

Clonburris

A vibrant community offering a new way of living



**Clonburris Strategic
Development Zone (SDZ)
Draft Planning Scheme**

**STRATEGIC ENVIRONMENTAL
ASSESSMENT (SEA)
ENVIRONMENTAL REPORT**

September 2017

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This report has been prepared by Minogue and Associates with all reasonable skill, care and diligence. Information reported herein is based on the interpretation of data collected and has been accepted in good faith as being accurate and valid. This report is prepared for South Dublin County Council and we accept no responsibility to third parties to whom this report, or any part thereof, is made known. Any such party relies on the report at their own risk.

1.0 Introduction

As the specified Development Agency, South Dublin County Council has prepared a Draft Planning Scheme for lands at Balgaddy -Clonburris in accordance with Part IX of the Planning and Development Acts 2000 – 2010 (as amended) and the Planning and Development (Strategic Environmental Assessment) Regulations 2004-2011.

This is the Environmental Report for the Strategic Environmental Assessment (SEA) of the Draft Planning Scheme for lands at Balgaddy –Clonburris (hereafter called SDZ Planning Scheme). The purpose of SEA is to formally and systematically evaluate the likely significant effects of implementing a plan or programme, in this instance the SDZ Planning Scheme. The report identifies the significant environmental effects of the plan on the environment and where significant effects are identified, recommends appropriate mitigation measures to avoid or reduce such effects. SEA is an iterative process and has informed and influenced the preparation of the SDZ Planning Scheme, particularly through avoiding areas of greatest environmental sensitivity.

This Environmental Report for the Draft SDZ Planning Scheme, forms part of the SEA process, documents the SEA process and is the key consultation document in the SEA process and facilitates interested parties to comment on the environmental issues associated with the plan. This Environmental Report has been prepared under the Planning and Development (Strategic Environmental Assessment) Regulations 2004 (S.I 436 of 2004).

1.2 Scale, nature and location of development

On 15th December 2015, the Government ordered the designation of approximately 280 hectares of land at Clonburris, as a site for the establishment of a Strategic Development Zone (SDZ). Order 2015 (S.I. No. 604 of 2015) established and extended the designated area for Balgaddy-Clonburris SDZ. A revised Planning Scheme must be made for the designated area not later than 2 years after the making of the Order. Under the Designation of Strategic Development Zone: Balgaddy – Clonburris, South Dublin County Order 2015, the lands which are deemed to be of economic and social importance to the state, are:

“designated as a site for the establishment of a strategic development zone in accordance with the provisions of Part IX of the Act for residential development and the provision of schools and other educational facilities, commercial activities, including employment office, hotel, leisure and retail facilities, rail infrastructure, emergency services and the provision of community facilities as referred to in Part III of the First Schedule to the Act, including health and childcare services.”

A Draft Planning Scheme consists of a written statement and a plan indicating the manner in which a site to which the scheme relates is to be developed, including:

- The types of development which may be permitted to establish on the site.
- The extent of any such proposed development.
- Overall design criteria proposals including maximum heights, the external finishes of structures and their general appearance and design.
- Transportation proposals including public transportation, the roads layout, the provision of parking spaces and traffic management.

- Service provision proposals including the provision of waste and sewerage facilities and water, electricity and telecommunications services, oil and gas pipeline.
- Proposals relating to minimising any adverse effects on the environment including the natural and built environment and on amenities of the area,
- Where the scheme provides for residential development, proposals relating to the provision of amenities, facilities and services for the community, including schools, crèches, and other education and childcare facilities.

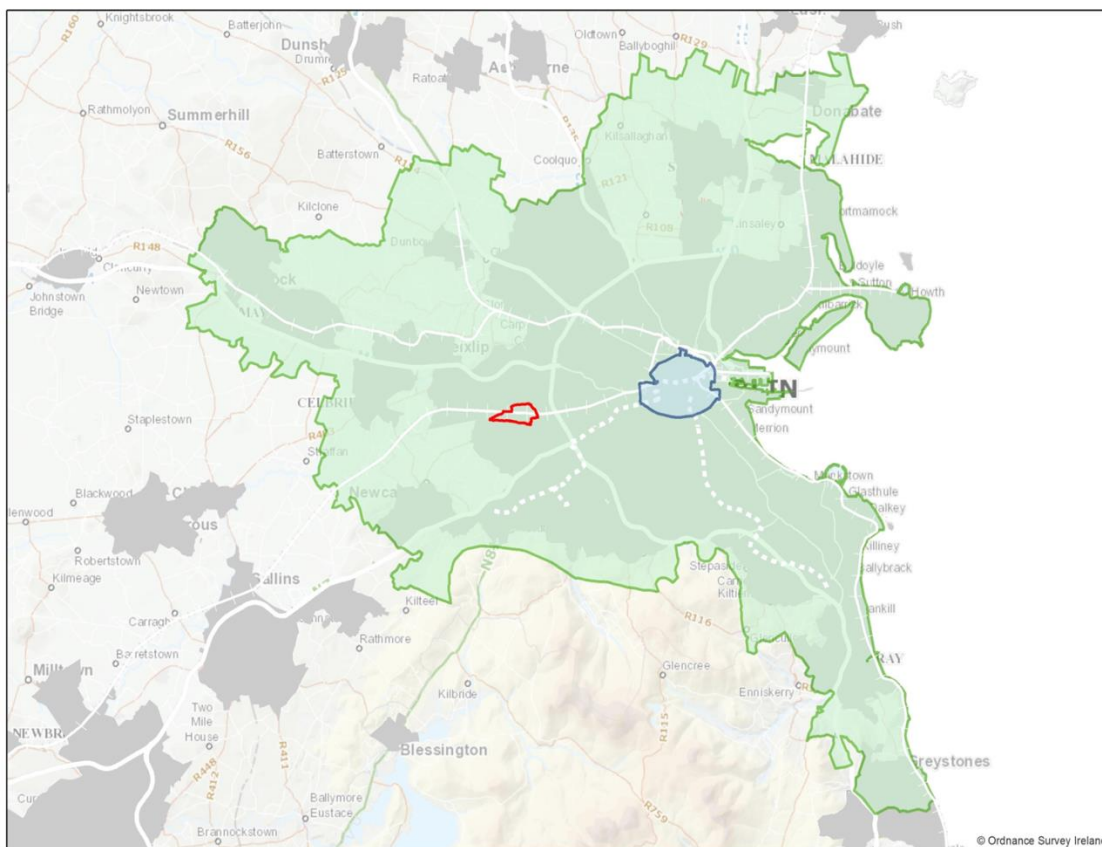
The Planning Scheme is made either by elected members of the Planning Authority or after an appeal process to An Bord Pleanála. Development within an SDZ requires planning permission and has to be granted permission where the proposed development is consistent with the Planning Scheme. There is no appeal procedure on an application for development within an SDZ.

At a strategic level, the development of the SDZ lands will deliver housing to meet growth targets in both the Dublin Metropolitan area and South Dublin County and will align with the Planning and Development (Housing) and Residential Tenancies Act 2016 and 'Rebuilding Ireland – Action Plan for Housing and Homelessness' (July 2016), to facilitate the expedient delivery of affordable new housing in the Dublin Region, catering for high quality design and a range of dwelling type, size and residential tenure. The purpose of an SDZ Planning Scheme is to ensure the delivery of residential and commercial / economic development together with supporting infrastructure and facilities in a sustainable manner on a strategic site – a sustainable community rather than solely a housing or commercial development. The Core Strategy in the County Development Plan 2016-2022 envisages approximately 8,000 units within the SDZ lands over the lifetime of the County Development Plan

The making of an SDZ Planning Scheme for these lands would revoke the existing SDZ Planning Scheme and Local Area Plan, for adjoining lands, both of which were adopted in 2008. The Local Area Plan 2008 expired in April 2014. The existing SDZ Planning Scheme will remain in place until such time as superseded by the new Planning Scheme for the area.

Figure 1 below shows the outline of the Balgaddy – Clonburris SDZ lands within the wider context of South Dublin County.

Figure 1 Location of SDZ Planning Scheme in Greater Dublin (source: National Transport Authority)



1.3 SEA Environmental Report

Regulations contained in Schedule 2B of Statutory Instrument (S.I.) 436 of 2004(as amended) details the information to be contained in an Environmental Report. The following Table 1.lists the information required and details where this information is contained in this Environmental Report.

Table 1 Information required to be contained in an Environmental Report.

Schedule 2B of Statutory Instrument 436 of 2004	Addressed in this SEA ER
(a) an outline of the contents and main objectives of the plan and relationship with other relevant plans	Chapter One Introduction and Chapter Two Methodology outlines contents and main objectives; Chapter Three details the relationship with other relevant plans
(b) the relevant aspects of the current state of the environment and the likely evolution thereof without implementation of the plan	Chapter Four Baseline Environment provides this information
(c) the environmental characteristics of areas likely to be significantly affected	Chapter Four Baseline Environment provides this information
(d) any existing environmental problems which	Chapter Four Baseline Environment provides this

Schedule 2B of Statutory Instrument 436 of 2004	Addressed in this SEA ER
are relevant to the plan including, in particular, those relating to any areas of a particular environmental importance, such as areas designated pursuant to the Birds Directive or Habitats Directive	information
(e) the environmental protection objectives, established at international, European Union or national level, which are relevant to the plan and the way those objectives and any environmental considerations have been taken into account during its preparation	Chapter Five: SEA Objectives provides this information
(f) the likely significant effects on the environment, including on issues such as biodiversity, population, human health, fauna, flora, soil, water, air, climatic factors, material assets, cultural heritage including architectural and archaeological heritage, landscape and the interrelationship between the above factors	Chapter Seven, Significant Effects on the Environment provides this information
(g) the measures envisaged to prevent, reduce and as fully as possible offset any significant adverse effects on the environment of implementing the plan	Chapter Eight, Mitigation Measures provides this information
(h) an outline of the reasons for selecting the alternatives dealt with, and a description of how the assessment was undertaken including any difficulties (such as technical deficiencies or lack of know-how) encountered in compiling the required information	Chapter Six, Alternatives Considered provides this information and difficulties encountered are listed at the end of Chapter Two, Baseline Environment.
(i) a description of the measures envisaged concerning monitoring of the significant environmental effects of implementation of the plan	Chapter Nine, Monitoring provides this information
(j) a non-technical summary of the information provided under the above headings	This is provided as a separate document to this Environmental Report but is also available

1.4 Report Preparation

The SEA Team worked with the SDCC Planning team and other specialists including Scott Cawley (Screening for Appropriate Assessment) and JBA (Surface Water and Flood Risk). The following consultants prepared this SEA ER:

- Ruth Minogue MCIEEM, AILI, (BSoc Sc) Social Anthropology, University of Manchester 1996, MA (Econ) Environment and Development, University of Manchester 1998, Dip Field Ecology, University College Cork 2003, ongoing CPD including certificate in Health Impact Assessment (2012) and diploma in Planning and Environmental Law (ongoing Kings Inns);

- Pat Doherty MCIEEM, MSc in Applied Environmental Science (Ecology), University College Dublin, 2003; BSc (Honours) in Environmental Earth Science, University of Wales, Aberystwyth, 2000; ongoing CDP including Habitat Assessment (NVC) and flora and fauna identification through IEEM;
- Dr Ronan Hennessey, Ph.D Earth & Ocean Sciences, NUI Galway, Higher Diploma in applied Remote Sensing and GIS, NUI Maynooth, B.Sc Earth Sciences, NUI Galway, and
- Michael Cregan, Diploma in Landscape Architecture (Edinburgh University), B.Agr.Sc. (Forestry) (University College Dublin) and M.Agr.Sc (Urban Landscape Planning) (University College Dublin).

