at the Bowtown Road to the Portaferry Road pumping station is not viable and therefore new pumping station will be required at the Bowtown Road end of the Scheme. The new pumping station will be designed to NI Water requirements and adoptable standards and sized to accommodate foul sewerage flows from NS19 and NS20 lands. The new pumping station will pump the foul sewerage via rising main and gravity sewer to the existing network at the Portaferry Road pumping station which has recently been upgraded. There are 3 No. routes being considered for the rising main and gravity sewer with a preferred route to be agreed with NI Water. This new pumping station also needs an emergency overflow however NI Water have suggested that the existing sewer network could be used as the outlet for emergency overflow.

The proposed sewer network is shown on Figure I.2, Table 2.2 provides the sewer lengths and diameters that are proposed.

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Table 2.2 Foul Sewerage Infrastructure

Description	Foul Sewer Element	Approximate Length (m)
<i>Overall Site</i>		
<i>Trunk Sewer from NS20 through NS19</i>	300mm Diameter Trunk Sewer	1106
<i>Internal Development Foul Sewers</i>	150mm Diameter Foul Sewers	7650
<i>Pumping Rising Main from Pumping Stations B,C and D.</i>	90mm Outer Diameter Rising Main	748
<i>Pumping Station A to Portaferry Road WwPS – Option 1</i>		
<i>Pumping main on Bowtown Road to Old Shore Road</i>	180mm Outer Diameter Rising Main	440
<i>Gravity Sewer through Old Shore Road to Portaferry Road WwPS</i>	250mm Diameter Trunk Sewer	1300
<i>Pumping Station A to Portaferry Road WwPS – Option 2</i>		
<i>Pumping main on Bowtown Road</i>	180mm Outer Diameter Rising Main	605
<i>Gravity Sewer through lands for future link Road between Bowtown Road and Portaferry Road to Portaferry Road WwPS</i>	250mm Diameter Trunk Sewer	565
<i>Pumping Station A to Portaferry Road WwPS – Option 3</i>		
<i>Pumping main up Bowtown Road</i>	180mm Outer Diameter Rising Main	320
<i>Gravity Sewer through Gregstown Park / Teal Rocks to Portaferry Road WwPS</i>	250mm Diameter Trunk Sewer	565

Phasing of the Development

The proposal involves delivery of the whole of the link road between Bowtown Road and Movilla Road, with commencement from the south. Construction from the north will commence once the road has been started in the southern part of the zoning and in addition

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construction of dwellings will take place as the road is developed, practically this is essential to enable the road to be funded.

A Phasing Plan, Figure E was prepared that provides the landowners with certainty (subject to the environmental reporting and planning application processes) that they will be able to develop their lands and provides the owners of the dwellings within the zoning with the certainty that they will be able to have continuous access to their homes during the construction period.

Figure E was based initially on the need to protect access for those third parties not involved in the development; accordingly, the phasing boundaries were identified to ensure that the Ballyreagh Road is left open and connected to the main road network either through its existing junction on Movilla Road or through the new link road when it becomes available.

Table 2.3 below sets out the estimated yield and timeframe for the development.

Table 2.3 Phasing

Years – 2022 Starting	Phase 1	Phase 2	Phase 3	Phase 4	Annual Total	Cumulative Total
1	35	35			70	70
2	40	45			85	155
3		50	25		75	230
4		20	25		45	275
5 - Link Road Complete			50		50	325
6				73	73	398
7				73	73	471
8				73	73	544
9				70	70	605
10				70	70	675
Overall totals	75	150	100	359	684	

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Land Use Requirements during Construction and Operation

The overall development proposal is made up of the following activities, which will be undertaken, these apply to each phase or sub-phase of development: -

- Establishment on site, including erection of protective fencing around retained features and introduction of silt containment, temporary settlement ponds, creation of compounds and stores, setting out of works and surveying, marking out and protection of existing services and erection of temporary fencing to protect works;
- Site clearance and demolition;
- Implementation of dust/air quality mitigation measures;
- Archaeological investigation;
- Excavation and filling, involving excavation of suitable material from within site and re-use on site to form appropriate levels and development areas for housing, non-residential developments, open space and pedestrian/cycle paths, where applicable;
- In the case of both the distributor and residential roads, this will be bulk excavation and filling on the line of each road;
- Construction of drainage services within the road bases, including surface water attenuation facilities and eventual foul connection with NS20 to the north and a pumping station in the southern part of NS19 with linkage to the foul sewage network;
- Construction of subsidiary services to each phased housing area;
- Construction of sub-base to carriageways followed by kerbing;
- Installation of telecommunication services, electricity cables, gas mains, water mains and street lighting within the roadways;
- Construction of road base to carriageways followed by laying of bituminous basecourse;
- Trimming of fill to footways followed by construction of sub-base to footways and laying of bituminous base course;
- Deposition of top soil to verges;
- Landscaping on the residential access roads;
- Construction of housing and non-residential development;
- Creation of open space and pedestrian cycle paths,
- Construction of hard standings, car parking and service areas;
- Landscaping of open space, pedestrian/cycle routes, housing areas and car parking;

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- Reinstatement of site compound, additional working areas; and
- Removal of site asset protection measures.

The distributor road construction will proceed in advance of residential construction with the road being approximately one sub-phase ahead of the housing. Foul and storm drainage infrastructure will be provided alongside road construction.

The main land use requirements during the construction phase are: -

- The cut and fill exercise, which is intended to be a balanced exercise, involves excavation of material from areas of cut and deposition in areas of fill;
- The construction of the distributor road;
- Site compounds for the relevant built developments; and
- Any areas identified as being of environmental importance such as water courses, priority and protected habitats and species, bat roosts, archaeological remains or trees retained within the works.

During the operational phase the main land use requirements are set out below, it is recognised that due to the phased nature of the residential house building these land use requirements will overlap between the construction and operational phases of the development, however, these are the operational phase land uses: -

- The residential development;
- The distributor road;
- The community development;
- The private external garden areas;
- The public open space; and
- External hard-standing areas.

Temporary Activities

Temporary works will include site compounds, which will be required during each construction phase of the total construction period; these will move from phase to phase. These will comprise a compound surrounded by security fencing and include site offices, equipment stores, welfare facilities, first aid and parts storage in temporary portacabin-type buildings, generator and fuel storage and a parking area. The area for each compound is approximately 170m² and will be stripped and then surfaced with stone to provide an adequate vehicle load-bearing surface. Temporary drainage and settlement ponds will be introduced as part of the compound works.

An area of the compound will be used for the storage of fuel and oils, and this will be contained by a small bund constructed out of site arising material and lined with an impermeable

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membrane in order to prevent any contamination of the surrounding soils, vegetation and water table.

Protected areas of the site, including retained trees and watercourses will be fenced off at the commencement of each phase of development, no development, excavation or deposition will be permitted within the fenced off areas.

Temporary measures included in the CEMP, including buffer zones, silt traps and dust mesh fencing will be erected at the same time.

Haul routes for moving material across the site be surfaced with stone to provide a vehicle load-bearing surface. Due to the early stage of the project, the exact alignment of the haul routes was unknown at the time of writing.

The land required for each of these will be reinstated on completion of the works.

Use of Natural Resources

The principle natural resource used by the development is the development land itself. Other resources used relate to the materials included in the dwellings themselves, which are addressed in the next section, the energy demand during construction and operation and the consumption of the inhabitants, which is also addressed in the subsequent sections.

A topographical assessment of the land was carried out. Arising from disabled access regulations the road levels across any residential development site determine the dwelling levels, road design is carefully controlled in both two and three dimensions with strict limits on gradients and curves imposed that affect the manner in which the development can respond to the natural form of the site.

Accordingly finished levels across the site will be fixed by the levels achievable on the spine road, with adjacent streets limited to a practical gradient of 8%. Areas where the topography exceeds 4.5% typically require land formation to provide level platforms for the dwellings with retaining structures required when the gradients exceed 5%. At 5% there is likely to be a 1.5 to 2 metre fall across a normal 30 metre plot.

The topographical assessment therefore addressed the gradients from the spine road to the edge of the developable area of the land to determine relative gradients.

The analysis showed that the land breaks into two areas, a central area where engineering is required and the northern, southern and eastern areas where engineering is not required and that could act to receive material from the central area.

The analysis is presented in tabular form below. In terms of the areas required, the total area zoned for residential development is 33.75 hectares, the area where engineering operations

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are required is approximately 19.4 hectares and the area remaining where operations are not required is approximately 14.35 hectares.

In compiling tables 2.4 and 2.5 below the road was broken into 50 metre chainage points and levels measured perpendicular to the road line to the edge of the developable area of the land. The tables should be read in conjunction with Figure F which gives information on the chainage points locations, development pockets and gradient areas.

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Table 2.4 Ballyreagh Levels, East Side of Link Road

Chainage Point (m)	Finished Road Level (proposed)	Edge of Development Level (existing)	Distance (m)	Gradient (%)
1 – 4 (0 - 150)		NA (Road only no development)	NA (Road only no development)	NA (Road only no development)
5 (200)	37.8	39.5	55	3%
6 (250)	38.3	39.5	75	1.6%
7 (300)	38.8	40	114	1.05%
8 (350)	39.2	39.5	122	0.24%
9 (400)	38.9	40	106	1.03%
10 (450)	38.4	41.5	100	3.1%
11 (500)	38.8	42.5	86	4.3%
12 (550)	40.3	41	47	1.48%
13 – 16 (600 - 750)		NA (Road only no development on east side)	NA (Road only no development on east side)	NA (Road only no development on east side)
17 (800)	41.879	38.065 (proposed road level)	115	3.3%
18 (850)	42.542	34.5	269	2.985%
19 (900)	42.373	36.23	114	5.38%
20 (950)	41.37	35.5	95	6.17%
21 (1000)	40.65	36.8	80	4.8%
22 (1050)	41.18	36.5	130	3.6%
23 (1100)	42.756	36.2	150	4.37%
24 (1150)	44.446	36.5	150	5.29%
25 (1200)	46.136	37.5	225	3.83%
26 (1250)	47.68	39.5	263	3.11%
27 (1300)	48.472	42	234	2.76%
28 (1350)	48.972	44	143	3.47%
29 (1400)	49.496	48	148	1.0%
30 (1450)	50.863	52.5	196	0.8%

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Table 2.5 Ballyreagh Levels, West Side of Link Road