2.0 Methodology

2.1 Introduction

This chapter presents the SEA methodology in detail and outlines the steps required for SEA. The methodology used to carry out the SEA of the plan reflects the requirements of the SEA regulations and available guidance on undertaking SEA in Ireland, including:

- SEA Methodologies for Plans and Programmes in Ireland – Synthesis Report Environmental Protection Agency (EPA), 2003;
- Implementation of SEA Directive (2001/42/EC) Assessment of the Effects of Certain Plans and Programmes on the Environment – Guidelines for Regional Authorities and Planning Authorities - published by the Department of the Environment, Heritage and Local Government, 2004;
- Planning and Development (Strategic Environmental Assessment) Regulations 2004 (SI 436 and SI 435 of 2004);
- Planning and Development (Strategic Environmental Assessment) Regulations 2011 (S.I. No. 201 of 2011);
- Planning and Development (Environmental Assessment of Certain Plans and Programmes) (S.I. No 200 of 2011);
- SEA Process Checklist Consultation Draft 2008, EPA 2008;
- Circular Letter PSSP 6/2011 Further Transposition of EU Directive 2001/42/EC on Strategic Environmental Assessment;
- Guidance on integrating climate change and biodiversity into Strategic Environmental Assessment European Union 2013;
- SEA Resource Manual for Local and Regional Authorities, Draft Version, 2013;
- Integrating Climate Change into Strategic Environmental Assessment in Ireland – A Guidance Note, EPA, 2015 and
- Developing and assessing alternatives in Strategic Environmental Assessment, (EPA, 2015).

2.2 Stages in the SEA Process

The steps involved in SEA are as follows:

- Screening (determining whether or not SEA is required).
- Scoping (determining the range of environmental issues to be covered by the SEA).
- The preparation of an Environmental Report (**current stage**)
- The carrying out of consultations.
- The integration of environmental considerations into the Plan or Programme.
- The publication of information on the decision (SEA Statement).

2.2.1 Screening

The SEA Regulations state that SEA is mandatory for certain plans while screening for SEA is required for other plans that fall below the specified thresholds. SEA is mandatory for all SDZ Planning Schemes, therefore the planning scheme has progressed to the next stage in the SEA Process –Scoping. An overview of this is provided below.

2.2.2 Scoping

The purpose of the SEA Scoping report is to identify the scope of the SEA and ensure that relevant data and environmental topics are included in the SEA. The Scoping report was issued to the statutory environmental authorities consultees on 16th August 2016 for a four week period with a deadline for receipt of submissions of 14th September 2016.

The table below summarises the main issues raised by consultees and the SEA response to same. Please note that pre-draft consultation was also undertaken by SDCC and the list of issues identified through this process also informed the scope of the SEA.

Table 2 Scoping Submissions received.

Consultee	Key Issue Raised	SEA Response
Cian O' Mahony, Scientific Officer, SEA Section Office of Evidence and Assessment. Environmental Protection Agency, Regional Inspectorate, Inniscarra, County Cork	We acknowledge the identification of key issues to be considered in preparing the SEA and the Plan, contained in the Scoping Issues Paper. The Plan should provide appropriate mitigation measures to address these potential environmental issues and remain consistent with the County Development Plan and Regional Planning Guidelines.	Noted, and this will inform overall assessment approach.
	A number of key aspects to be considered are outlined below and should be taken into account in the draft Plan and SEA.	Agreed, these will be assessed and integrated in the plan preparation and SEA process.
	Key additional plans/programmes are provided and attached in the submission; these include: <ul style="list-style-type: none"> National Planning Framework Regional Spatial and Economic Strategy (to commence) Irish Water Capital Investment Programme National Transport Authority Greater Dublin Area Draft Transport Strategy Climate Change Sectoral Adaptation Plans Eastern-Midlands Regional Waste Management Eastern CFRAMS and associated relevant Flood Risk Management Plan (and SEA) WFD River Basin Management Plan (Second cycle currently underway) 	Noted and will be considered in Chapter Three of this SEA ER and Appendix A.
Green Infrastructure / Blue	We note that in excess of 30 km of good quality hedgerow/treeline and associated habitats exists within the Plan. We acknowledge the recommendations of the	Noted, and agreed. This data will be used in the SEA, particularly

Consultee	Key Issue Raised	SEA Response
Infrastructure	<p>Ecological Survey carried out in 2015, which recognises the need to retain and integrate existing green infrastructure, where possible, into the Plan to help maintain and conserve important biodiversity-corridors and associated habitats in implementing the Plan. The Plan should implement a coordinated and consistent approach to protecting key ecological corridors within and adjacent to the plan area</p> <p>We also note and acknowledge the comments included from the NPWS, as presented in Table 4 –Main Environmental Issues raised through public submissions, relating to biodiversity and in particular, recommendations in relation to potential marina-related considerations.</p>	<p>Chapter Four and considered through the plan preparation process.</p> <p>Noted.</p>
Critical Service Infrastructure	<p>The Plan should ensure that development within the Plan area is aligned with the ability to provide the required critical service infrastructure (drinking water, wastewater, waste etc.). A clear commitment should be provided, to collaborate with Irish Water and other key stakeholders, in order to ensure the sustainable development of the Plan area.</p> <p>The attached integration document sets out the key environmental issues, as relevant and appropriate, to be taken into account in the preparation of the SEA and Plan. Further comment on the Plan may be provided upon receipt of the Draft Environmental Report and Plan and associated documents during the next statutory consultation phase of the SEA Process</p> <p>Scoping Process Guidance</p> <p>Guidance on the SEA Scoping Process, including an SEA Pack, Integration Guidance, SEA Checklist, SEA Spatial Information Sources and guidance on Integrating Climate Change into SEA (EPA, 2015) and Developing and Assessing Alternatives in SEA (EPA, 2015) is available on the EPA website and should be considered in the preparation of the SEA.</p> <p>We also refer you to recently published guidance ‘Guidance of Local Authority Adaptation Strategy Development Guidelines’ (EPA, 2016) that should also be considered in preparing the SEA and the Plan.</p>	<p>Noted, and agreed; this is a key consideration in the plan preparation and SEA process. Chapter Four will describe this infrastructure.</p> <p>Noted.</p> <p>Noted; these guidance documents are being used to inform the SEA process.</p>
GIS	The EPA has launched a new application for the purposes of Strategic Environmental Assessment (SEA) for public	Noted.

Consultee	Key Issue Raised	SEA Response
	authorities This may be used to inform the SEA screening and scoping stages for Plans and Programmes with particular reference in the first instance to the land use sector, though it is also applicable to other sector plans. It may be accessed via www.edenireland.ie	
Environmental Authorities	Under the SEA Regulations (S.I. No. 436 of 2004), as amended by S.I. No. 201 of 2011, notice should also be given to the following: <ul style="list-style-type: none"> • The Minister for the Environment, Community & Local Government • Minister for Agriculture, Marine and Food, and the Minister for Communications, Energy and Natural Resources, • the Minister for Arts, Heritage and Gaeltacht Affairs, and • Any adjoining planning authority whose area is contiguous to the area of a planning authority which prepared a draft plan, proposed variation or local area plan. 	Noted.
Integration of Environmental Considerations	List of detailed guidance provided as well as data sources	These are noted and will be used as appropriate.
	The Plan should be consistent with key relevant higher level plans / programmes in the planning hierarchy (at a regional and national level) and be set in the context of national SEA Regulations, Planning & Development Regulations and associated DECLG Guidelines including Implementation of SEA Directive (2001/42/EC): Assessment of the Effects of Certain Plans and Programmes on the Environment – Guidelines for Regional Authorities and Planning Authorities (DECLG, 2004) and the Development Plans - Guidelines for Planning Authorities (DECLG, 2007).	Noted and agreed, see Chapter 3 and Appendix A for discussion of relationship of plan to other plans, policies and programmes.
	The Plan should ensure that the natural resources and environmental conditions that are fundamental to the economic and social wellbeing of future generations are protected and are not degraded or exhausted. Four key environmental challenges for Ireland have been identified in Ireland’s Environment 2012 (EPA, 2012) which should be taken into account in the Plan. There are as follows: Valuing and Protecting our Natural Environment, Building a Resource-Efficient Low-Carbon Economy, Implementing Environmental Legislation and Putting the Environment at	The four key challenges identified will inform the scope of the SEA and be highlighted as key themes in Chapter 4 Baseline Environment. Where applicable, these shall also be reflected in the SEOS.

Consultee	Key Issue Raised	SEA Response
	<p>the Centre of our decision making),</p> <p>Section II of Ireland's Environment 2012 describes the six key thematic areas which should be considered and assessed in the Plan.</p> <p>These are Greenhouse Gases and Climate Change, Air Quality (and Transboundary Air Emissions), Water, Sustainable Resource Use, Consumption and Waste, Nature and Biodiversity and Land & Soil. The Plan should consider how to address the challenges above, taking into account the thematic areas described, in order to ensure proper planning and sustainable development is promoted in the lifetime of the Plan. The EPA also has available as reference the Irelands Environment section on its website. This provides an overview of key issues in thematic areas and links to environmental indicator data.</p>	<p>Noted, and will be considered in Chapter Four of the SEA ER.</p> <p>Note the findings of the more recent State of Ireland's Environment Report 2016 will also be referenced as appropriate.</p>
	<p>In addition to the high level goals and challenges described above, the EPA has summarised the key environmental aspects which should be incorporated, as appropriate, in the preparation of the SEA and Draft Plan.</p>	<p>As above.</p>
Water	<p>Support the Provision of a Safe and Secure Drinking Water Supply</p> <p>In considering additional zoning/development and growth of settlements within the Plan area, it is critical that development be closely linked to the ability to provide a safe and secure supply of drinking water and related critical service infrastructure. In this context, the Plan should include a commitment to collaborate with Irish Water and other relevant stakeholders, in the provision of an adequate and appropriate drinking water supply</p>	<p>Noted, and agreed.</p>
	<p>Support the Provision of Adequate and Appropriate Waste Water Treatment</p> <p>As referred to in the Water Quality in Ireland 2010 – 2012 (EPA, 2015), one of the key causes of water pollution is from point sources including discharges from waste water treatment plants. The need to provide and maintain adequate and appropriate wastewater treatment infrastructure to service zoned lands and developments over the lifetime of the Plan should be included as a specific Policy/Objective in the Plan.</p>	<p>Noted, and agreed.</p> <p>This is a key consideration in the plan and SEA preparation process.</p>

Consultee	Key Issue Raised	SEA Response
	Where agglomerations with treatment or poorly performing (or at capacity) treatment plants within the Plan area are highlighted in the Focus on Urban Waste Water Discharges in Ireland Report for 2014 (EPA, 2015), the Plan should include a commitment to support the provision of appropriate measures to address these issues as a priority, in collaboration with Irish Water. The Plan should also include as appropriate, measures to ensure that combined storm water overflows, sewers and trade effluent in the area covered by the Plan is also managed properly.	
Water Framework Directive	Protecting our valuable surface and ground water resources is of vital importance to protect both human health and provide for a healthy environment. The Plan should provide clear commitments to protect surface water, groundwater and coastal/estuarine resources and their associated habitats and species, including fisheries within and adjacent to the Plan area.	Agreed and will form part of the plan and SEA commitments.
	The Plan should also ensure that any specific relevant objectives and measures for individual water bodies, within the Plan area as set out in the existing relevant Water Framework Directive River Basin Management Plan, are provided for in order to ensure water quality is protected/improved/maintained.	Noted, agreed and will inform monitoring of SEA ER.
	The European Union (Water Policy) Regulations 2014 (S.I. No. 350 of 2014) sets out the roles and responsibilities of the various stakeholders and the associated requirements in relation to river basin management planning and should be integrated as appropriate. These responsibilities should be reflected in the Plan and the associated environmental monitoring.	Noted and will be reflected in the SEA and plan.
	Protection of Groundwater Resources Groundwater aquifers form important sources of drinking water both locally and regionally.	Noted and will be considered in the SEA and plan preparation process.
Groundwater	Plan should also include a commitment to comply with the European Communities Environmental Objectives (Groundwater) Regulations 2010 (S.I. No. 9 of 2010).	Noted, agreed and will be integrated as appropriate in SEA and plan preparation.
Protection and Management of Bathing Waters	The obligation to protect bathing waters within (and adjacent to) the Plan area should also be reflected in the Plan.	Noted, will be considered as appropriate.

Consultee	Key Issue Raised	SEA Response
Conservation of Water Resources	The Plan should include an Objective/Policy promoting the need for the conservation of water resources and also the need for detection/mitigation of infrastructural leakages	Noted.
Flood Prevention and Management	The Plan should fully comply with The Planning System and Flood Risk Management - Guidelines for Planning Authorities (OPW/DEHLG, 2009).	Noted, and agreed. A Strategic Flood Risk Assessment and Surface Water Strategy are being prepared for the scheme and will inform the plan preparation and SEA. See Chapters Four, Seven and Eight of the SEA ER.
	The Plan should also promote the development, where appropriate, of adaptation measures to account for the likely increased risk of flooding due to climate change within the Plan area, including implementation of adequate and appropriate Sustainable Urban Drainage Systems. Additionally, the Plan should provide for protection, management, and as appropriate, enhancement of existing wetland habitats where flood protection/management measures are necessary.	See above.
Biodiversity, Flora and Fauna	Plan should include clear Policies/Objectives to conserve and protect all designated sites within and adjacent to the Plan area (including the habitats and/or species for which they have been selected, or which they support), and should also promote the protection of undesignated sites and local biodiversity features. The Plan should also promote the need to protect wider aspects of biodiversity including ecological corridors / linkages / green infrastructure, areas of important local biodiversity, the provision of buffer zones between	Noted, agreed. Noted, this is a key consideration in the SEA and plan preparation process.
	Plans should be supported / informed by available habitat mapping (including wetland mapping) and other ecological surveys as relevant. The Plan should refer to and reflect the relevant commitments in Ireland's National Biodiversity Plan – Actions for Biodiversity 2011-16 (DAHG, 2011-2016)	Noted, Ecological Survey of 2015 is informing plan and SEA/AA screening.
Appropriate Assessment	The Plan should promote the application of the guidance set out in the DECLG Publication 'Appropriate Assessment	Noted, agreed

Consultee	Key Issue Raised	SEA Response
	of Plans and Projects in Ireland- Guidance for Planning Authorities' (2009; revision 2010), in relation to the requirements of Article 6 of the Habitats Directive. The Plan should include a commitment to ensure compliance with the requirements of Article 6 of the Habitats Directive.	
Noise	The objectives of EU and Irish noise legislation is "to avoid, prevent or reduce harmful effects on human health and the environment as a whole", and this includes noise nuisance. In this context, as appropriate, the Plan should promote the implementation of Environmental Noise Directive and associated national regulations.	Noted, agreed. Submissions at pre-draft have highlighted this issue. See Chapter Four, Seven and Eight of the SEA ER.
Air Quality and Climate change adaptation.	The need to protect and improve, (as appropriate), air quality within the Plan area, particularly in areas zoned for increased urban and transport related development should be highlighted in the Plan. The integration of climate change adaptation and mitigation measures should be reflected in the Plan, at the appropriate level either through relevant land use plans and/or specific sectoral plans	Noted. As above.
Waste Management	The Plan should promote the integration of land use zoning and development to existing and planned availability of waste infrastructure and capacity. The Plan should also refer to and incorporate the relevant aspects of the relevant Regional Waste Management Plan.	Noted, and agreed. This will be assessed through the SEA process. Unauthorised waste activity may be an issue that has been identified at pre-draft stage submission.
Radon	Where significant concentrations of radon occur within the Plan area, these should be taken into account in the Plan or associated development control measures, as appropriate	Will be addressed as appropriate.
Energy Conservation and Renewable Energy	In seeking to provide for and support the provision of a low carbon economy, the Plan should, where appropriate, promote the use of renewable energy sources (e.g. solar, wind, geothermal etc.) within the Plan area, at appropriate locations.	Noted and agreed. This is a key element that is being considered in a specific research study being undertaken by Element Energy in tandem with the planning scheme

Consultee	Key Issue Raised	SEA Response
		preparation and SEA process.
Landscape	The Plan should provide for the protection of designated scenic landscapes, scenic views, scenic routes and landscape features of national, regional, county and local value. The Plan should also take into account the landscape character adjoining the Plan area. Visual linkages between established landmarks and landscape features and views should be taken into account when land is being zoned and when individual development proposals are being assessed / considered. The National Landscape Strategy (DECLG, 2015) should be taken into account and integrated as appropriate into the Plan.	Noted and agreed. County and local scale LCA will inform this issue through plan preparation and SEA process.
Geology	The Plan should protect any designated Geological and Geomorphological NHAs/pNHAs, which may be present/designated within or adjacent to the Plan area in consultation with the Geological Survey of Ireland	Noted, will be assessed through SEA process and addressed as appropriate.
Transport	In seeking to support achieving a low carbon economy, it is important to consider and manage transport related emissions within the Plan area. The Plan should promote, and as appropriate provide for sustainable modes of transport. The Department of Transport, Tourism and Sport Report 'Smarter Transport – A Sustainable Transport Future' (DTTS, 2009) should be reviewed in the context of possible initiatives which could be included as objectives within the Plan. Promoting the development of traffic management measures to reduce the potential for traffic congestion and associated vehicular emissions should be considered. In particular, it would be useful to prepare (and review existing) Integrated Traffic Management Plans, where relevant and appropriate, for the existing urban areas and proposed new urban developments to consider and address the short, medium and long-term traffic management requirements within the Plan area.	Noted. A Transport Assessment is being prepared. Transport and public transport considerations are key elements of the plan preparation process and SEA and will be fully considered and assessed.
Infrastructure and Planning	The Plan should, (when considering additional development proposals), support and promote the provision of adequate and appropriate critical service infrastructure, surface and storm water drainage, public transport, waste management, community services and amenities etc. on a planned and phased basis. The potential impact on human health, habitats and	Noted and agreed, this is a key aim of the Planning Scheme. Noted and agreed, cumulative and in-combination description and impact assessment will give

Consultee	Key Issue Raised	SEA Response
	species of ecological importance, flood risk and water quality should be taken into account in considering proposed additional infrastructure or in proposed upgrading of existing infrastructure.	this theme particular scrutiny through the SEA process. Chapters Four and Seven of the SEA ER will address these points.
	The Plan should highlight that, under the EIA and Planning & Development Regulations, certain projects arising during the implementation of the Plan may require an EIA. It should be noted that projects may also require Appropriate Assessment screening, as required by Article 6 of the Habitats Directive. It should be noted that the EPA's role in relation to EIA relates only to facilities/sites which are licensable by the EPA, namely IPPC, waste water and waste sites.	Noted, and agreed.
Additional data sources	Appendices 1 to 3 list a number of environmental data, planning data sources and high level plans, policies and programmes for additional information	Noted, and will be considered as appropriate, particularly in Chapters Three and Four of the SEA ER.
Michael Murphy Development Applications Unit Dept. of Arts, Heritage, Regional, Rural and Gaeltacht affairs		
	The National Parks and Wildlife Service of the Department welcomes the fact that a recent ecological survey has taken place of the proposed SDZ site and that development will be sensitive to the needs of protected species such as bat species and otters that use the canal and hedgerows, some of which are light sensitive.	Noted.
	In order to ensure protection for protected species outside of designated sites, the Biodiversity Flora and Fauna SEO needs to be amended. As currently proposed the SEO does not include protected species outside of designated sites.	Noted and agreed, SEO shall be amended to reflect protected species outside of designated sites. Please see Chapter Five of the Environmental Report for updated Biodiversity SEO.
	Appendix A should be modified to replace the "Wildlife (Amendment) Act 2000" with "The Wildlife Acts 1976 to 2012" and the text should be amended accordingly.	Noted, amendment has been made in Appendix A.

Consultee	Key Issue Raised	SEA Response
Biodiversity, Flora and Fauna	<p>With regard to the scope of baseline data for the SEA, details of designated sites, flora and fauna can be found at https://www.npws.ie/</p> <p>Where further detail is required on any information on the website, a data request form should be submitted which can be found on the website.</p> <p>Other sources of information relating to habitats and species include that of the National Biodiversity Data Centre (www.biodiversityireland.ie), Inland Fisheries Ireland (www.fisheriesireland.ie), BirdWatch Ireland (www.birdwatchireland.ie) and Bat Conservation Ireland (www.batconservationireland.org). Data may also exist at a County level within the Planning Authority.</p> <p>In addition, when considering existing baseline data, the SEA should take account of any previous ecological studies such as those arising out of the 2009 Oral Hearing including the Biodiversity Study of 2010.</p>	Noted, data sources and themes as well as previous ecological studies included in Chapter Four Baseline Environment.

2.3 Baseline Data

The baseline data assists in describing the current state of the environment, facilitating the identification, evaluation and subsequent monitoring of the effects of the plan. It helps identify existing environmental problems in and around the plan area and in turn these can be quantified (for certain environmental parameters) or qualified. This highlights the environmental issues relevant to each SEA parameter and ensures that the plan implementation does not exacerbate such problems. Conversely this information can also be used to promote good environmental practices and opportunities for environmental enhancement, thereby improving environmental quality where possible.

Baseline data was gathered for all parameters. Additional primary research included ecological surveys, landscape appraisal and surface water strategy were also undertaken and have been used in this SEA ER. Site visits were undertaken by the SEA team in September 2016. Other data was gathered from the SEA ER of the South Dublin Development Plan 2016-2022, Irish Water, the EPA, Met Eireann and other sources as appropriate. Footnotes throughout the document, particularly in Chapter Four present the reference and source.

The SEA has also used a Geographical Information System (GIS) in the following ways:

- To provide baseline information on a range of environmental parameters;
- To assist in assessment of alternatives;
- To help assess in-combination or cumulative impacts, and
- To provide maps to illustrate environmental parameters in the SEA Environmental Report.

The SEA Directive requires that information be focused upon **relevant aspects** of the environmental characteristics of the area likely to be **significantly affected** by the plan and the likely change, both positive and negative, where applicable.

2.4 Consideration of alternatives

The SEA assessed a number of alternative development scenarios during the plan preparation process. The three emerging scenarios were subject to a workshop that assessed each of the scenarios through posing key questions in relation to potential environmental effects associated with same. Further information is provided in Chapter Six, Consideration of Alternatives.

2.5 Approach to assessment of significant environmental impacts

The assessment described within this Environmental Report aims to highlight the potential conflicts, if they are present, between the aims and proposals contained in this draft Planning Scheme with the Strategic Environmental Objectives. Furthermore the assessment examines the potential impact arising from the plan's implementation on sensitive environmental receptors. Key to assessing the above is setting a specific set of environmental objectives for each of the environmental topics. The objectives are provided in Chapter Five and include all aspects of the environment such as Cultural heritage, Population and Human health, and Biodiversity, Flora and Fauna.

The SEA, Habitats Directive Assessment process and Planning Scheme formulation is an iterative process and environmental considerations have informed all stages of the preparation of the plan, in order to avoid or minimise significant adverse environmental impacts. However, where the environmental assessment identifies significant adverse effects, consideration is given in the first instance to preventing such impacts; where this is not possible for stated reasons, to lessening or offsetting those effects.

In accordance with SEA guidelines the assessment identifies 'impact' under three headings.

- Quality of Impact
- Significance of Impact
- Duration of Impact.