Chainage Point (m)	Finished Road Level (proposed)	Edge of Development Level (existing)	Distance (m)	Gradient (%)
1 – 11 (0 – 500)		NA (Road only no development on east side)	NA (Road only no development on east side)	NA (Road only no development on east side)
12 (550)	40.338	48	78	9.8%
13 (600)	41.549	48	76	8.5%
14 (650)	41.928	48	86	6.9%
15 (700)	41.473	48	94	6.9%
16 (750)	41.072	48	125	5.5%
17 (800)	41.879	48	109	5.6%
18 (850)	42.5	48	113	4.8%
19 (900)	42.373	48	126	4.46%
20 (950)	41.37	48	127	5.2%
21 (1000)	40.65	48	123	5.97%
22 (1050)	41.18	48	94	7.25%
23 (1100)	42.756	49	65	9.59%
24 (1150)	44.446	49	38	11.98%
25 (1200)	46.136	49	27	10.6%
26 (1250)	47.68	NA	NA	NA
27 (1300)	48.472	48	35	1.3%
28 (1350)	48.972	49.8	65	1.27%
29 (1400)	49.496	51	85	1.77%
30 (1450)	50.863	50.6	94	0.28%

This information was used to prepare a preliminary volumetric cut and fill analysis for the entire development site. This cut and fill analysis provides an estimate of the cut and fill quantities on the site however it is noted that this only takes into consideration the proposed surface to the existing surface and therefore requires further adjustments to allow for road construction, drainage construction, house foundation construction etc. The results of this cut and fill analysis is illustrated in Table 2.6 below:

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Table 2.6 Bowtown Road Preliminary Volumetric Cut and Fill Analysis

Bowtown Road Preliminary Volumetric Cut and Fill Analysis	
Cut Volume	71,560.175m ³ (34.3%)
Fill Volume	137,291.211m ³ (65.7%)
Volume Difference	65,731.036m ³
Cut Area	106,849.720m ²
Fill Area	184,642.812m ²
Plan Area	291,499.372m ²
Maximum Cut Depth	3.445m
Maximum Fill Depth	5.382m
Average Depth	-0.225m

It is considered that after the appropriate adjustments, that the site should be close to a volumetric balance which should minimise need for import materials and disposal of materials off site. This is subject to detailed design, further assessment and the results of ground investigations.

Use of Materials

While the exact rates of materials usage are currently unknown, it was possible to estimate materials requirements based on detailed information available to Fraser Homes through its past development activity. This is set out in table 2.5 below, which assumes the development of 684 dwellings.

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Construction Phase Details

The development involves construction processes that have been highlighted above and are described in more detail below. The process described refers to the development and does not involve any industrial or manufacturing production processes.

The design process has evolved over time with a number of alterations to the scheme design and its proposed finishes taking place during this period.

The finalised design therefore is a balance in meeting the objectives within the constraints of the site.

Phasing

The overall construction process will comprise the phasing above.

Set-Up

Within each phase or sub-phase of the development a temporary site compound will be set up in accordance with the process above. This compound will receive and store the materials involved in the construction process.

The principal accesses for materials, labour and plant will be via Ballyreagh Road using, initially, the Bowtown Road and subsequently the Movilla Road as well to give access to the compounds and it is likely that there will be on site security at this point.

Site deliveries will be via Ballyreagh Road to the site compounds.

Where sub-contractors are working as part of the overall project, the lead contractor will plan and co-ordinate the frequency, timing and types of deliveries.

Construction Manpower

Overall staffing levels are estimated to peak at 90 persons per annum during the duration of the construction programme.

Housing and Other Buildings Construction

Construction of the housing elements will generally be as follows: -

- Concrete foundations and floor bases
- Services connections
- Timber frame erection
- Cavity walls composed of brick/block and block
- Suspended upper floors
- Trussed roof with fibre cement slate or tile finish
- Double glazed windows

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- External doors
- External render finish (where necessary)
- Internal fit out including electrics, plumbing, heating, plastering, insulation and telecoms services
- Internal finishing including kitchen and bathroom
- External completion to include drives, hardstanding areas and/or gardens/communal landscaped areas, where appropriate

The other buildings will have similar construction processes.

Open Space, Soft/Hard Landscaping Areas and other Features

Following ground formation the open space and soft/hard landscaping require the following:

- Topsoil ground cover and/or paved finish
- Erection of any structures required e.g. public art/ street furniture, including their foundations
- Seeding of grass and planting of trees and other landscape elements (See Below)

Clearly this specification will vary depending on the nature of the open space under construction.

The area around retained hedgerows and other trees and landscaping areas, where appropriate, will be protected through the erection of temporary fencing. Although there will be loss of trees from the site, this will be more than balanced by the planting or re-planting trees as part of the development.

Road, Foot/Cycle Path Construction, Car Parking and Servicing

Generic construction details for the roads, incorporating services and drainage are as follows:

- Services including Foul Sewers, Storm Drains, Watermains, Gas Mains
- Granular sub-base
- Granular roadbase
- Road edge kerbing
- Bitumen macadam basecourse
- Wearing course

The cycle tracks and footways are proposed to be constructed as follows: -

- Services including Street Lighting Cabling, Telecommunications ducting, Electricity Cabling
- Granular sub-base
- Garden edge kerbing

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- Wearing course to proposed cycle tracks & footways

Communal car parking construction for the housing uses will be as follows: -

- Any services including Street Lighting Cabling, Telecommunications ducting, Electricity cabling
- Granular sub-base
- Bitumen macadam base course
- Wearing course

Servicing areas are constructed as follows: -

- Granular sub-base
- Concrete surface wearing course

Materials Requirement

The full quantities of materials to be imported onto the site for construction have not been calculated yet. As a result, the following are approximate estimates of the quantities of materials required: -

- | | |
|-----------------------------------------------------------|-----------------------|
| • Bricks in housing and other buildings construction = | 1,750,000 |
| • Blocks in housing and other buildings construction = | 750,000 |
| • Wood in housing and other buildings construction = | 3500m ³ |
| • Plaster in housing and other buildings construction = | 300,000m ² |
| • Hardcore sub-base to car parking areas = | 12,500m ³ |
| • Bitumen macadam basecourse to car parking areas = | 5,000m ³ |
| • Wearing course to car parking areas = | 2,250m ³ |
| • Drainage bedding = | 15,750m ³ |
| • Hardcore sub-base to proposed roads = | 14,500m ³ |
| • Bitumen macadam basecourse to proposed roads = | 1750m ³ |
| • Wearing course to proposed roads = | 1,250m ³ |
| • Proposed cycle tracks & footways = | 22,500m ² |
| • Hardcore sub-base proposed cycle tracks & footways = | 3,250m ³ |
| • Bitumen macadam basecourse to cycle tracks & footways = | 1,000m ³ |
| • Wearing course to proposed cycle tracks & footways = | 800m ³ |
| • Proposed Road Kerbs = | 17,500m |
| • Proposed Foul Sewers = | 18,000m |
| • Proposed Storm Drains = | 25,000m |
| • Proposed Street Lighting Cabling = | 15,000m |
| • Proposed Electricity Cabling = | 15,000m |

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- | | |
|-----------------------------------------|---------|
| • Proposed Watermains = | 15,000m |
| • Proposed Gas Mains = | 17,500m |
| • Proposed Telecommunications Ducting = | 18,500m |

Services and Drainage

All services and drainage will be connected into the main/public systems. Storm water is addressed below.

The storm drainage strategy incorporates SUDS design principles; therefore, the storm water flows from the site will be attenuated to the greenfield run off rate.

A maximum discharge rate allowing for climate change was calculated at 3,962.9 litres/sec and it was estimated that 4,858 – 8,409m³ of storage would be required to achieve a greenfield discharge rate of 832.1 litres/sec. Storm drainage will be constructed in a series of phases reflecting the overall development phasing, each area will be discreet with the construction of hydrobrakes limiting the discharge to greenfield rates forming part of the proposals.

This attenuated storm water flow will be taken to the water courses on site in a new storm drainage system commissioned as part of the development.

A new separate foul drainage network will be constructed within the development area; it will make provision for flows from the NS20 north of the development and will connect to an upgraded foul sewerage network beyond the site, which has capacity. The majority of the site can be gravity fed, however there will be a requirement for a pumping station at the southern boundary of NS19 to pump a short distance before gravity can bring the flow to the Portaferry Road pumping station.

Operational Phase Details

Clarifications

The operational phase of the development includes the maintenance and use of the residential development for domestic purposes. It should be noted that none of the operations conducted involve industrial or manufacturing processes.

Residential Development

The residential part of the scheme will operate as would be expected of residential properties with its main operational aspects being traffic, fuel, waste and energy consumption.

Traffic Generation

Peak traffic generation will occur in the morning and in the early evening associated with people going to and from their place of work. It is not anticipated that the food retail and

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non-food retail and the crèche will generate trips as its customers will primarily be the residents of the proposed development. Approximately 5,400 trips per day are estimated to be generated by the completed development.

Fuel

The main fuel source serving the development will be gas however it appears likely that during the construction phase the Government will introduce new standards for renewable heat and power within developments. These measures will be incorporated as required.

Waste

Increased levels of domestic waste are inevitable as a result of the proposal.

Domestic waste produced is likely to involve food and food containers, packaging, paper, glass, hygiene items (nappies etc.), plastic, metals etc and will be produced on a daily basis. Much of this is recyclable and will fall under Ards and North Down Borough Council's recycling strategy. The individual householder will be provided with colour-coded bins which will be removed on a regular basis by the Council to the appropriate venue.

DAERA collects and analyses the Councils' figures for waste collection, from its figures the average annual weight of domestic waste is 276 kilogrammes per household¹, on the basis of this it is estimated that the total amount of domestic refuse arising from the development, including recyclables, is estimated to be of the order of 68,000 tonnes annually.

Finally, it is expected that any green waste from the communal grassed areas or individual garden areas will be composed on site for re-use.

Water Usage and Foul Discharge

The proposed development has been informed by an estimated water usage of 295m³/day based on 140l/person/day and by an estimated foul discharge of 485m³/day based on 230l/person/day².

Energy Consumption

Domestic energy consumption is derived from a number of sources: space heating; lighting and cooking; hot water and others including home electronics. In absolute terms, the main use of energy is for heating (81% of all household energy use).

¹ Source: DAERA LAC Municipal Waste Collections by Councils December 2018

² NISRA NI Average household size = 2.5 persons

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Household electricity consumption in 2015-16 was 3,600 kWh per domestic metre, while 9,844 kWh of petroleum-based products were consumed per household in 2015³. The petroleum-based products include fuel for private transport. Natural gas is not present throughout the whole of NI, being limited to the east coast, however, average gas consumption in GB is 12,500 kWh per household⁴.

Accordingly, total energy consumption in the operational phase of the development is calculated to be 17,490 MWh per annum.

It is likely that during the construction phase of the development Government measures to reduce the reliance on fossil fuels for space heating, electricity generation and transportation will be introduced. Electric vehicles and various forms of non-fossil fuel electricity including microgeneration are likely to be widely adopted. However, for the purposes of robustness within the EIA it is assumed that take up of these will be slow.

This has influenced the sections below.