This initial stage aims to ascertain the quality, if any, of the potential impact. Each of the Plan's aims and proposals have been assessed for their impact and where a neutral impact is noted no further discussion is provided within this report. In this manner, the ER focuses on the negative and positive impacts and proceeds to a commentary on their significance and duration. Thus it is a more robust, more focused approach to understanding the potential impacts associated with the Clonburris SDZ Planning Scheme.

Secondly, where a potential impact is noted, either positive or negative, the significance of impact is addressed. Significance is assessed in terms of the type/scale of development envisaged by the plan and the sensitivity/importance of the receiving environment. Finally where it has been determined that elements of the SDZ Planning Scheme may potentially result in a negative impact on an environmental receptor appropriate level mitigation measures are proposed.

2.6 Mitigation

Section (g) of Schedule 2B of the SEA Regulations requires information on the mitigation measures that will be put in place to minimise/eliminate any significant adverse impacts due to the implementation of the Draft Planning Scheme for the lands at Balgaddy-Clonburris. Chapter Eight of this SEA ER highlights the mitigation measures that will be put in place to counter identified significant adverse impacts due to the Draft Planning Schemes' implementation.

The Draft Planning Scheme has been prepared having regard to the environmental protection objectives contained within the South Dublin County Development Plan 2016-2022. However, some unavoidable residual issues may remain and therefore mitigation measures are required. Chapter Eight details the mitigation measures necessary to prevent, reduce and, as fully as possible, offset any significant adverse impacts on the environment of implementing the draft Planning Scheme.

2.7 Monitoring

Article 10 of the SEA Directive sets out the requirement that monitoring is to be carried out of the significant environmental effects of the implementation of the draft Planning Scheme in order to identify at an early stage any unforeseen adverse effects and to be able to undertake appropriate remedial action. Chapter Nine presents the monitoring requirements for the plan, aligned where possible with those of the SEA of the South Dublin CDP 2016-2022.

2.8 Strategic Flood Risk Assessment

The Planning System and Flood Risk Management Guidelines (DoEHLG 2009) provide a methodology to incorporate flood risk identification and management into land use strategies. It also requires the alignment and integration of flood risk into the SEA process. The core objectives of the Guidelines are to:

- Avoid inappropriate development in areas at risk of flooding;
- Avoid new developments increasing flood risk elsewhere, including that which may arise from surface water run-off;
- Ensure effective management of residual risks for development permitted in floodplains;
- Avoid unnecessary restriction of national, regional or local economic and social growth;
- Improve the understanding of flood risk among relevant stakeholders; and
- Ensure that the requirements of EU and national law in relation to the natural environment and nature conservation are complied with at all stages of flood risk management.

Potential flood issues in the plan area are an important consideration in the preparation of the draft Planning Scheme. Therefore the plan has been guided by the information on flood risk currently available and has been subject to a Strategic Flood Risk Assessment by specialist consultants. In addition, overall surface water management has been identified as a key issue and this has also been subject to detailed assessment and a Surface Water Strategy has been prepared by specialist consultants. These findings have been integrated into the SDZ Planning Scheme and this SEA ER (See Chapters Four and Seven in particular).

2.9 Data Gaps

Undertaking the SEA of the planning scheme has required additional primary research to address data gaps, in particular the ecological surveys undertaken over 2015-2016; as well as

the considerable research into surface water management and flood risk. This has contributed significantly to a better understanding of these issues as they relate to the plan area. Data gaps are present in terms of population and human health, though the ongoing output of Census 2016 will assist in filling in DED level data over the short term, particularly for population data.

3.0 Relationships to Plans, Policies and Programmes.

3.1 Introduction

Under the SEA Directive, the relationship between the SDZ Planning Scheme and other relevant plans and programmes must be taken into account. A review of the relevant plans and programmes can be found in Appendix A.

The SDZ Planning Scheme must be considered within the context of a hierarchy of policies, plans and strategies which include international, national, regional and local level policy documents. These documents set the policy framework within which the plan will operate. The South Dublin County Development Plan 2016-2022 (SDCDP 2016-2022) operates as the primary land use framework for the County and the Planning Scheme has equal status to the County Development Plan. The Draft Planning Scheme has been prepared having regard to the policies and objectives outlined within the South Dublin County Development Plan 2016-2022. The key environmental protective objectives and policies of the Planning Scheme are consistent with the County Development Plan.

Appendix A also presents a summary of the legislation, convention and policies presented below.

A list of the key relevant international, national, regional and county policies included in the review are provided below in Section 3.2; Section 3.3 identifies key principles that have informed the SEA process arising from this review.

3.2 Relevant Plans, Policies and Programmes

3.2.1 International

- UN Convention of Biological Diversity, 1992
- The Convention on Wetlands of International Importance (The Ramsar Convention) 1971 and subsequent amendments
- EU Environmental Action Programme to 2020
- SEA Directive - Assessment of the effects of certain plans and programmes on the Environment, (2001/42/EC) 2001
- Environmental Impact Assessment Directive (85/337/EEC) (97/11/EC), 1985 and Environmental Impact Assessment Directive (2014/52/EC)
- EU Biodiversity Strategy to 2020
- EU Directive on the Conservation of Wild Birds, (2009/147/EC) 1979. Known as the Birds Directive
- EU Directive on the Conservation of Natural Habitats and of Wild Flora and Fauna, (92/43/EEC), 1992 known as the Habitats Directive
- European Communities (Birds and Natural Habitats) Regulations 2011
- EU Green Infrastructure Strategy 2013
- The Stockholm Convention 2001
- EU Soil Thematic Strategy
- Water Framework Directive (2000/60/EC) as amended
- Floods Directive (2007/60/EC)
- The Drinking Water Directive (DWD), (98/83/EC) 1998

- Groundwater Directive, (2006/118/EC) 2006
- EC Bathing Water Quality Directive, (2006/7/EC) 2006
- Kyoto Protocol
- The Ambient Air Quality and Cleaner Air for Europe (CAFE) Directive
- EU Directive on Waste, (2006/12/EC), 2006
- EU Directive on Waste (2008/98/EC), 2008
- EU Urban Waste Water Treatment Directive (91/271/EEC), 1991
- Directive 2009/28/EC on the promotion of the use of energy from renewable sources
- European Convention on the Protection of the Archaeological Heritage, 1992 (The Valletta Convention)
- Convention for the Protection of the Architectural Heritage of Europe, 1985 (Granada Convention)
- The European Landscape Convention 2000
- The Aarhus Convention
- Environmental Liability Directive 2004/35/EC

3.2.2 National

- National Landscape Strategy (2015-2025)
- National Biodiversity Plan (2011-2016)
- National Planning Framework (under preparation)
- Water Framework Directive River Basin Management Plans (2nd cycle in preparation)
- National Mitigation Plan (in preparation)
- Sectoral Climate Adaptation Plans (in preparation)
- Our Sustainable Future A framework for sustainable development in Ireland (2012)
- The National Spatial Strategy 2002 -2020
- Actions for Biodiversity 2011 – 2016, Ireland's 2nd National Biodiversity Plan
- The Wildlife Acts 1976 to 2012
- National Heritage Plan (2002)
- Guidelines for Planning Authorities on Sustainable Residential Development in Urban Areas (Cities, Towns & Villages) (2009)
- Geological Heritage Sites Designation (under the Wildlife Amendment Act 2000)
- Water Services Act (2007)
- Water Services (Amendment) Act (2012)
- Irish Water Services Strategic Plan SEA and AA (2015)
- Irish Water Capital Investment Programme (2017-2021) including forthcoming planning application for Ringsend WWTP upgrade.
- Waterways Ireland Heritage Plan 2014-2020
- The Planning System and Flood Risk Management Guidelines (and Technical Appendices) for Planning Authorities (DoEHLG, OPW), 2009
- National Climate Change Strategy (2007-2012)
- Review of Ireland's climate change policy and Climate Action and Low Carbon Bill 2013
- Smarter Travel, A Sustainable Transport Future, A New Transport Policy for Ireland 2009-2020
- National Monuments Act 1930 with subsequent amendments
- Architectural Heritage Protection - Guidelines for Planning Authorities (2011)
- National Inventory of Architectural Heritage (NIAH)
- Draft Landscape and Landscape Assessment Guidelines, (2000)

- Planning and Development Act 2000 (as amended).
- Planning Policy Statement, 2015

3.2.3 Regional and County

- Regional Planning Guidelines 2010-2020- to be replaced by Regional Economic and Spatial Strategies
- Eastern Catchment and Flood Risk Assessment and Management Plan (draft)
- Eastern River Basin District Management Plan (second cycle in preparation)
- Eastern-Midlands Regional Waste Management Plan 2015
- Greater Dublin Area Transport Strategy 2016-2035
- South Dublin County Development Plan 2016-2022
- South Dublin Local Economic and Community Plan 2016
- South Dublin Local Biodiversity Action Plan 2010 – 2015 (replacement plan in preparation).

3.3 Key principles identified from review.

Following the review of the relationship between the above plans, policies and programmes (see also Appendix A), the following key principles have been identified and this have been considered through the SEA and helped to inform the Planning Scheme development.

Table 3 Principles from plan, policy and programme review.

SEA Topic	Principles/Implications for the Planning Scheme and SEA
Biodiversity, Flora and Fauna	<ul style="list-style-type: none"> • Conserve and enhance biodiversity at all levels • Avoid and minimise effects on nationally and internationally rare and threatened species and habitats through sensitive design and consultation, recognising ecological connectivity where possible • Facilitate species and habitat adaption to climate change • Avoid and minimise habitat fragmentation and seek opportunities to improve habitat connectivity • Ensure careful consideration of non-native invasive and alien species issues particularly as they relate to waterbodies such as the Grand Canal and Griffeen River
Population and Human Health	<ul style="list-style-type: none"> • Provide for sustainable communities with key services • A high quality environment to live, work and play in • Avoid pollution and environmental health impacts (noise and air quality) through mitigation and design
Water	<ul style="list-style-type: none"> • Maintain and improve water quality • Avoid and minimise effects on natural processes, particularly natural flood management and catchment processes through sensitive design and consultation • Adapt and improve resilience to the effects of climate change, particularly flood risks associated with extreme weather

	<ul style="list-style-type: none"> • Minimise water consumption/ abstractions • Design SUDS to facilitate ecological improvement/ enhancement where possible
Soil and Geology	<ul style="list-style-type: none"> • Conserve soil resources where possible and avoid waste of soil resources • Maintain hydrological integrity of wetlands • Maintain productive capacity and prevent erosion of soils • Ensure careful consideration of non-native invasive and alien species issues
Material Assets	<ul style="list-style-type: none"> • Avoid and minimise waste generation • Maximise re-use of material resources and use of recycled materials • Minimise energy consumption and encourage use of renewable energy • Promote sustainable transport patterns and modes where possible. • Plan and provide for sustainable water management and wastewater treatment
Air Quality and Climate	<ul style="list-style-type: none"> • Adapt and improve resilience to the effects of climate change • Encourage reduction in greenhouse gases through transport, energy, built development.
Cultural Heritage	<ul style="list-style-type: none"> • Conserve, preserve and record architectural and archaeological heritage • Avoid and minimise effects on historic environment features through sensitive design and consultation
Landscape	<ul style="list-style-type: none"> • Enhance the landscape character of the area through design • Integrate green infrastructure considerations • Improve landscape connectivity to surrounding area
Climate change and sustainability	<ul style="list-style-type: none"> • Adapt and improve resilience to the effects of climate change • Promote local/ sustainable sourcing of materials • Promote sustainable design and innovation to reduce material consumption
Inter-relationships	<ul style="list-style-type: none"> • Maintain and improve the health of people, ecosystems and natural processes • Minimise effects on landscape and historic environment features • Adapt and improve resilience to climate change and extreme weather events • Actively seek to integrate opportunities for environmental enhancement

4.0 Environmental Baseline

4.1 Introduction

Article 5 of the SEA Directive states that the environmental report shall include the information that may reasonably be required taking into account:

- Current knowledge and methods of assessment;
- The contents and level of detail in the plan or programme and its stage in the decision-making process; and
- The extent to which certain matters are more appropriately assessed at different levels in that process in order to avoid duplication of the assessment.

Whilst undertaking new research is not required under the SEA Directive, South Dublin County Council commissioned a number of technical studies of which the following have informed the baseline environmental description provided in this chapter:

- Clonburris Ecological Survey Reports 2015/2016;
- Flood Risk Assessment and Surface Water Management;
- Traffic and Transport Studies; and
- Energy Masterplan.

In addition, particular issues as they relate to the environment have been identified through the pre-draft submission process, as well as the responses to the SEA Scoping Report; these are summarised in the relevant section of this chapter.

Plates 1 to 3¹ below show the current landuses on the SDZ lands.

Plate 1 View of lands occurring at the eastern end (looking west) of the SDZ lands



¹ Plates from FERS 2015 Ecological Survey Report.



Plate 2 View of lands occurring in the middle section of the Clonburris SDZ, above the Kildare Rail-line, looking east illustrating typical habitats present



Plate 3 View from the Adamstown end of the Clonburris SDZ looking east towards Clondalkin

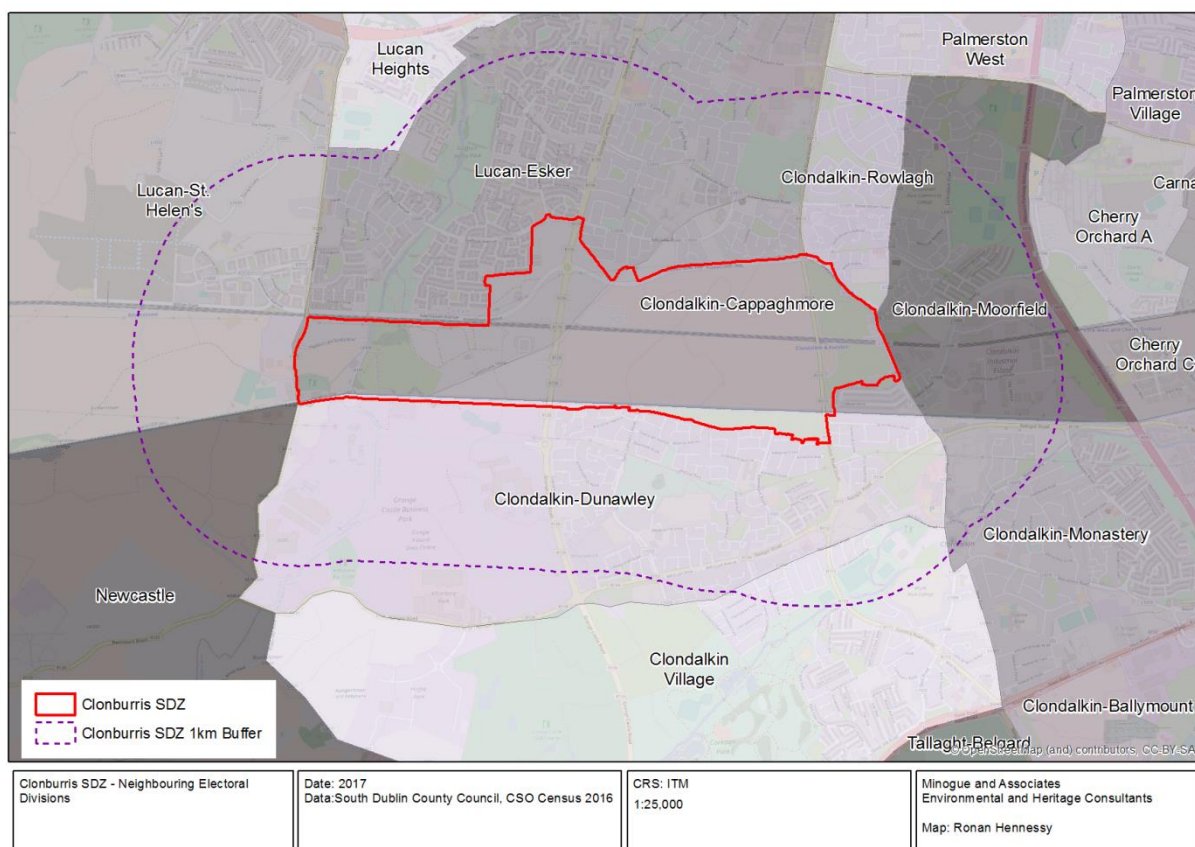
4.2 Population and Human health

This section provides information on the current population, demographic trends and changes in the planning scheme and adjacent DEDs between 2011 and 2016 Census. In addition, information is provided on economic and human health trends in the County. Impacts can arise on people's health and quality of life from a range of environmental factors, often through a combination of environmental impacts such as landuse, water quality, air quality, noise and transport patterns.

The SDZ lands are currently characterised by transitional agricultural landscapes. Despite its location and context between the settled communities of Lucan and Clondalkin, the site has never been developed to any significant degree and retains a largely rural character. In recent years, a primary and secondary school have been constructed on the lands. A number of private residences are located on the lands, together with traveller accommodation constructed by SDCC. There are two train stations constructed within the SDZ - the Clondalkin-Fonthill station is operational, the Kishogue station is constructed but not operational to date.

Figure 2 below presents the SDZ lands and the Electoral Districts (EDs) within and adjacent to these lands. An overview of these EDs based on Census 2016 results are given below. As Figure 2 shows, most of the lands are located within the Clondalkin Cappaghmore ED; the western parts of the lands are located within the larger Lucan Esker ED with a small area south of the Grand Canal included within Clondalkin Dunawley ED. A summary of the 2011 Census findings for these EDs are presented below, Section 4.2.1 presents 2011 data for Clondalkin Cappaghmore in more detail.

Figure 2 Electoral Districts



4.2.1 Population

The 2016 preliminary census data shows that the South Dublin area grew by more than 5% in the period 2011 to 2016, reflecting the growth also recorded in the commuter belt counties of Laois and Meath. The most recent available census data at ED level is from the 2011 census. A summary of key population and housing stock data from this census for the relevant EDs is provided below in Table 4.

Table 4 Electoral Districts 2011 Census Data.

Electoral District		Males	Females
Clondalkin Cappaghmore			
Total Population	2,605	1,144	1,461
Total housing stock	821	Vacant	29
Clondalkin Dunawley			
Total Population	10,877	5292	5585
Total Housing stock	3921	Vacant	17
Lucan Esker			
Total Population	29820	14627	15193
Total housing stock	9863	Vacant	286

4.2.2 Human Health

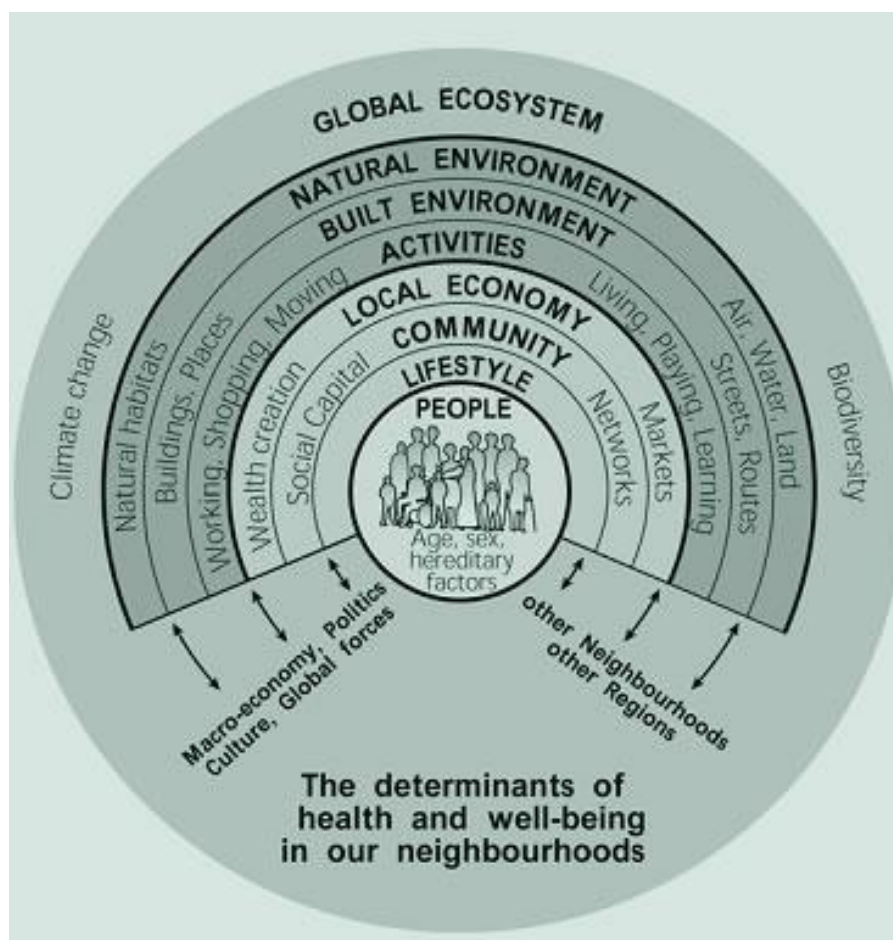
Human health can be determined by social, environmental and economic factors, among others. Human health may be impacted upon in a variety of ways and by a number of environmental receptors such as water, biodiversity, climate, flooding, air and major accidents, etc. The exposure to contaminants or pollutants can have serious implications for human health. Potential impacts on population and human health include inadequate water and wastewater and waste infrastructure, contamination of soils, excessive noise, flooding and poor air quality in areas where there are large volumes of traffic.

The Institute of Public Health states:

‘Where people live affects their health. There are a number of elements of the living environment that influence health including the built environment, travel choices and the communities in which people live. The design, maintenance and location of buildings influence health. Similarly, public spaces and transport networks can facilitate health by providing opportunities for physical activity, social interaction and access to social goods’.

Disadvantaged people are more likely to live in poor quality built environments and have limited access to transport and local amenities supporting healthy choices. Figure 3 below identifies key factors that contribute to human health. This is followed by a summary of the key environmental factors that can effect human health as identified through the SEA Scoping process.

Figure 3 the determinants of health and well being²



Human Health and Noise

Environmental noise is treated in a different way to noise nuisance. A nuisance noise is something that occurs from time to time and is not usually considered to be a feature of life in the local area. For example, a noisy dog or late night parties are short term occurrences. Even if they happen regularly, they are not caused by any long term activities and so they are thought of as nuisance noise. Environmental noise is from long term or permanent sources, like major transport routes and factories. Noise from these sources has a different effect on people and is managed in a different way. The Environmental Noise Directive was written into Irish law in 2006, through The Environmental Noise Regulations (Statutory Instrument No. 140 of 2006). This law relates to the assessment and management of environmental noise. They provide for a common approach intended to avoid, prevent or reduce the harmful effects, including annoyance, due to exposure to environmental noise. These regulations do not apply to nuisance noise which can be dealt with under the Environmental Protection Agency Act.

Noise Action Plans are required under the Environmental Noise Directive (EU 2002/49/EC) transposed in to Irish law by SI 140 of 2006. South Dublin in conjunction with the other three

² The determinants of health and well-being (Barton & Grant 2006)

Dublin local authorities have prepared a plan for 2013-2018 and establishes the measures that the councils intend to take to manage environmental noise exposure. The plan also contains an assessment of possible noise hotspots throughout the area.

In the context of SDZ Planning Scheme, the railway line and existing roads operate as the greatest noise generators. In the above Noise Action Plan, noise from Irish Rail is treated as part of the Dublin agglomeration with the following statement:

“In general, noise exposure levels from rail in the Dublin area are low. ...the number of people exposed to the undesirable night time levels above 55 dB(A) from the Luas is 2200, i.e. 0.2% of the total population. Similarly ...the ...number of people exposed to the undesirable night time levels above 55 dB(A) from the other rail is 2100, i.e. 0.16% of the total population.”