CO₂ Emissions

CO₂ emissions rates per source are as follows: -

- Electricity – 0.527 kg/kWh
- Gas – 0.220 kg/kWh⁵
- Petroleum-based products, using petrol as the conversion factor – 0.240 kg/kWh⁶

Accordingly the potential total CO₂ emissions from each dwelling in the development are: 1,897kg related to electricity production, 2,750kg related to the burning of natural gas in heating systems and 2,362kg related to the burning of petroleum-based products in private transport and in other uses (such as garden equipment) around the home.

The potential global figure for the whole development of 675 dwellings is 4,730 tonnes per annum.

Maintenance

Maintenance of each dwelling unit is the responsibility of the individual householders.

³ Sources: NI Census 2011, NISRA Energy in Northern Ireland 2018

⁴ Source: DECC 2014

⁵ From 2015 all new gas fired boilers were required to emit between 210 and 230gCO₂eq/kWh – source: Houses of Parliament Post Note No 523

⁶ Source: Carbon Trust

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Maintenance of the communal grassed and other landscaped areas (excluding any individual garden area) will be the responsibility of a Management Company and may include the following: -

- Pruning of trees and shrubs as appropriate
- Use of pesticides as required
- Use of fertilisers on an annual basis (or as required)
- Use of herbicide on an annual basis (or as required)
- Maintenance of planting beds etc
- Maintenance of seating areas

Estimation of Residues and Emissions from the Development

The paragraphs above provide estimates of the use of materials and emission sources in the construction and operational phases of the development. The following points summarise the use of materials and the residues and emissions arising.

- Cut and fill exercise
- Construction materials
- Traffic movements in construction and operational phases
- Maintenance operations
- Storage of fuel in construction and operational phases
- Additional surface run off
- Dust and silt in the construction phase
- Additional sewage generated
- Waste: during the construction and operational phase

The main effects are considered to be on the land, bio-diversity and transportation in terms of the following: -

- Additional traffic, waste and surface run off
- Increased activity resulting in additional disturbance and creating additional risk of pollution incidents
- Disruption to water courses
- Loss of habitat
- Increased noise
- Decreased air quality
- Effect on the public road network off site

Finally, it is not considered that there are any residues or emissions resulting in vibration, heat or radiation arising as a result of the development.

Chapter 3: Alternatives to the Proposed Development

3.1 Background and Project Objectives

3.1.1 Statement of Authority

This section of the Environmental Impact Statement has been prepared by Pragma Planning & Development Consultants Limited who are members of the Royal Town Planning Institute.

3.1.2 Introduction

The Environmental Impact Statement is based around Schedule 4 of the Planning (Environmental Impact Assessment) Regulations (NI) 2017. It requires assessors to describe the reasonable alternatives to the proposal, relevant to the development and its specific characteristics that have been studied as part of the Environmental Impact Statement process.

The consideration of alternatives to the proposed development action is an essential part of the Environmental Impact Statement process and has been integrated into the legislation for this reason. Schedule 4 is derived from the EU Directive and it requires a threefold approach; firstly the reasonable alternatives relevant to the development and its specific characteristics must be outlined, secondly they must be studied and thirdly an indication must be provided of the main reasons for the choice of site, taking into account the environmental effects. Accordingly: -

- The reasonable alternatives studied by the applicant including considerations such as development design, technologies, locations, size and scale must be described;
- These alternatives must be relevant to the proposed development and its characteristics; and
- An indication must be given of the main reasons for selecting the chosen option including a comparison of the environmental effects.

3.2 Methodology and Approach

The Regulations seek a description of the reasonable alternatives to the proposal, which are relevant to the proposed development and its specific characteristics.

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The reasonable alternatives may include (but are not limited to) the design of the development, the technology proposed, the location of the development and its size and scale.

Accordingly, a robust methodology has been developed to identify and assess those alternatives that are firstly, relevant to the proposed development and its specific characteristics and secondly, reasonable.

The first part of the methodology therefore involves setting out the specific characteristics of the development that are relevant to the selection of this particular development, its location, size, scale, form and design.

The second part involves the identification and description of alternatives that are reasonable to consider.

The third part involves the indication of the main reasons for choosing the option including a comparison of the environmental effects.

3.3 Identification and Assessment of the Reasonable Alternatives

The land contained within the proposed development site is in a number of ownerships, which are shown on figure 3.1 in Appendix 3.

The landowners are acting in consortia to achieve a comprehensive development of their lands in accordance with the Ards and Down Area Plan (ADAP) and regional planning policy.

With respect to the requirement to assess reasonable alternatives that are relevant to the proposed development and its specific characteristics, land ownership and the length of ownership are central to determining whether, for this consortium of owners' location, size and scale are reasonable to be considered as alternatives.

The majority of the land owners are either currently active farmers or have retired from farming, their families have owned the land for several generations. Consequently, these families acquired the land for agricultural purposes not residential development, and they have been overtaken by the zoning. The usual considerations of location, scale, site size and buildability do not apply to these owners.

There are two property developers in the consortium: Fraser Homes and Wirefox Capital. Of these two developers Wirefox is a broadly-based property company with a wide range of property interests, it acquired its share of the land as part of a much larger portfolio of property in which owning and developing land in Newtownards was not a determining factor.

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Fraser Homes is the only dedicated housebuilder within the consortium, it was purchased in 2018 in full by the Gardrum Group. Similar to Wirefox, when Gardrum purchased Fraser Homes it purchased all its holdings; key amongst those were the ownerships in Carryduff, which amount to around 350 dwellings of which around 290 were capable of either immediate implementation or would be capable of implementation within 12 months of the purchase. Approximately, a further 200 dwellings in Larne were also capable of immediate implementation at the time of purchase. These were the determining factors in the decision to acquire; land in Newtownards that involved multiple land ownerships and the construction of major public infrastructure was not a determining reason to purchase but rather, it came with the company. Fraser Homes had acquired its share of the ownership at Ballyreagh in 2002.

Accordingly, the features of the site, commercial need, site size, developability and other characteristics that would otherwise inform choices of location and development scale were not available to be considered by any of the current owners when the lands were acquired and indeed much of the land was not originally acquired for development purposes.

Notwithstanding the above we have considered a number of features in relation to the location, size and scale of the development; these were: -

- *Location in the Newtownards*

Newtownards is identified in the Regional Development Strategy as a Main Hub, it is described as a key commuter town to Belfast and due to its proximity and accessibility to the city plays a growing role in the functioning of the Belfast Metropolitan Urban Area by attracting commuters, tourists and businesses.

Newtownards has an established housing market that is within the Belfast travel to work area and also extends beyond it to include the Ards Peninsula and parts of County Down outside the Belfast travel to work area.

The Ards and Down Area Plan identified approximately 116 hectares of housing land on the northeastern quadrant of the town which was required to both meet housing demand and to deliver a road link between the Bangor Road and the Bowtown Road using solely private investment funded by the sale of houses in the zonings. Three separate zonings were set out, NS 19 (the subject of this EIS) NS 20, located between Movilla Road and Donaghadee Road and NS 21, located between Donaghadee Road and Bangor Road, each of these is required to deliver the road link between the two roads that bound it.

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Accordingly the zonings were of a scale commensurate with the delivery of a major piece of public infrastructure and cumulatively they result in the construction of between 2,325 and 2,905 dwellings in accordance with the densities set out in the ADAP.

■ *Site size*

Site size is important to justify the construction of a significant piece of public infrastructure that will have a cost of around £1.5M for that part of the road that lies within the NS 19 zoning.

■ *Developability*

The land needs to be relatively easy to develop with minimal (initially apparent) environmental impacts.

A further set of characteristics was considered in relation to the design of the development, these were: -

■ *Relationships with Existing, Adjacent Houses*

The development should not adversely affect the living conditions of adjacent residents, many of whom will have lived in the area for a considerable period of time, accordingly the separation distances between new and existing dwellings, the nature of the boundary between the two and the changes in level that take place were considered.

In particular the effects of the link road and mitigating those effects on existing properties needed to be considered.

■ *Access and Accessibility within the Development and resultant changes in Topography*

The necessity to amend existing site topography to accommodate development almost always arises as a result of the application of disabled access standards to roads standards on a development site. The horizontal and vertical alignment of the service roads is strictly controlled by the Roads Authority to specific gradients and corner dimensions, the dwellings are then required to incorporate level access off these roads. The road design therefore enforces changes that must be made to the site topography.

There are accordingly implications for delivery of dwellings on the local topography and engineering required to accommodate them.

■ *Sustainability – Access to and from the Development*

The treatment of access, or where available, accesses into the lands and the interconnections between them were important. Interconnected street layouts better

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replicate the conditions found in traditional towns and promote walking and cycling as alternatives to the private car.

Beyond the development lands, any changes to the transportation network that arise as a result of the development must be considered.

■ *Habitats and Other Environmental Constraints*

Habitats, including, protected species, watercourses, trees within the site, archaeological features and adjoining residential dwellings were identified and considered in the design approach. The proposed development took these features into account and the design was adapted accordingly.

A final set of characteristics were considered in relation to the technology deployed in the development. In this instance technologies were considered in terms of the mitigation measures proposed in particular in the design of surface water drainage.

3.4 Assessment of Alternatives

General

In general aspects of location, scale and size of development are not reasonable alternatives as none of the land owners had a genuine choice over its ownership. Consequently, they have not been considered further.

Assessment of Development Design

Do Nothing

The Do Nothing option was considered in the first instance because it provides a baseline for the proposals and because it is an essential component of an objective approach to the assessment. This option assumes:

- No investment occurs on the site; and
- The current circumstances pertaining to the site continue indefinitely.

In the event of no investment, none of the objectives of the proposal or related matters would be delivered. For example, the road infrastructure link to connect Bangor Road with Bowtown Road would not be completed.

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However, and notwithstanding the fact that 'no action' may appear to some to be a neutral option, there are still likely to be significant adverse effects arising from a do-nothing approach. In particular: -

- While the existing buildings on the site would remain, the absence of active occupation and maintenance are likely inevitably to result in deterioration, decay and ultimately potential for dereliction, at least in part;
- The open fields on the western side of the site are adjacent to existing residential areas, these fields are unsecured and the boundaries to the dwellings unprotected. Away from the main roads, the area is unlit and unsupervised; in the event that the occupation ceased there is a significant prospect of anti-social behaviour taking place. There is therefore potential for the 'no action' option to detract from the environment in the wider area, and to reduce the quality of life for residents; and
- The zoning of the lands for housing in the ADAP would preclude planning approval for other productive use, rendering the effects in the previous bullet points more likely.

Finally, the proposed site is specifically allocated for housing in the ADAP in order to help meet the proposed housing need and deliver major public infrastructure. The 'no action' option does not necessarily mean that alternative housing provision would have to be sought by enhanced greenfield allocation with its potential detrimental impact on the environment. However, given the capacity of the site, this would be likely and more so if housing growth either regionally or specifically in the Ards and North Down area, were greater than presently anticipated.

In light of all of the above, it was considered that the Do-Nothing option was not a viable approach to either maximising the optimum use of the site or ultimately to meeting the projected future housing needs in Ards and North Down.