Thresholds for desirable low and undesirable high sound levels in the Noise Action Plan are as follows:

Desirable Low Sound levels • < 50 dB(A) Lnight • < 55 dB(A) Lday

Undesirable High Sound levels • > 55 dB(A) Lnight • > 70 dB(A) Lday

Irish Rail produce noise maps for an average 24 hour daytime and nighttime noise from the Dublin Irish Rail Lines, the main line which traverses the SDZ lands is identified as generating the following noise levels:

Daytime Noise levels are between 55-59 dB(A) for daytime and 45-49dB(A) for night-time. This shows that the daytime noise levels for the main railway line are just above the desirable daytime limits in the Noise Action Plan and well within the desirable low sound levels for night-time.

SDCC has two noise monitoring locations close to the SDZ Planning Scheme:

1. Moyglass Way, Lucan. Residential area with community parks in the locale. The primary source of environmental noise here is the N4 route and the R136 closeby.
2. Deansrath Depot, Deansrath Community Park and residential area, Clondalkin. Sources of environmental noise include traffic on New Nangor Road and the R136 route.

The location of new residential properties, mixed residential/commercial use buildings or noise sensitive premises such as schools or hospitals, adjacent to existing roads, railways, airports, industry or recreational activities can result in significant noise management issues. Noise sensitive locations such as those above have particular requirements for low level noise environments in order to be able to function effectively. A high standard of insulation can be applied to improve noise attenuation in these buildings but this measure is rendered relatively ineffective when windows are opened. It also does not protect the external environment around the noise sensitive location from community/environmental noise. The Noise Action Plan identifies for South Dublin the following noise sensitive locations:

“There are five rivers with associated parklands and walks, two of which contain proposed Natural Heritage Areas, and the Grand Canal with associated green spaces and walking routes which is also a proposed Natural Heritage Area.”³

Human Health and Air Quality

The Air Framework Directive 96/62/EC (CEC, 1996) details how ambient air quality should be monitored assessed and managed. This Directive requires that member states divide their territory into zones for the assessment and management of air quality. South Dublin as part of the Dublin City agglomeration is designated as a Zone A.

The Air Quality Index of health⁴ is based on hourly monitoring data from sites around Ireland and is based on measurements of five air pollutants all of which can harm health. The five pollutants are:

- Ozone gas
- Nitrogen dioxide gas
- Sulphur dioxide gas
- PM2.5 particles and
- PM10 particle

South Dublin located within the ‘Dublin City’ region and achieving an air quality rating of ‘3 – Good’ on 10th May 2017.

The Air Pollution Regulations (2012) were signed into law by the Minister for Environment, Community and Local Government on 31st August 2012. One of the key elements of the regulations has been the designation of new towns as smokeless zones and the expansion of the ban areas in towns that were previously covered under the old regulations. All of the four local authorities in Dublin have a ban on the sale, marketing, distribution and burning of specified fuel i.e. only smokeless fuel allowed

The EPA State of the Environment Report (2016) has further highlighted the role of environmental quality and health and in turn has highlighted the adoption of the newer more stringent World Health Organization guideline values for air quality. The Clean Air Policy Package (EC 2014) involves a move to tackling air emissions at source with potentially tighter air quality standards from 2020 onwards⁵.

Radon

The greatest health risk from radiation in Ireland is caused by radon. It accounts for more than half of the total radiation dose received by the Irish population. As a known carcinogen, in the same category as tobacco smoke and asbestos it is a cause of lung cancer. Up to 250 cases of lung cancer in Ireland every year can be linked to radon. These lung cancer cases are principally

³ Dublin Noise Action Plan 2013-2018 page 35.

⁴ <http://www.epa.ie/air/quality/>

⁵ SEA ER of draft National Mitigation Plan , 2017.

associated with exposure to radon in the home, but exposure in the workplace is also a contributor. In the workplace, the employer must protect the health of workers from this identifiable risk.

Radon is only a problem if it is ignored and some simple, inexpensive and straightforward solutions are available to reduce excessive levels both in the workplace and in the home. The EPA Radon map shows that the SDZ lands are situated within a 10km grid square in which between five and ten per cent of the homes are estimated to be above the Reference Level for Radon.

4.2.3 Existing issues Population and human health.

Through the pre-draft consultation on the planning scheme and the SEA Scoping process a number of issues were raised by consultees in relation to population and human health, and are summarised below:

- Provision of community facilities, public open space, housing and design;
- Transport Network and Public Transport;
- Environmental Health
- Light and Noise pollution associated with the railway
- Repeated incidents of illegal dumping

Transport network issues identified through the submissions process will have implications in relation to local air quality and consideration of greenhouse gasses.

The SEA ER of the SDCDP 2016-2022 identifies traffic emissions as the main area of concern in relation to air pollution; and this is also reflected in the Noise Mapping undertaken as part of the Dublin Agglomeration Action Plan that indicated traffic congestion and movement were the issues of concern regarding noise pollution. The noise monitoring stations closest to the SDZ Planning Scheme at Moyglass Way have exceeded the desirable noise levels from 1st to 10th May 2017 with values recorded of between 65.1 db(A) to 70.8 db (A). Deansrath Depot is within the desirable daytime noise levels for the same period.

The identification of quiet areas which have low noise levels, and maintaining or reducing the existing noise levels, in order to sustain quiet areas is also important. This is of particular relevance to the Grand Canal and Griffeen River areas.

4.3 Biodiversity, Flora and Fauna

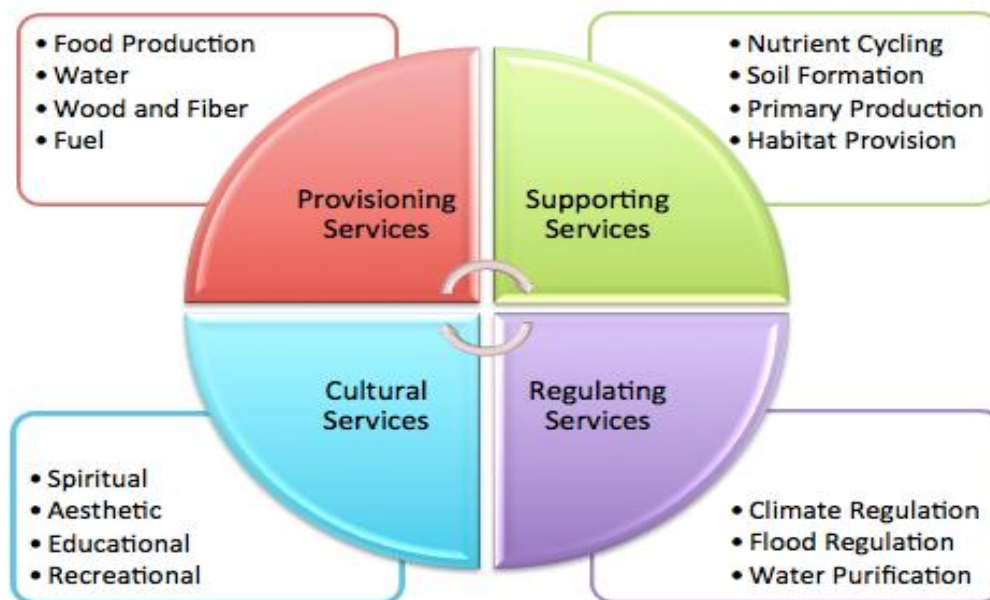
Biodiversity is an integral part of the conservation of our habitats and species and is a measure of the number, variety and variability of living organisms within a given area. The Convention on Biological Diversity (CBD) defines biological diversity as

‘the variability among living organisms from all sources including, inter alia, terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are part; this includes diversity within species, between species and of ecosystems’ (Article 2).

Awareness about the roles and functions of ecosystems has increased in recent years and it can be a useful means to highlight their importance and value services to society. The Economics of Ecosystem Services and Biodiversity (TEEB) study defines ecosystem services as: *‘the benefits*

people receive from ecosystems'. Humans are ultimately dependant on the natural environment and ecosystem services highlight how these systems provide and interact to create the essential components for human well- being. Four key services are identified for ecosystems and are shown in the following Figure 4.

Figure 4 Ecosystem Services.



Source: Millenium Ecosystem Assessment, 2005.

4.3.1 Designated Nature Conservation Areas

Whilst the lands occurring within the SDZ Planning scheme are not subject to designation under the Habitats Directive, the Grand Canal is a designated proposed Natural Heritage Area. Table 5 lists all designated nature conservation areas occurring within a 15 km radius of the SDZ Planning Scheme along with the approximate distances to each of these designated conservation areas. These designated areas are illustrated on Figures 7 to 9.

Table 5: Designated Nature Conservation Areas within 10km of the proposed site

Name and Site Code	Site Code	Designation Type	Distance from Site
Glenasmole Valley	001209	SAC & pNHA	8.1km to the south.
North Dublin Bay	000206	SAC & pNHA	15km to the east
Rye Water	001398	SAC & pNHA	5.5km to the northwest

Name and Site Code	Site Code	Designation Type	Distance from Site
Valley/Carton			
South Dublin Bay	000210	SAC & pNHA	12.5 to the east
Wicklow Mountains	002122	SAC & SPA	12.5km to the south
North Bull Island	004006	SPA	11.5km to the east
South Dublin Bay & River Tolka Estuary	004024	SPA	12.5km to the east
Booterstown Marsh	001205	pNHA	13.6km to the east
Dodder Valley	000991	pNHA	6.5km to the southwest
Fitzsimon's Wood	001753	pNHA	3.2km to the north
Grand Canal	002104	pNHA	Adjoining the site
Kilteel Wood	001394	pNHA	11.5km to the southwest
Liffey Valley	000128	pNHA	2.2km to the north
Lugmore Glen	001212	pNHA	6.5km to the south
Royal Canal	002103	pNHA	3.8km to the north

Name and Site Code	Site Code	Designation Type	Distance from Site
Santry Desmesne	000178	pNHA	13.3km to the northeast
Slade of Saggart & Crocksling Glen	000211	pNHA	7.5km to the south