Alternative layouts for the Development – Density & Developable Area

Before the design of any detailed housing layout could commence, two issues were required to be addressed – housing density and the area of development.

Alternative Housing Densities

With respect to housing density, a range of alternative densities for the site were considered. These included:

- Housing densities in accordance with ADAP;

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- Lower densities than that proposed in ADAP; and
- Higher densities than that proposed in ADAP.

With regard to the first option, the ADAP indicates a minimum gross housing density of 20 dwellings per hectare and a maximum gross density of 25 dwellings per hectare. This therefore equates to a range of between 675 and 844 dwellings on the site based on the zoned area as identified in ADAP. However, this is an over-simplistic calculation of housing density as it takes little account of site-specific circumstances. Moreover, the stipulated densities merely represent general guidance. As a result, it was concluded that the stated densities in ADAP did not necessarily represent or confer the most appropriate housing density for this site.

The second option was to assess development of the site and its context and surroundings at a lower density than that detailed in the ADAP i.e. a development of large detached dwellings in a parkland setting. However, it was concluded that a lower density development would have adverse implications in terms of:

- The sustainability assessment criterion in that failure to realize the full potential of the site may mean the need to replace capacity through greenfield extension; and
- The compatibility with the objectives of the proposed development in delivering a balanced residential community.

As a result, a lower density of development was not considered acceptable with regard to the development of the Ballyreagh Road lands.

The final option was to assess development of the site and its context and surroundings at a higher density than that detailed in the ADAP. Published guidance from the Town and Country Planning Association suggests an optimum density in urban areas of 50 dwellings per hectare. In this instance, it was determined that while the interconnected layout of streets could accommodate 50 dwellings per hectare, such a density would not be appropriate to the site. Nonetheless, it was assessed that the site was capable of being developed at a density higher than that proposed in ADAP, having regard to planning, traffic, contextual and environmental matters and provided an appropriate design-led solution could be achieved where any potential impacts/effects can be addressed.

However, an initial topographical review suggested that the topography of the lands could be challenging. As a result, although the lands were capable of accommodating higher densities a medium density was eventually chosen.

As set out in Chapter 2, the final density of 20 dwellings per hectare was reached following a review of the site, the extent of open space likely to be required in addition to the open

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space at NS43 and an appraisal of the actual densities being delivered within the area. The combination of these resulted in a density of 20 dwellings per hectare being chosen.

Alternative Designs

Alternative designs have been considered:

- With regard to the link road alignment and junction designs;
- With regard to the flooding from the culverted watercourse in the southern part of the land;
- In response to the concerns of people living within the development area as a result of the pre-application community engagement;
- The village centre has been re-located to work with the open space and accessibility; and
- As a result of habitats and protected species being identified within and on the boundaries of the land

A series of alternative road alignments were considered; these are shown on Figures 3.2 to 3.6 and include different access arrangements from Bowtown Road and changes in alignment as a result of discussions amongst the land owners. The road line was initially identified to follow the most appropriate contour line (Figure 3.2), however, this produced a road position that adversely affected the ability of the central area of the land to be used for housing and a more central position for the road was chosen (figure 3.3). This road line was adapted and junction locations firmed up in consultation with the land owners (Figure 3.4).

An additional road alignment, shown on Figure 3.5, was also considered, this alignment places the link road between the housing development in NS19 and the public open space development in NS43.

Finally, a change to the alignment of the link road in the southern part of the site to avoid the area of flooding from the culverted water course was also considered. This is shown on Figure 3.6. This realignment of the link road also resulted in a slightly different location for the Bowtown Road junction.

At the Bowtown Road junction a series of options were produced considering different arrangements for the period before DfI Roads undertakes its improvement scheme, including:

- A traditional priority junction, which could not achieve an appropriate forward sight distance on Bowtown Road;

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- Changed priority between Bowtown Road and the link road, which was unable to be delivered within the land ownership available and which would have been substantially intrusive into the drumlin immediately north of Bowtown Road;
- A standard roundabout design, which functioned appropriately but was significantly intrusive into the drumlin; and
- A compact roundabout design that also functioned appropriately and while it resulted in intrusion into the drumlin the extent was minimised

All these options involved moving the junction to the east of the current junction between Ballyreagh Road and Bowtown Road; this facilitates visibility and safety but also allows the Ballyreagh Road to be retained within the development as a greenway offering a safe route to the local school.

A series of options were also produced and presented to the owners of the properties within the area with regard to access to those properties and ensuring that access will be retained. Residents' choices have been incorporated into the Master Plan.

Ecological assessment commenced early in the design process and as a result identified habitats and species were incorporated into the layout.

Assessment of Development Designs

The development design and the amendments that were made through the design process are detailed in the following section; however, in brief terms the proposal: -

- Took account of its relationships with the adjoining housing and in particular the potential effects on the living conditions of the people living in those houses, it has located dwellings in a manner to avoid conflicts, placed landscape zones between existing and proposed dwellings and has used similar dwelling types where these abut existing housing;
- Identified and retained the site assets in the existing habitats, species, trees, archaeological features and buildings. These are incorporated into public open space or retained in buffer zones;
- The layout is that of an interconnected street network enabling walking and cycling and performing more like a traditional town;
- Externally improvements to the transport network are incorporated into the development proposals; and

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- A village centre was included to provide local facilities appropriate to the size and scale of the scheme

Technology

Drainage options considered included a range of measures to attenuate flow, these included permeable paving and a SUDS type drainage system. After consideration both were adopted.

The SUDS system utilises oversized pipes and hydrobrakes to attenuate the surface water drainage to 315 litres per second. Permeable paving is proposed on all privately owned, unadopted surfaces.

Foul sewage proposals involve the incorporation of infrastructure to accommodate NS19 as well as the developments at NS20 and NS21. A series of options were studied for the alignment of the foul sewer between NS19 and NI Water's Portaferry Road pumping station; these were: -

- Option 1: north-west along Bowtown Road, south on Old Shore Road and across Portaferry Road to the pumping station; or
- Option 2: north-west along Bowtown Road and south-west through land reserved for the NS36 Bowtown Road to Portaferry Road link to the pumping station; or
- Option 3: south-west through the development roads in Gregstown Park and Teal Rocks and north along Portaferry Road to the pumping station; or
- Option 4: south-east along Bowtown Road, turning south-west through agricultural land on the south-east side of the Teal Rocks development to the Portaferry Road and north along the road to the pumping station

The first and second options require a pumping station to be located close to the Bowtown Road; this will be an underground facility. The options are shown on Figure 3.7 and summarised on Figure 3.8 below.

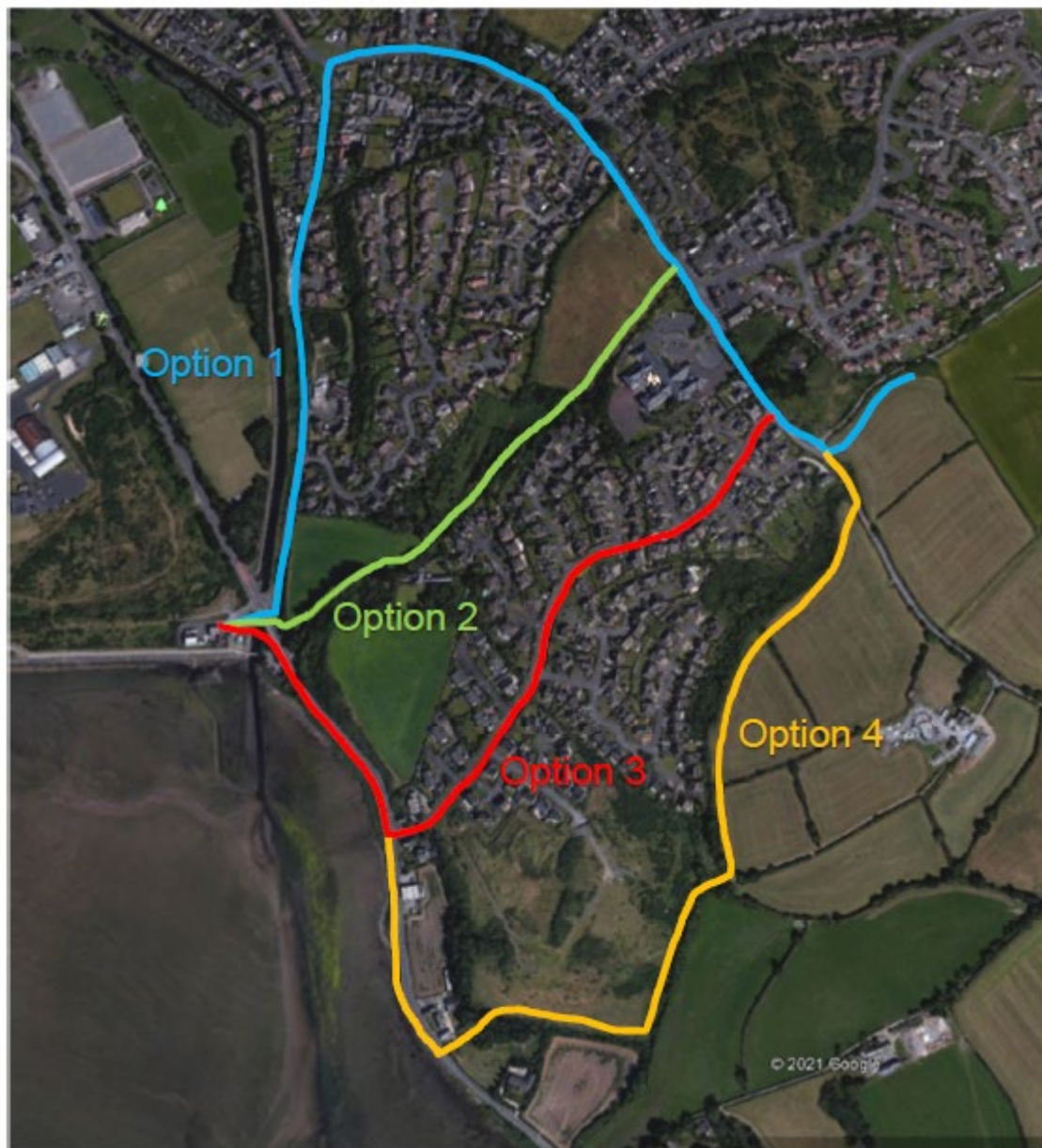


Figure 3.8

3.5 Selection of the Chosen Option including Comparison of Environmental Effects

The landowners are undertaking a residential development at Ballyreagh Road, Newtownards. Locational decisions in terms of the zoning of the land were taken independently of any of the landowners and before a number of the current land owners were involved.