Figure 5 SACs within 15km of SDZ Planning Scheme

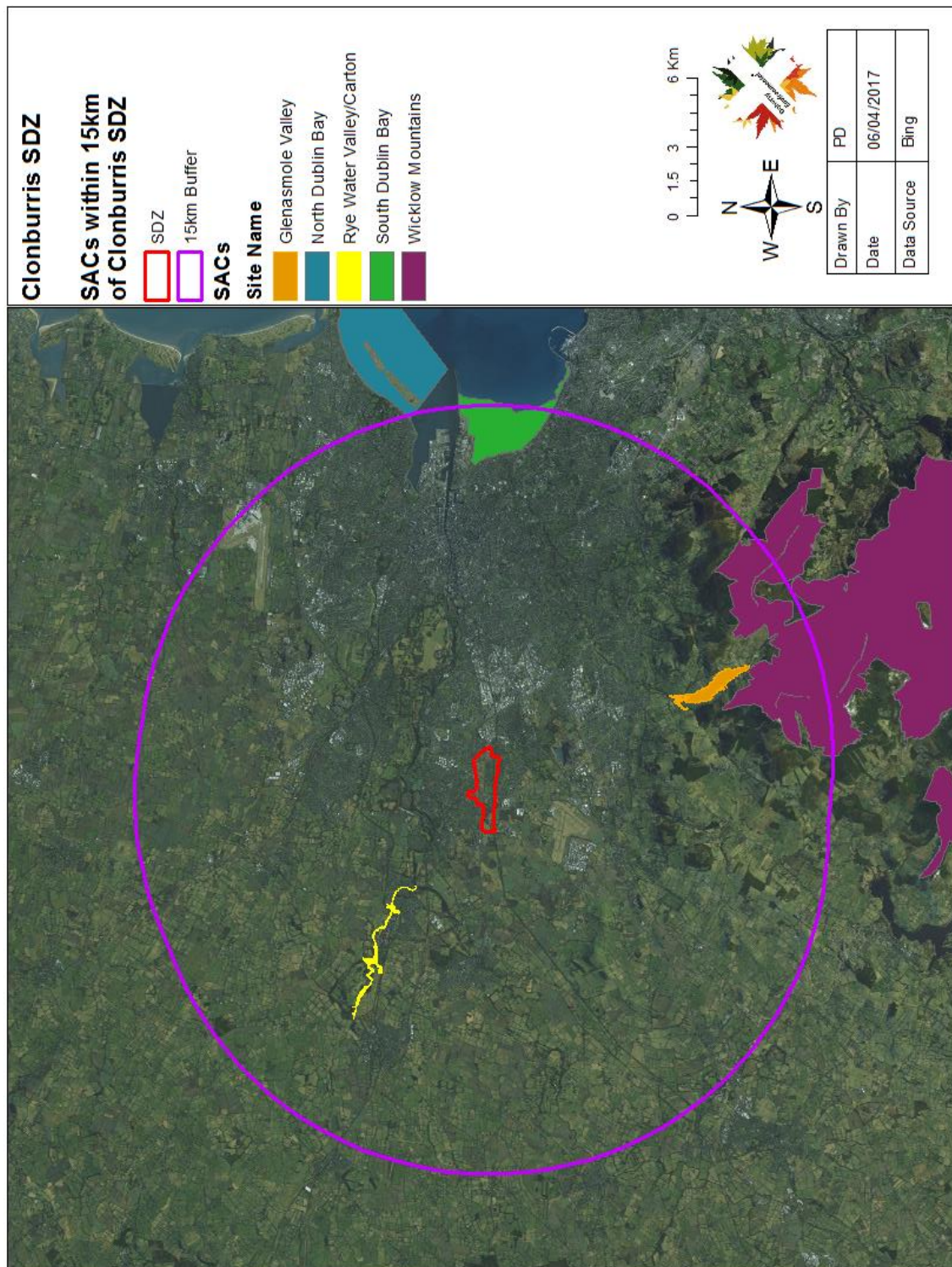


Figure 6 SPAs within 15km of SDZ Planning Scheme

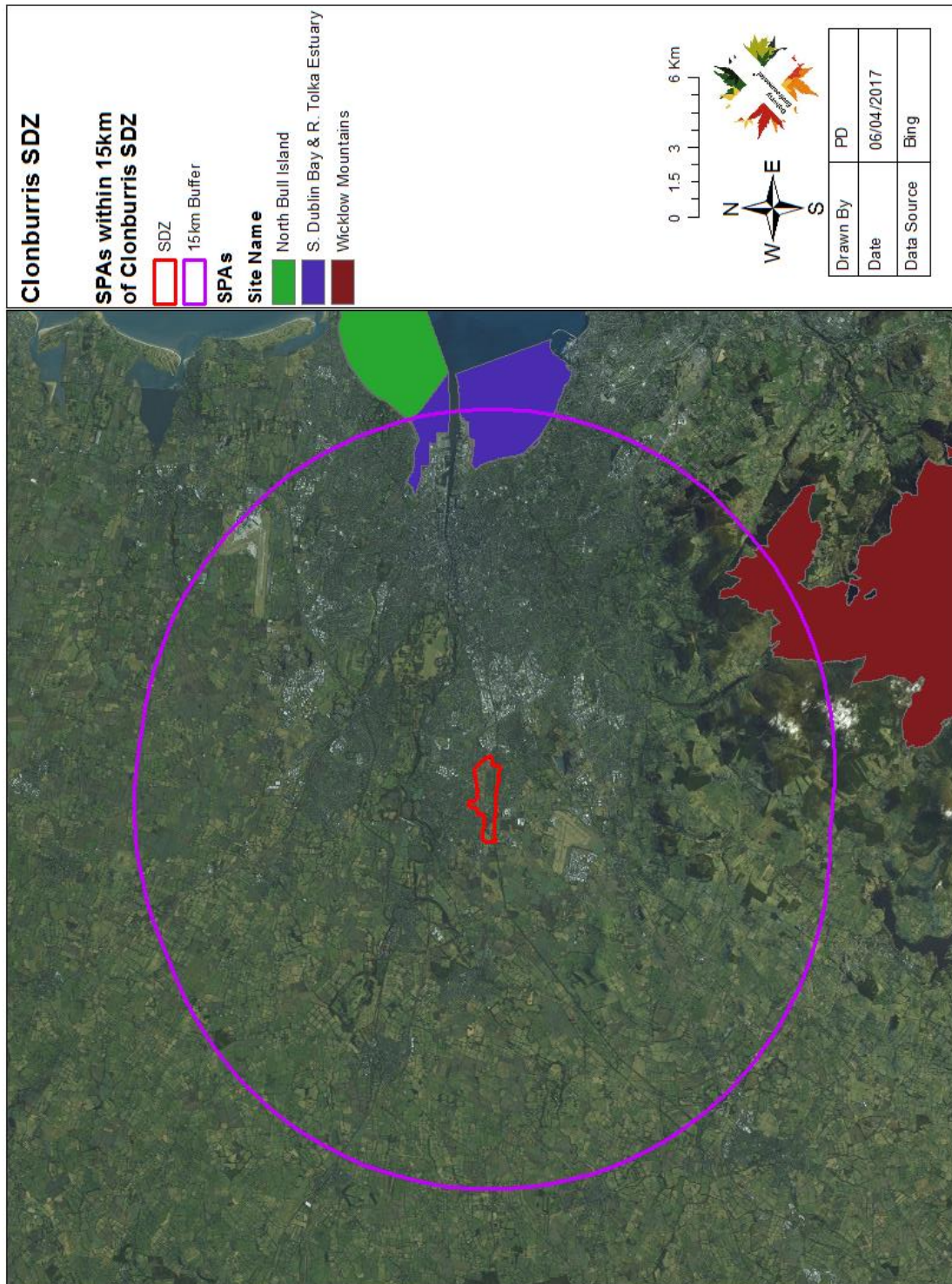
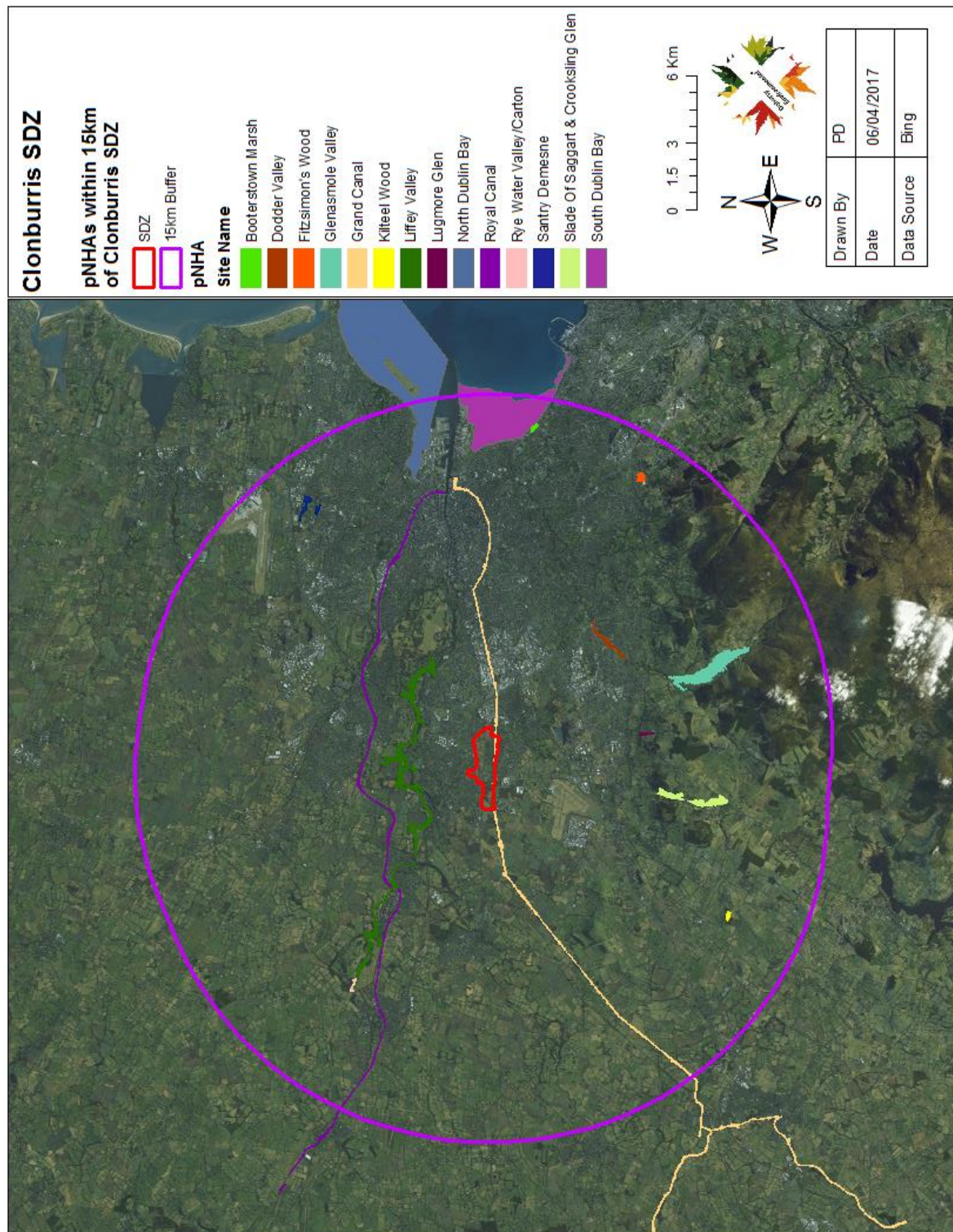


Figure 7 pNHAs within 15km of SDZ Planning Scheme



4.3.2 Habitats Directive Assessment

Under Article 6(3) & (4) of the EU Habitats Directive and associated national legislation transposing this directive, a Habitats Directive Assessment is required where a plan or project has the potential to result in significant effects to the conservation objectives and integrity of European Sites.

The Habitats Directive Assessment involves a number of stages. Stage 1 Screening examines the likelihood of a project, either alone or in combination with other projects or plans, to result in significant effects to the conservation objectives and integrity of European Sites. If the Stage 1 Screening concludes that significant effects are likely, a Stage 2 Appropriate Assessment is required. In effect, the Stage 1 Screening assesses the need for a full Stage 2 Appropriate Assessment. The Stage 2 Appropriate Assessment examines in detail how potential negative impacts associated with a project will affect the integrity of a European Site. Where such effects are considered likely to occur, mitigation measures are proposed so that such impacts are avoided.

A Stage 1 Screening Assessment⁶ of the SDZ Planning Scheme was carried out for the European Sites occurring within its sphere of influence. It was concluded that the proposed SDZ Planning Scheme will not have the potential to result in likely significant effects to European Sites occurring within the wider zone of influence of the SDZ Planning Scheme. As such, a Stage 2 Appropriate Assessment was not required for the proposed development.

4.3.3 Rare & Protected Fauna

The available landholding spans the three tetrads O03G, O03L and O03R. A review of protected and rare species records for each of these tetrads held by Biodiversity Ireland (www.biodiversityireland.ie accessed on the 29th March 2017) was undertaken.

The protected, rare and/or sensitive species recorded within the 3 tetrads surrounding the proposed SDZ Planning Scheme are outlined in Table 6. As virtually all birds are protected in Ireland, only records for amber and red listed species are detailed in Table 7. A comment on the likelihood of each of these species occurring within the SDZ Planning Scheme is provided in the table below. Note the likelihood of presence is based upon the habitat occurring within the SDZ lands.