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The Ballyreagh Road lands had the following attributes: -

- The land was allocated for residential development in ADAP;
- It was relatively easily developable in terms of site topography;
- It was capable of accommodating a range of housing types;
- It was well located, incorporating part of a major public road proposal; and
- It had a clear set of environmental assets that could be incorporated into the development

The design evaluation examined a range of densities in the high, medium and low bands and potential layouts. It concluded that: -

- While the site could accommodate a high density layout, site specific characteristics limit the density to the medium range;
- The site's highly accessible location makes it environmentally unsuited to a low density development scheme;
- The design progression developed over the course of the site assessment to include areas of quality habitat, protected species, trees and archaeology identified during the assessment, as a consequence the final design incorporated a greater number of features and open space areas than was originally considered;
- The internal layout is an interconnected network designed to promote walking and cycling;
- Major road development in the Bowtown Road to Movilla Road link forms part of the development proposal; and
- The site supports community facilities and public transport, and the layout is specifically designed to encourage modal shift to walking and cycling.

With respect to the layout of the site, the developer: -

- Undertook ecological assessment and an assessment of alternative housing densities and alternative development areas to inform the initial site layout;
- Undertook a programme of community engagement that informed the proposals;
- Undertook further site assessment studies and held a series of consultations with the planning and roads authorities that helped refine the proposal; and
- The layout was then put forward for detailed assessment within the Environmental Impact Statement process to assess likely significant environmental impacts

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With particular regard to the road alignment a centralised road alignment was chosen because it was considered that locating the link road between the park and the housing reduced the extent of the open space and created a physical barrier reducing accessibility. The alignment offered no environmental benefits over the chosen alignment.

In the southern part of the land a decision was made to retain the road alignment as shown on Figure 3.4; this decision took account of the following:

- The flooding arises only as a result of a design failure in the undersizing of the culvert, it is not a natural floodplain;
- The culvert will require to be altered in any event to accommodate the combined road/foul sewage infrastructure that passes through this location;
- Modelled studies of the watercourses showed no additional upstream or downstream flooding would result from upgrading the culvert; however, existing flooding would be relieved in both base and climate change models;
- The alternative link road alignment avoiding the floodplain resulted in significant additional land requirements that would not be otherwise necessary; and
- Delivery of the link road and infrastructure is intrinsically connected to the construction of housing on the lands, this is substantially front loaded with the first phase of the development accounting for around one third of the link road length, the largest diameter sewage pipes and the pumping station. Loss of the first phase as a result of flooding therefore put the whole project at risk

In relation to foul sewage, the preferred option was to construct a pumping station close to Bowtown Road and install a new sewer along the Bowtown Road, Old Shore Road and Portaferry Road to the NI Water pumping station. This was chosen to ensure deliverability by private developers who did not have land assembly powers available to public agencies. The second option involving bringing the sewer along the future NS36 road line was retained on cost grounds as it is substantially less expensive; however, it is subject to agreement with landowners and NI Water regarding deliverability.

Accordingly, the final option was unknown at the time the EIS was prepared.

The first option of running the sewer alignment along the boundary of Teal Rocks involved third party land and further penetration into the Area of Outstanding Natural Beauty alongside increased risk of pollution from construction activities.

Chapter 4: Environmental Baseline

4.1 Site Baseline

4.1.1 Statement of Authority

This section of the Environmental Report has been prepared by Pragma Planning & Development Consultants Limited, information on the author is provided in Chapter 1 of the ER.

The chapter addresses the existing baseline at the development site and sets out the likely evolution of the site in the absence of development.

Accordingly, the chapter compiles and makes use of information prepared in relation to the development site that has formed part of the scoping and EIA processes.

4.1.2 Background

This chapter provides: -

- A description of the relevant aspects of the current state of the environment (baseline scenario) and an outline of the likely evolution thereof without implementation of the development as far as natural changes from the baseline scenario can be assessed with reasonable effort on the basis of availability of environmental information and scientific knowledge; and
- A description of the factors specified in regulation 5(2) likely to be significantly affected by the development: population, human health, biodiversity (for example fauna and flora), land (for example land take), soil (for example organic matter, erosion, compaction, sealing), water (for example hydromorphological changes, quantity and quality), air, climate (for example greenhouse gas emissions, impacts relevant to adaptation), material assets, cultural heritage, including architectural and archaeological aspects and landscape

The specific aspects so identified must be assessed in terms of the likely significant effects of the development upon them including direct, indirect, secondary, cumulative, transboundary, short-term, medium-term, and long-term, permanent and temporary, positive and negative effects on the environment and should also describe difficulties encountered in compiling the information and specify the forecasting methods used to determine the effects on aspects of the environment. Accordingly, the chapter also sets out those schemes that are considered cumulative. It should be noted that individual aspects may not interact cumulatively with all

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the schemes identified, the list described in this chapter is the whole list, not all chapters will refer to all the schemes set out.

This chapter addresses the two bullet points above, the subsequent chapters provide details of the identified impacts upon the environment.

4.1.3 The Environmental Baseline

Physical Features of the Proposed Site

As detailed above, the development site is approximately 41.05 hectares in area in total, this is made up of a development area of 33.73 hectares that corresponds to the housing zoning NS 19 in the Ards and Down Area Plan with the balance made up of 7.32 hectares of public open space corresponding to ADAP zoning NS 43.

It is roughly shaped like an inverted Y and is composed of the flanks of a series of drumlins running from south to north, with the open space located on the upper slopes of two drumlins on the western side. Topographically land levels rise from Bowtown Road where the level is shown on the topographical map (Figure C in Appendix 2) as being around 35 metres to Movilla Road where it is around 51 metres. The land comprises a series of 22 agricultural fields, bounded by hedgerows and includes three farm groups and seven dwellings independent of the farm holdings. The farm groups incorporate traditional masonry-built dwellings and agricultural buildings constructed in a range of materials including metal and masonry incorporating tanks and other infrastructure associated with active farming. These groups and their related lands are part of the development scheme, while the individual dwellings are [with one exception] not included in the proposals, which make allowances for their owners in the layout and access proposals.

The majority of the farms are inactive and where the land is farmed it is let. Outside of the farm groups and dwellings, the site consists of a series of fields, bound by hawthorn (*Crataegus monogyna*) and blackthorn (*Prunus spinosa*) dominated hedgerows set on stone or clay banks with sections of colonising scrub including brier, gorse (*Ulex europaeus*) and ivy (*Hedera helix*); with a minor watercourse on the eastern side.

The following is a systematic description of the principal features.

The southern arms of the inverted Y are defined by the Ballyreagh Road, which forms the north-western boundary of the western arm and the northern boundary of the eastern arm. This area is relatively flat, here the land is low-lying at the base of the group of three tall drumlins that separate the two arms of the Y. On the south-western arm the level is around 38 metres, while

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the south-eastern arm south of the Ballyreagh Road varies generally between 33 and 36 metres with a general fall to the south and east towards Strangford Lough.

Hedgerows in this area are incomplete and species poor in general although a visually significant hedgerow with trees signifies the northern boundary of the area. The field habitats are improved grassland. On the eastern arm of the Y hedgerows are more complete but remain species poor and include non-native species.

The watercourse running along the northeastern boundary is not considered to be of particular habitat significance; however, there are protected species in this part of the land.

North and west of the junction between the arms of the Y the land is formed from the flanks of two drumlins in the west of the lands that rise to around 58 metres at the highest point in the north west of the land. This higher area demarcated by the 48-metre contour occupies the western boundary of much of the land and is zoned for open space use. Its purpose also appears to be one of protection, ensuring that the development does not intrude into views from the AONB or shores of Strangford Lough.

East of the open space zoning the drumlin flanks continue to fall to the east with the gradient decreasing to a level of between 36 and 39 metres on the eastern boundary. Levels in the north east corner of the site relate to a drumlin that rises to a peak north of the site boundary and on the opposite side of the Movilla Road.

The trunk of the Y is composed of a series of fields bounded by generally species poor hedgerows, some of which contain groups of trees and non-native hedgerows. There is a single species rich hedgerow in the northern part of the land. The fields themselves are mostly pasture, improved grassland, with two large fields in west of the area are in arable use.

Houses and farm buildings are located throughout the area, individual homes are more prevalent in the southern part of the area where six front onto Ballyreagh Road while the three farm groups are concentrated in the central/northern part of the area.

A watercourse rises on the eastern boundary and flows south, it is not considered to be of ecological significance. The buildings are considered to have some bat roost potential with two roosts identified in the 2019 summer survey season. Bat foraging and commuting along the hedgerows within the lands has been identified, while protected species have been identified along the boundaries.

Two linear groupings of mature trees on the Ballyreagh Road stand out as visual features in the area.

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Relevant Aspects of the Environment – Baseline

The scoping report contained a series of studies addressing the relevant aspects of the environment at the site, the baseline assessments of these were: -

Ecology

The site is dominated by species poor habitats with improved grassland dominating throughout.

Hedgerows and tree lines identified on site are considered a priority habitat within Northern Ireland. They are defined as any boundary line of trees or shrubs over 20m long and less than 5m wide. Although the hedgerows are species poor they help provide foraging habitat and nesting locations.

The dominating areas of improved grassland are low in species diversity.

The site contains two bat roosts and foraging and commuting habitat.

The site also provides habitat for breeding birds of conservation concern and badgers are also present.

Water, Soils and Land

The geological setting of the site consists of a layer of boulder clay over sandstone bedrock of the Gala Group Formation of Silurian sandstones found mainly in northern England and southern Scotland but also on the Ards Peninsula.

The Gala Group is classified as a low productivity aquifer where groundwater moves by fracture flow. The boulder clay is not considered to represent a potential superficial aquifer, particularly given the likely thin layer of the deposits within the site boundary. Some groundwater may be encountered in localised sand or gravel lenses within the deposit and at the base of the boulder clay close to the interface between it and weathered fractured basalt bedrock.

Air

As the air quality baseline is modelled, the use of background concentrations within the air quality concentration prediction process ensures that pollutant sources other than traffic are represented appropriately. Background sources of pollutants within the vicinity of the study site include industrial and domestic emissions.

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Noise

The noise baseline was established through automatic noise monitoring. The dominant noise source within the proposed development site area is traffic noise emanating from main roads and the surrounding road network.

Background noise measurements undertaken in 15 minute intervals from four separate locations. The typical noise levels at each location were: -

Noise Monitoring Location	Typical Daytime		Typical Night-time	
	L _{Aeq} 1 hour (dB)	L _{A90} 1 hour (dB)	L _{Aeq} 15min (dB)	L _{A90} 15min (dB)
1	65	44	44	32
2	44	34	38	36
3	47	39	43	32
4	50	43	45	38

These noise monitoring locations were carefully chosen to provide results that are representative of the existing ambient noise within the site. Both locations selected represent the proposed dwellings closest to road traffic noise.

The noise baseline figures were indicative of morning birdsong and traffic noise on the main roads adjacent to the site.

Archaeology

A desk top survey was conducted to identify the location of known cultural heritage sites relevant to the proposed development site.

A number of sources were inspected, these were: -

- The Sites and Monuments Record (SMR);
- Industrial Heritage Record (IHR);
- Historic Buildings Record (HBR);
- Historic Gardens Register;

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- Defence Heritage Register;
- Battle Sites;
- Excavations Database;
- Pre-Ordnance Survey Maps; and
- Early edition Ordnance Survey Maps

The Sites and Monuments Records (SMR) indicated that no known archaeological monument are located within the red line boundary while 14 archaeological monuments were identified in the surrounding area indicating that lies within an area of archaeological interest.

In addition to these archaeological sites, two industrial heritage sites were identified in the Industrial Heritage Records (IHR).

On the basis of the desk top survey it was concluded that the archaeological baseline of the site was such that there could be other remains within the site boundary.

Landscape

The Application Site is located on a low lying but gently undulating landscape approximately 0.6km to 2km north of the Strangford Lough shoreline. The land rises and falls between +35m on Bowtown Road and +55m on the Movilla Road with intervening undulations reaching a maximum of +58.5m. The adjacent landscapes follow a similar pattern of irregular but low hills though levels to the west, within Newtownards, has been substantially altered to facilitate townscape development.

The field structure and layout has remained largely unaltered since the 19th century, the site boundaries to the east abut open fields in pasture or arable use defined by mixed quality and height hedgerows. To the west and southwest the boundary abuts housing estates that form part of the wider urban townscape of Newtownards that spreads across the low-lying lands towards the north shore of Strangford Lough.

Tree cover is very limited with approximately 140 no. trees of substantial size across the entire development area. These are located in hedgerows or aside older farmsteads and are predominantly self-seeded ash and sycamore and incidental non-native conifer, cypress or fir trees that give parts of the area a deceptively wooded character when viewed from ground level.

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Cumulative Assessment

A series of sites and developments have been identified as having potential cumulative interactions with the development proposal. The nature of these cumulative effects as they relate to each aspect are addressed in that particular chapter, as set out above not all of the sites identified will act cumulatively with every aspect.

The sites identified are set out in Table 4.1 below and on Figure 4.1, prepared by RPS.

Table 4.1 Cumulative Sites and Developments

Map No	Planning Reference	Application Received	Proposal	Address	Status	Decision Date
1	LA06/2015/0851/F	13 Nov 15	Proposal to develop site fronting Movilla Road, to include 9 no. detached dwellings, access, car-parking and landscaping (Amended Address)	Lands between the rear of no 3-63 Abbeydale Park and Movilla Road Newtownards	Permission Granted	08 Sep 16
2	LA06/2016/0805/F	11 Aug 16	Change of use from a Church and associated facilities to a Garden Centre and associated facilities which include: internal display and sales area; external display areas for plants and other goods; cafe/restaurant; internal /external alterations; and upgrade of existing carpark	80 Ballyreagh Road Bowtown Newtownards	Permission Granted	05 Apr 17
3	LA06/2017/0533/F	03 May 17	185 (amended number) mixed townhouses, semi-detached and detached houses, with garages, housing roads and extension to Rivenwood Boulevard, with associated open spaces including an equipped play park, and including 12 apartments in a three-storey building (Receipt of amended Comprehensive Master Plan and additional information)	Land to the east of 1-11 Old Forge Avenue 2-8 and 17-19 Old Forge Drive and 110b 110c and 110d Movilla Road south of 110a Movilla Road west of 112 Movilla Road Wright Waste Management Ltd. and 124a Movilla Road and north of First Street Rivenwood and First Avenue Rivenwood Newtownards	Permission Granted	16 Apr 19
3a	LA06/2019/0460/F	20 May 19	8 no. dwellings - 4 no. dwellings at sites formerly numbered as 235 and 238 to become sites nos. 233, 234, 235 and 236; and change of house types to 3 no. dwellings at site nos. 174, 175 and 233 and retrospective permission for a change of house type to site 155. Amendment to previously approved application LA06/2017/0533/F	Land to the east of 1-11 Old Forge Avenue 2-8 and 17-19 Old Forge Drive and 110b 110c and 110d Movilla Road south of 110a Movilla Road west of 112 Movilla Road Wright Waste Management Ltd. and 124a Movilla Road and north of First Street Rivenwood and First Avenue Rivenwood Newtownards	Permission Granted	06 Nov 19
4	X/2011/0240/F	30 Mar 11	Proposed extension to Building 1 for storage of baled recyclables and extension to Building 2 to include waste storage area, alteration to ridge height, sorting line and extended operating hours	Rockmount Quarry 124a Movilla Road Newtownards BT23 8RJ	Permission Granted	01 May 12

Table 4.1 Cumulative Sites and Developments

Map No	Planning Reference	Application Received	Proposal	Address	Status	Decision Date
5a	X/2014/0370/F	30 Jun 14	Phase one of 100 houses, with part of an Eastern Distributor Road and a separate access from the Movilla Road between Milford Manor and 118 Movilla Road Newtownards and a 2 hectare site set aside for future school, temporarily landscaped as open space (Amended proposal description and plans received)	NS20 Housing zoned lands between Old Forge Lane/Old Forge Way/Old Forge Drive and 114c 116 118 and Millford Manor Movilla Road Newtownards	Permission Granted	15 Feb 16
5b	LA06/2017/0340/F	13 Mar 17	4 no. two-bedroom bungalows (House Type P) at sites 22, 23, 28 and 29 with the inclusion of garages to sites 22, 23 and 28. Change of house type from 4 no. three-bedroom semis (House Type Q) and change of plot boundaries for sites 21, 24, 31 and 32 as approved under X/2014/0370/F.	Sites 1 3 11 15 17 19 23 and 25 First Avenue proposed Rivenwood development Newtownards BT23 8HJ	Permission Granted	07 Sep 17
5c	LA06/2017/0398/F	24 Mar 17	17 detached dwellings with the inclusion of garages - to replace previously approved dwellings at sites 58-74 and 95-100 (Amendment of approval X/2014/0370/F - Phase 1 of 100 houses, with part of the Eastern Distributor Road, a separate access from Movilla Road between Millford Manor and 118 Movilla Road and a 2 hectare site set aside for a future school)	11-23 (odds only) and 40-72 (evens only) First Street Rivenwood Newtownards BT23 8HJ	Permission Granted	05 Jul 17
6	LA06/2015/0017/O	30 Mar 15	Erection of dwelling and garage	60 metres west of 10 Loughries Road Newtownards BT23 8RN	Permission Granted	12 Apr 16
7	LA06/2016/0863/F	01 Sep 16	Proposed single storey rear kitchen extension, entrance lobby extension, removal of existing splayed bay window, construction of new rectangular bay window to living room and replacement of existing windows, roof finish and internal alterations/modifications	88 Bowtown Road Newtownards BT23 8SL	Permission Granted	09 Feb 17
8	X/2013/0327/F	26 Jul 13	Proposed development of a 500KW anaerobic digestion (AD) and combined heat and power (CHP) plant, feedstock storage areas, slurry and digestate storage lagoon, weighbridge and alterations and upgrading of existing access	Lands adjacent and east of no 90 Bowtown Road Newtownards BT23 8SL	Permission Granted	29 Apr 14
9a	LA06/2016/0361/F	18 Apr 16	New two storey detached domestic garage and store	87 Bowtown Road Newtownards BT23 8SL	Permission Granted	28 Sep 16

Table 4.1 Cumulative Sites and Developments

Map No	Planning Reference	Application Received	Proposal	Address	Status	Decision Date
9b	X/2013/0276/F	17 Jun 13	Detached Garage/Store	87 Bowtown Road Newtownards BT23 8SL	Permission Granted	31 Jul 13
10	X/2013/0317/F	17 Jul 13	Proposed temporary storage container for Scouts equipment	Movilla Abbey Methodist Church 63 Movilla Road Newtownards	Permission Granted	14 Nov 13
11a	LA06/2016/0962/F	29 Sep 16	Residential development of 75 no dwellings (including 50 semi-detached dwellings and 25 detached dwellings) including associated site works, landscaping and access via River Hill Road (Amended Plans)	Lands Northwest of 66-134 Donaghadee Road East of Bangor Road (River Hill) and Southeast of Former Railway Line Newtownards.	Permission Granted	08 May 17
11b	LA06/2018/0452/F	04 May 18	Residential development comprising of 22 no. dwellings, 14 of which are new units and 8 are previously approved units. Changes to those previously approved under ref: LA06/2016/0962/F, include changes to the boundaries of sites 101, 120 & 121 and a change in house type to sites 115 to 119, including associated site works, landscaping and access via River Hill Road.	Lands to the rear (north west) of no. 116 Donaghadee Road Danescourt nos. 10 to 15 and nos. 126 to 132 Donaghadee Road Newtownards and to the east of River Hill Road.	Permission Granted	26 Mar 19
12a	X/2011/0247/O	05 Apr 11	New residential neighbourhood comprising mix detached, semi-detached, townhouses and apartments, open space, landscaping, pedestrian/cycle paths, distributor road from signalised junction on Bangor Road to roundabout on Donaghadee Road and associated ancillary works.	Land north of 262 Bangor Road Beverley Way/Walk Newtown Vale/Park/Crescent 214 Donaghadee Road and 8- 9 Ballyharry Heights west of 171 Donaghadee Road south/west of 270 Bangor Road and west of 250 Donaghadee Road Newtownards.	Permission Granted	20 Dec 12
12b	X/2013/0336/RM	05 Aug 13	Proposal Approval of reserved matters relating to Phase 1A lands for the erection of 57 dwellings comprising mix of detached and semi-detached dwellings, open space and ancillary works.	Address Lands north of 262 Bangor Road Beverley Way and Beverley Walk south of 270 Bangor Road and south-east of 219 Bangor Road Newtownards.	Permission Granted	26 Jun 15

Table 4.1 Cumulative Sites and Developments

Map No	Planning Reference	Application Received	Proposal	Address	Status	Decision Date
12c	X/2014/0280/RM	19 May 14	Approval of reserved matters relating to Phase 1B lands for the erection of 24 dwellings comprising a mix of detached and semi-detached and 13 apartments, open space and ancillary works (37 residential units in total)	Land north of 262 Bangor Road Beverley Way/Walk south/east of 270 Bangor Road and south east of 219 Bangor Road Newtownards	Permission Granted	05 Oct 16
12d	LA06/2015/0935/RM	09 Dec 15	Approval of reserved matters relating to Phase 2 lands for the erection of 353 dwellings comprising a mix of detached and semidetached and 60 apartments, open space and ancillary works (413 residential units in total)	Land north of 262 Bangor Road Beverley Way/Walk Newtown Vale/Park/Crescent 214 Donaghadee Road and 8- 9 Ballyharry Heights west of 171 Donaghadee Road south/west of 270 Bangor Road and west of 250 Donaghadee Road Newtownards.	Permission Granted	10 Sep 18
12e	LA06/2017/1142/F	27 Sep 17	New residential neighbourhood comprising mix of detached, semi-detached, townhouses and apartments, open space, landscaping, pedestrian /cycle paths, distributor road from signalised junction on Bangor Road to roundabout on Donaghadee Road and associated ancillary works. Variation of condition 5 of planning permission X/2011/0247/O from - Details of the proposed signalised junction onto Bangor Road and the distributor road through the site linking Bangor Road to the roundabout at the Donaghadee Road shall be submitted to the Department at Reserved Matters Stage. The signalised junction shall be implemented as approved and become operational prior to any other development commencing on the site. To - Details of the proposed signalised junction onto Bangor Road and the distributor road through the site linking Bangor Road to the roundabout at the Donaghadee Road shall be submitted to the Council at Reserved Matters Stage. The signalised junction shall be implemented as approved and become operational prior to the construction of the third dwelling. (Amended Description)	Land north of 262 Bangor Road Beverley Way/Walk Newtown Vale/Park/Crescent 214 Donaghadee Road and 8- 9 Ballyharry Heights west of 171 Donaghadee Road south/west of 270 Bangor Road and west of 250 Donaghadee Road Newtownards.	Permission Granted	04 Sep 18

Table 4.1 Cumulative Sites and Developments

Map No	Planning Reference	Application Received	Proposal	Address	Status	Decision Date
12f	LA06/2017/0205/F	09 Feb 17	New residential neighbourhood comprising mix of detached, semi-detached, townhouses and apartments, open space, landscaping, pedestrian /cycle paths, distributor road from signalised junction on Bangor Road to roundabout on Donaghadee Road and associated ancillary works. Variation of condition 5 of planning permission X/2011/0247/O from - Details of the proposed signalised junction onto Bangor Road and the distributor road through the site linking Bangor Road to the roundabout at the Donaghadee Road shall be submitted to the Department at Reserved Matters Stage. The signalised junction shall be implemented as approved and become operational prior to any other development commencing on the site. To - Details of the proposed signalised junction onto Bangor Road and the distributor road through the site linking Bangor Road to the roundabout at the Donaghadee Road shall be submitted to the Council at Reserved Matters Stage. The signalised junction shall be implemented as approved and become operational prior to the occupation of the second dwelling.	Land north of 262 Bangor Road Beverley Way/Walk Newtown Vale/Park/Crescent 214 Donaghadee Road and 8- 9 Ballyharry Heights west of 171 Donaghadee Road south/west of 270 Bangor Road and west of 250 Donaghadee Road Newtownards.	Permission Granted	02 Jun 17
13a	X/2010/0168/F	19 Feb 10	Barn conversion into three dwellings (two 2 storey and one single storey), plus one split level replacement dwelling.	Woodburn, 17 Ballyreagh Road, Newtownards, BT23 8SJ.	Permission Granted	15 Mar 11
13b	LA06/2019/0699/F	01 Jul 19	New dwelling - change of house type from network previous approval - X/2010/0168/F	Woodburn 17 Ballyreagh Road Newtownards BT23 6SJ	Under Consideration	Not Available
14	X/2010/0084/O	29 Jan 10	Housing development including roads and associated infrastructure.	Lands to the North of Bowtown Road and to the East of Ballyreagh Road, Newtownards (Ards & Down Area Plan 2015-NS19).	Application Withdrawn	Not Available
15a	X/2014/0369/F	30 Jun 14	Full application for community park and gardens, Community buildings, a single storey retirement cottage for respite care and other community facilities with proposed new access from Abbot Gardens.	Land adjacent to and approximately 150m South East of Abbot Close Newtownards	Permission Refused	06 May 15

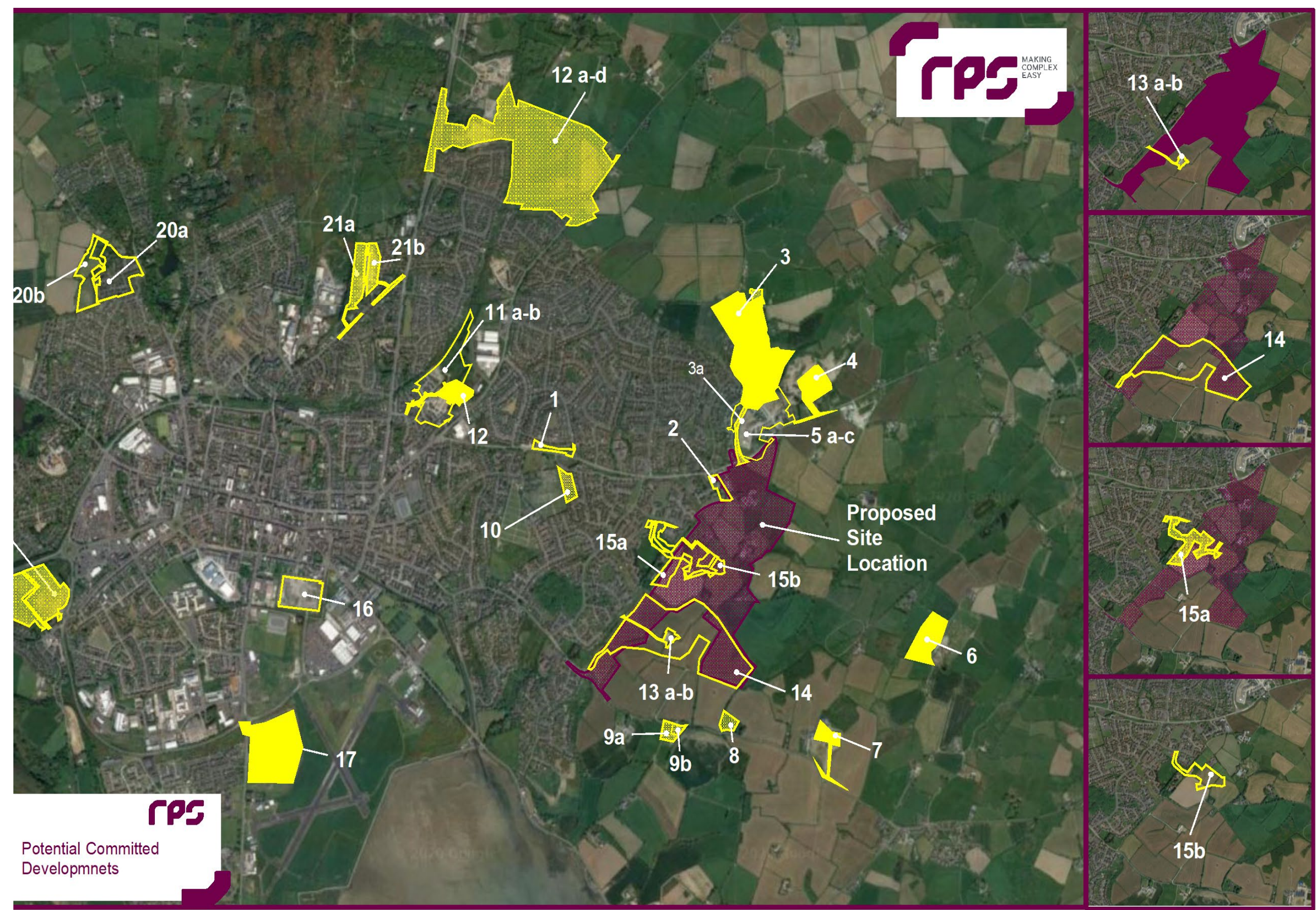
Table 4.1 Cumulative Sites and Developments

Map No	Planning Reference	Application Received	Proposal	Address	Status	Decision Date
15b	X/2011/0604/O	19 Sep 11	Residential care home providing general nursing and high decency dementia care, including access roads, landscaping, adjacent open space and other associated site works	Land adjacent to and approximately 150m South East of Abbot Close Newtownards	Permission Refused at Appeal	15 Nov 12
16	LA06/2019/0603/F	29 May 2019	Proposed residential development providing a total of 108 no. detached and semi-detached units to include 74 no. 3 and 4-bedroom houses and 46 no. 2-bedroom apartments with associated landscaping. The scheme also includes the retention and restoration of Bawn Wall and a linear park with all roads, parking and infrastructure. Main access to the site will be from the A20 Southern Distributor Road with provision for a pedestrian link to Court Street (Amended plans and description)	Castlebawn Lands south of 37-77 Court Street Newtownards situated within Bawn Wall and bounded by canal with vehicular access from Castlebawn roundabout	Under Consideration	NA
17	LA06/2015/0283/O	02 Jun 2015	Demolition of existing buildings and proposed mixed use development comprising industrial units (Class B2 & B4), business units (Class B1(a) (b) & (c)), leisure complex, 2 No. 70 bed nursing homes (Class C3), a 100 bed hotel (Class C2), a 4-island petrol filling station, several hot food outlets & cafes, neighbourhood centre to include creche/ nursery (Class D1(b), retail use (Class A1), a Health Centre (Class D1(a)), a bank (Class A2(a) and not more than 96 residential apartment units (Class C1). Amended proposal to provide new roundabout (at Cambourne Housing Estate entrance) and road improvements at Comber Road access and new access on Comber Road/Castlebawn Link Road (with associated alterations to existing road layout) - previous approval ref X/2010/0296/O	Crepe Weavers Lands at Marm factory site 20 Comber Road Newtownards	Permission Granted	15 Jun 2017
18	LA06/2015/0891/F	27 Nov 2015	Site for housing development for 85 no. dwellings. Construction of 52 no. semi detached dwellings, 25 no. detached dwellings and 8 no. apartments with associated external works and landscaping (amended plans)	Former Scrabo High School, Scrabo Road, Newtownards BT23 4SJ	Permission Granted	28 Feb 2017

Table 4.1 Cumulative Sites and Developments

Map No	Planning Reference	Application Received	Proposal	Address	Status	Decision Date
19	X/2005/1041/F	22 Sep 2005	Proposed housing development totalling 121 units (comprising 25 detached, 26 semi-detached, 40 duplex apartments & 28 apartments) including conversion of existing Mountpleasant House to two apartments (amended plans for listed building proposal only).	Mount Pleasant, Lands to the rear of No's 1-29 Old Belfast Road, Newtownards.	Permission Granted	02 Jul 2007
20a	X/2010/0054/F	19 Jan 2010	Residential development of 106 dwellings comprising detached, semi-detached, townhouses and apartments, associated open space landscaping, access and right turn lane on Crawfordsburn Road. (Amended proposal description)	Lands surrounding 8 Tullynagardy Road falling north of Saratoga Avenue and Galla Way, west of Crawfordsburn Road, and south of Tullynagardy Road Newtownards Co Down.	Permission Granted	05 Mar 2012
20b	LA06/2019/0888/F	02 Sep 2019	Residential development comprising the erection of 64 no. dwellings (mix of detached and semi-detached) with access via Tullynagardy Avenue with associated site works and landscaping.	Lands off Tullynagardy Avenue to west of nos. 46-54 Tullynagardy Lane 30m south of Tullynagardy Road north of nos. 21-25 Valencia Way North and 17a-21 Gallaway Newtownards BT23 4YS.	Under Consideration	NA
21a	X/2015/0180/F	27 Mar 2015	Development of 50 no. houses (20 detached and 30 semi-detached). Access from North Road as approved under X/2006/0757/F. Reduction in density from approval X/2006/0757. (Amended boundary treatment plan)	Lands At Nos 34a-36 North Road And East Of Laneway To Whitespots Newtownards BT23 7AS	Permission Granted	15 Feb 2017
21b	X/2015/0179/F	27 Mar 2015	Residential development of 31no. dwellings with access via No.56 North Road (reduced density and additional access to part of development site approved under X/2006/0757/F) (Amended Plans)	Lands west of No.58 North Road and Orchard Lane/ Orchard Gardens Newtownards BT237AS	Permission Granted	15 Feb 2017

Figure 4.1 Cumulative Sites - Locations



4.1.4 Changes in the Do-Nothing Scenario

In accordance with best practice we have considered the likely changes in the baseline in so far as they can be assessed on the basis of the availability of information.

In the do-nothing scenario the development does not take place and the use of the land continues as it is currently. In this scenario it has been considered that a number of changes may take place.

The current farming practices in which the majority of the land is used for grazing would continue and with it the tension between habitat and the grazing animals would also continue. The presence of animals on site will lead to the erosion of habitat and result in continued species poor grassland and hedgerows.

The erosion of the hedgerows would affect their use for nesting, commuting and foraging by birds and other protected species including bats.

Given the topography and the thinness of the soils in certain locations soil erosion is possible although this must be set in the context of the sandstone bedrock.

Tree loss and soil erosion would have implications for landscape depending on the nature and extent. However, the probability of these is considered to be low.

Air and noise baseline changes in the do nothing scenario result mainly from background traffic growth and from the effects of other development taking place.

Archaeology is unlikely to be affected.

Chapter 5: Assessment of Significance

5.1 Introduction

5.1.1 Statement of Authority

This section of the Environmental Report has been prepared by Pragma Planning & Development Consultants Limited, information on the author is provided in Chapter 1 of the EIA.

The chapter addresses the potential significant effects of development at the subject site and sets out those aspects of the environment considered through the screening and scoping processes to require additional study.

Accordingly, the chapter compiles and makes use of information prepared in relation to the development site that has formed part of the earlier EIA screening and scoping report.

In addition, Ards and North Down Borough Council has prepared a scoping report, which is appended in Appendix 5; the Council scoping report is referred to in the sections that follow.

5.1.2 Scope of Assessment

The EIA screening and scoping process considered the potential for there to be effects on a series of aspects; for completeness these aspects are as follows: -

- Bio-diversity, flora and fauna;
- European sites linked to the lands;
- Soils;
- Water;
- Human Health including air quality and noise;
- Drainage;
- Landscape, including visual effects;
- Material Assets, including transportation;
- Cultural Heritage

A screening and scoping report was prepared and submitted to the Council at the pre-application stage. Pre-application consultation responses were considered and an Environmental Report addressing these aspects was submitted accompanying the planning application. The Environmental Report was subject to consultation and consultee responses have been incorporated into the EIA. The Council's scoping report was issued following receipt of those consultations.

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At the time the screening and scoping request was made, impacts on population, and climate were considered but no specific reports were produced. Subsequently the Environmental Report included information relating to population.

5.2 The Screening and Scoping Report

A screening and scoping report was prepared to identify those aspects of the environment that would be likely to be affected by the proposals. Taking account of the location of the land, the primary effects of the proposed development are likely to be broadly focused on: -

- The land and its habitats that will be directly altered by the development and in particular:
 - Civil engineering on a significant scale to introduce the distributor road and housing will change the nature of the land, its slopes and vegetation;
 - The use of the land will change significantly from agriculture to housing;
 - Visual changes will result from the development, at least at close range;
 - There would be direct impacts on any buried archaeological remains;
 - Its drainage and hydrological conditions
- The water connections between the site and the designated sites in Strangford Lough; and
- Outside the site, effects on the existing transportation infrastructure are likely to be significant

It is also likely that aside from these primary effects there will be changes to the existing air quality and noise environments related to the development; these may be significant.

Finally, changes in population and effects on local services may also take place as a result of the operation of the development as a housing area.

The broader land effects identified above are composed of direct and indirect impacts on bio-diversity, in particular the effects on the designated sites in Strangford Lough and priority habitats within the site, as well as water and drainage, in combination with bio-diversity, and are linked to soils through the proposed engineering works. Individually and cumulatively these aspects are considered to be of significance.

Additionally, the effects of the change of land use from agricultural to residential are wrapped up in the above.

Changes in the landscape and visual resource are considered to take place at, at least, an immediate local level as the land is contained within the wider landform and vegetation

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structure; however, it is likely that there will be an effect on the visual resource from the development.

Further issues relating to transportation and human health are factors that have the potential to be significant. Transportation is likely to be significant, although effects on human health through air and noise impacts are less likely to be significant than those above. Similarly, the proposal has the potential to create cultural heritage effects, in particular the land may contain buried archaeology not currently known about.

Population aspects are likely to have some significance. Although the potential for in migration and demographic change as a result of the workforce is limited by its likely size and by the fact that a proportion will come from Newtownards and so the construction phase of the development is unlikely to produce significant effects the operational phase is likely to be significant.

Effects in the operation phase are related to demographic change occurring as a result of in-migration into Newtownards from surrounding districts as a result of the development, the total potential population is likely to be around 1,600 out of a total population in Newtownards of around 28,000. At a level of 5.7% the total population of the lands has the potential to cause significant changes in demography and place additional pressure on public services especially in the event that in-migration accounts for a major proportion of the finally resident population.

5.3 The Environmental Report

The planning application was submitted without an Environmental Impact Statement; however it was accompanied by an Environmental Report that addressed most of the aspects that would be dealt with by an EIS. The ER included chapters on bio-diversity, land, soils and water, drainage, transportation, noise, air quality, landscape and visual impact and archaeology; it included a Construction Environmental Management Plan and a comprehensive chapter on mitigation.

The Council issued the ER to consultees for consideration as part of its scoping for the EIA; those responses informed the Council's scoping report and have been taken into consideration in the EIS. The consultees and their responses are summarised in Table 5.1 below and they are included in Appendix 5 in full. DAERA (NIEA) responses were received later and are summarised in Table 5.2.

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5.4 Consultation

Table 5.1 Consultation on the ER

Consultee	Summary of Comments
DfI Roads	Accepted the TA scoping report contained within the ER and set out details to be included in the TA.
Historic Environment Division	Requested amendments to be made to the archaeological assessment as part of the EIA.
DfI Rivers	Accepted the drainage assessment and requested additional information in relation to flooding and flood risk.
Environmental Health	Requested additional information in respect of contaminated land, noise and air quality be included in the EIA.
NI Water	Referred to the Pre-Development Enquiry that identified network capacity issues.
Shared Environmental Service	Requested further information in relation to the Habitats Regulations Assessment.
Ulster Flying Club	Noted that while the development would have no effect there will be restrictions on the height of plant and machinery and requested a risk assessment. Noise impact from aircraft should also be assessed.

Table 5.2 DAERA Responses

DAERA Section	Comment
Marine and Fisheries Division	Noted that having considered the impacts of the proposal it referred to standing advice.
Drinking Water Inspectorate	Development should not impact on the quality or sufficiency of a private water supply. Taking account of the scale, type, location and potential impacts from the proposal the developer should undertake

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	searches and investigations and follow the standing advice.
Water Management Unit	Noted that a full Construction Environmental Management Plan (CEMP) should be submitted for agreement at least 8 weeks prior to construction commencing. Also recommended consultation with NI Water regarding sewage capacity.
Inland Fisheries	Content subject to full implementation of the mitigation outlined in the Environmental Report.
Industrial Pollution and Radiochemical Inspectorate	Content with the scope of the Preliminary Risk Assessment (PRA) taking account of the site situation and history of potentially contaminating land uses on an in its vicinity.
Natural Heritage and Conservation Areas	The scope of information proposed for inclusion is adequate to enable a full assessment of the proposal, subject to additional information being provided.

The Council's Scoping Report

In accordance with the 2017 Regulations the Council issued a scoping report on 25 June 2020; this report recommended that the EIS should contain, as a minimum: -

- A description of the proposed development;
- A description of the likely significant effects of the proposed development on the environment;
- Measures to avoid, prevent or reduce and if possible offset likely significant adverse effects;
- A description of the reasonable alternatives relevant to the proposed development and its characteristics and reasons for the option chosen;
- A non-technical summary; and

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- Any information specified in Schedule 4 (of the 2017 Regulations) relevant to the specific characteristics of the development of type to the development and to the environmental features likely to be affected

In particular the Council considered the following to be of importance: -

1. Cumulative, interrelated and In-combination Impacts – especially in conjunction with the approved development at NS20 and NS21 in relation to infrastructure, transportation, landscape and visual effects and sewage disposal;
2. Transportation;
3. Landscape and visual impacts and tree survey; the Council considered that the proposed development required a more detailed master plan than that which was available at the time (it should be noted that a detailed master plan has subsequently been developed to inform the EIA/EIS process);
4. Drainage and Flood Risk, in particular flooding from a culverted watercourse in the southern part of the site;
5. Designated sites in Strangford Lough for which Habitats Regulations Assessment is required. In particular details of the new sewage network were considered to be necessary;
6. Noise;
7. Contaminated land as the EHO required additional information in the form of intrusive site investigation;
8. Air Quality; and
9. Cultural Heritage, in particular additional information was requested in accordance with HED advice for EIA

5.5 Scope and Extent of Assessment of Aspects

The scoping reports prepared in relation to the various aspects indicated that there is potential for there to be significant effects, in particular and primarily this is considered to be on biodiversity, land, soils and water aspects arising from direct impacts from the development and from the interaction and interrelationship between these aspects, which include European protected sites in Strangford Lough.

As part of a planning application a Habitats Regulations Assessment will be required and a shadow HRA has been prepared.

In addition, it is considered that there is potential for there to be significant effects on population and the transportation network aspects of material assets.

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While these are likely to be the main effects information is also likely to be required in relation to air and human health.

Accordingly, the main effort in preparing the EIS was focused on the following aspects: -

- Bio-diversity – Chapter 6 and appendices;
- Soils, Water and Hydrogeology – Chapter 7 and appendices;
- Population – Chapter 8 and appendices;
- Air Quality – Chapter 9 and appendices;
- Transportation – Chapter 10 and appendices;
- Drainage – Chapter 11 and appendices;
- Noise – Chapter 12 and appendices
- Landscape and Visual Impact – Chapter 13 and appendices;
- Cultural Heritage – Chapter 14 and appendices; and
- Climate Change - Chapter 15 and appendices