⁶ Provision of information for screening for appropriate assessment Balgaddy-Clonburris Strategic Development Zone draft planning scheme. Scott Cawley for South Dublin County Council 2017.

Table 6 Protected and/or Rare Species occurring in the 5 Tetrads surrounding the Available Land Holding

Common Name	Status	Likelihood of being supported by the SDZ lands Planning Scheme
Kestrel	Amber Listed	Suitable foraging habitat is available for kestrel within and adjacent to the SDZ lands
Kingfisher	Protected Species; Listed on Annex 1 of EU Birds Directive; Amber-listed.	Suitable foraging habitat is provided along the Grand Canal.
Little Egret	Protected Species; Listed on Annex 1 of EU Birds Directive	Suitable roosting habitat is provided along the Grand Canal. Suitable foraging habitat is provided in artificial ponds in the wider area surrounding the SDZ lands.
House Martin	Amber Listed	Suitable foraging habitat is provided in the SDZ lands.
Little Grebe	Amber Listed	Suitable roosting and foraging habitat is provided along the Grand Canal.
Lapwing	Red Listed	Suitable roosting habitat is provided along the Grand Canal. Grasslands within the SDZ lands provide suitable foraging habitat for lapwing.
Common Pochard	Amber Listed	Suitable roosting and foraging habitat is provided along the Grand Canal.
Tufted Duck	Amber Listed	Suitable roosting and foraging habitat is provided along the Grand Canal.

Common Name	Status	Likelihood of being supported by the SDZ lands Planning Scheme
Common Coot	Amber Listed	Suitable roosting and foraging habitat is provided along the Grand Canal.
Mute Swan	Amber Listed	Suitable roosting and foraging habitat is provided along the Grand Canal.
Cormorant	Amber Listed	Suitable roosting and foraging habitat is provided along the Grand Canal.
Herring Gull	Red Listed	Suitable habitat is provided within the SDZ lands.
Linnet	Amber Listed	Suitable habitat is provided within the SDZ lands.
Barn Swallow	Amber Listed	Suitable habitat is provided within the SDZ lands.
House Sparrow	Amber listed	Suitable habitat is provided within the SDZ lands.
Common Starling	Amber listed	Suitable habitat is provided within the SDZ lands.
Redshank	Red Listed	Suitable roosting habitat is provided along the Grand Canal.
Trimmer's Mining Bee	Critically Endangered	No recent record of this species. The last record of this species in the tetrad O03G was from 1977. Nesting probably occurring in sparsely vegetated or short cropped areas exposed to sunshine such as south-facing banks and slopes. Such banksides are limited within the SDZ. The broods take pollen and nectar from a range of plant species occurring within the SDZ.
Andrena (Melandrena) nigroaenea	Vulnerable	See appraisal for Trimmer's Mining Bee.
Andrena praecox	Vulnerable	No recent record of this species. The last record of this species in the tetrad O03R was from 1978. Nesting probably occurring in sparsely vegetated or short cropped areas exposed to sunshine such as south-facing banks and slopes.

Common Name	Status	Likelihood of being supported by the SDZ lands Planning Scheme
		Such banksides are limited within the SDZ. The broods take pollen and nectar from a range of plant species occurring within the SDZ.
Bombus (Thoracombus) muscorum	Near-threatened	No recent record of this species. The last record of this species in the tetrad O03R was from 1978. This species requires herb-rich habitat, which is largely absent from the SDZ.
Pisidium hibernicum	Near threatened	Last recorded in 2003 in the tetrad O03G. Likely to be supported by the freshwater habitats within and adjacent to the SDZ such as the canal and Griffeen Streams.
Pisidium pulchellum	Near Threatened	Last recorded in 2003 in the tetrad O03G. Likely to be supported by the freshwater habitats within and adjacent to the SDZ such as the canal and Griffeen Streams.
Myxas glutinosa	Endangered	Last recorded in 2003 in the tetrad O03R. The Grand Canal is known to support this species.
Otter	Protected Species; EU Habitats Directive Annex II	Suitable foraging habitat is provided along the Grand Canal.
Red Squirrel	Protected Species; EU Habitats Directive Annex IV	There is limited habitat within the SDZ lands for Red Squirrel. Hedgerows and treelines may function as corridors for this species.
Daubenton's Bat	Protected Species; EU Habitats Directive Annex IV	Suitable foraging habitat is provided along the Grand Canal.
Leisler's bat	Protected Species; EU Habitats Directive Annex IV	Suitable foraging habitat is provided within and adjacent to the SDZ lands.

Common Name	Status	Likelihood of being supported by the SDZ lands Planning Scheme
Soprano pipistrelle	Protected Species; EU Habitats Directive Annex IV	Suitable foraging habitat is provided within and adjacent to the SDZ lands.
Common pipistrelle	Protected Species; EU Habitats Directive Annex IV	Suitable foraging habitat is provided within and adjacent to the SDZ lands.
Brown long-eared	Protected Species; EU Habitats Directive Annex IV	Suitable foraging habitat is provided within and adjacent to the SDZ lands.
Hedgehog	Protected Species: Wildlife Acts	Suitable foraging habitat is provided within and adjacent to the SDZ lands.
Pygmy shrew	Protected Species: Wildlife Acts	Suitable foraging habitat is provided within and adjacent to the SDZ lands.
Opposite-leaved Pondweed	Protected: Flora Protection Order; Endangered	Suitable habitat is provided along the Grand Canal.

4.3.4 Invasive Plant Species⁷

There are more than 30 species listed on the Third Schedule of the European Communities (Birds and Natural Habitats) Regulations of 2011. Riparian systems are particularly

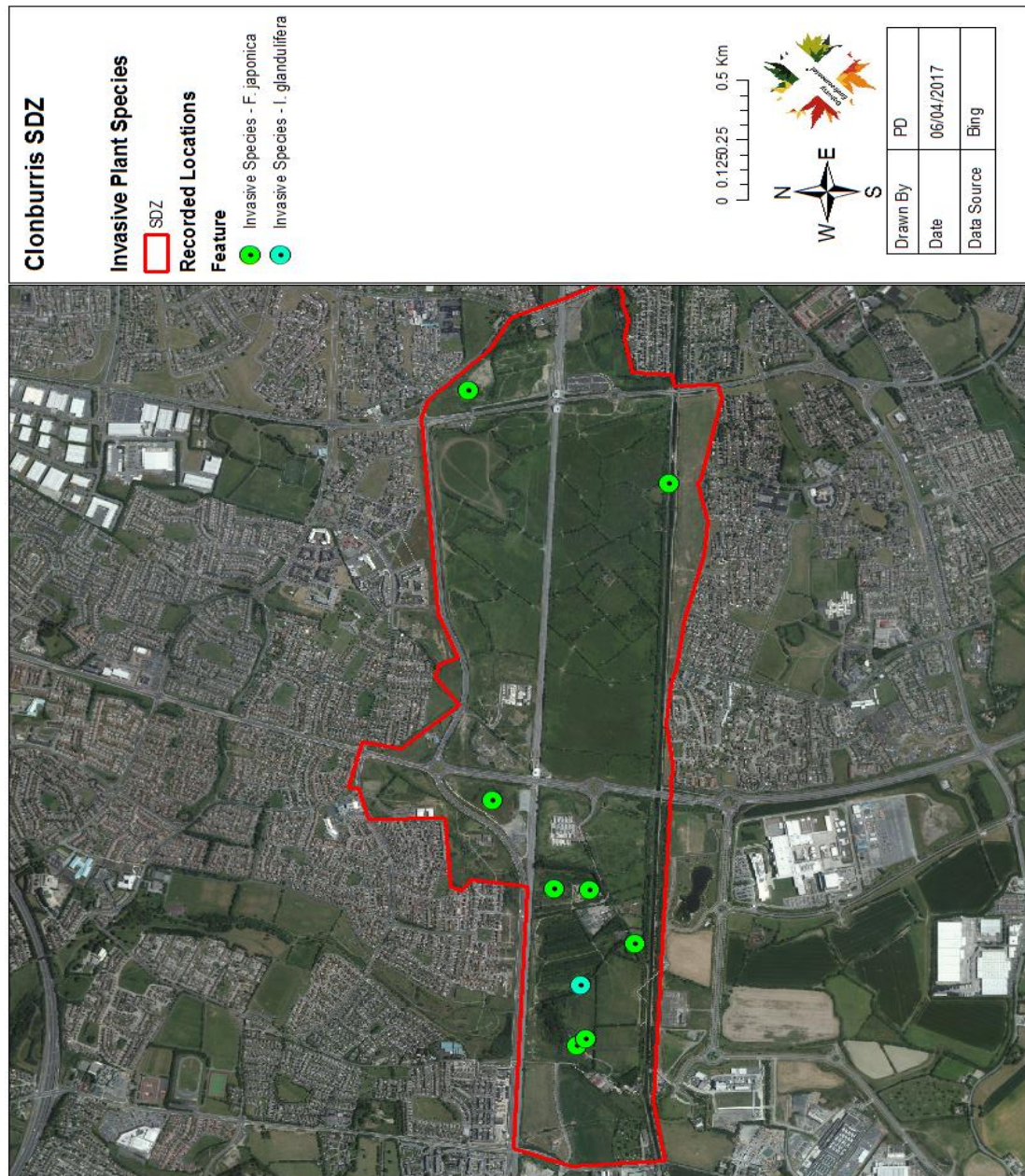
⁷ Clonburris SDZ Ecological Survey. Final Report, 2015. FERS for South Dublin County Council

vulnerable to plant invasions owing largely to the naturally high disturbance frequencies within riparian habitats and the rapidity with which an invasive species can spread utilising the medium of flowing water. Three species listed on the Third Schedule of the European Communities (Birds and Natural Habitats) Regulations of 2011 were observed to occur within the SDZ lands:

- Japanese Knotweed (*Fallopia japonica*);
- Himalayan Balsam (*Impatiens glandulifera*); and
- Canadian Waterweed (*Elodea canadensis*).

The presence of Canadian Waterweed has successfully naturalised within suitable habitat, and appears to have stabilised. In contrast, the presence of Japanese Knotweed and Himalayan Balsam within the SDZ lands represents a serious threat to biodiversity, in particular with regard to the aquatic systems. The dispersal/spreading of these species is a prosecutable offence under Section 49(2) of the European Communities (Natural Habitats) Regulations 2011. The location of records for these two latter terrestrial species is shown on Figure 9.

Figure 8 Invasive Plant Species



4.3.5 Habitats

The following sections provide a description of the habitats occurring within and immediately adjacent to the SDZ lands. Figure 9 shows the Habitat Map; this map and the description of habitats provided below is based on the result of detailed baseline vegetation and habitat surveys completed within the subject lands in 2015 (FERS, 2015). During the 2015 surveys all habitats occurring within and adjacent to the SDZ lands were categorised according to the Heritage Council's *Guide to Habitats in Ireland* (Heritage Council, 2000). The *Guide to Habitats in Ireland* classifies habitats according to a hierarchical framework with Level 1 habitats representing broad habitat groups, Level 2 representing habitat sub-groups and Level 3 representing individual habitat types.

Five Level 1 broad habitat groups were identified within and adjacent to the SDZ lands. These include Freshwater, Grassland, Woodland, Disturbed Ground and Built Land habitats. The level 3 habitat types occurring within each of this habitat groups are described under the following sub-sections.

In March 2017 a ground-truthing survey of the SDZ lands was completed to identify any significant changes to land cover identified during the 2015 habitat survey. The location of key ground-truthing survey points are shown on Figure 11 and a brief description of the results of the ground truthing survey at these locations is provided in Table 7.

Figure 9 Habitat Map

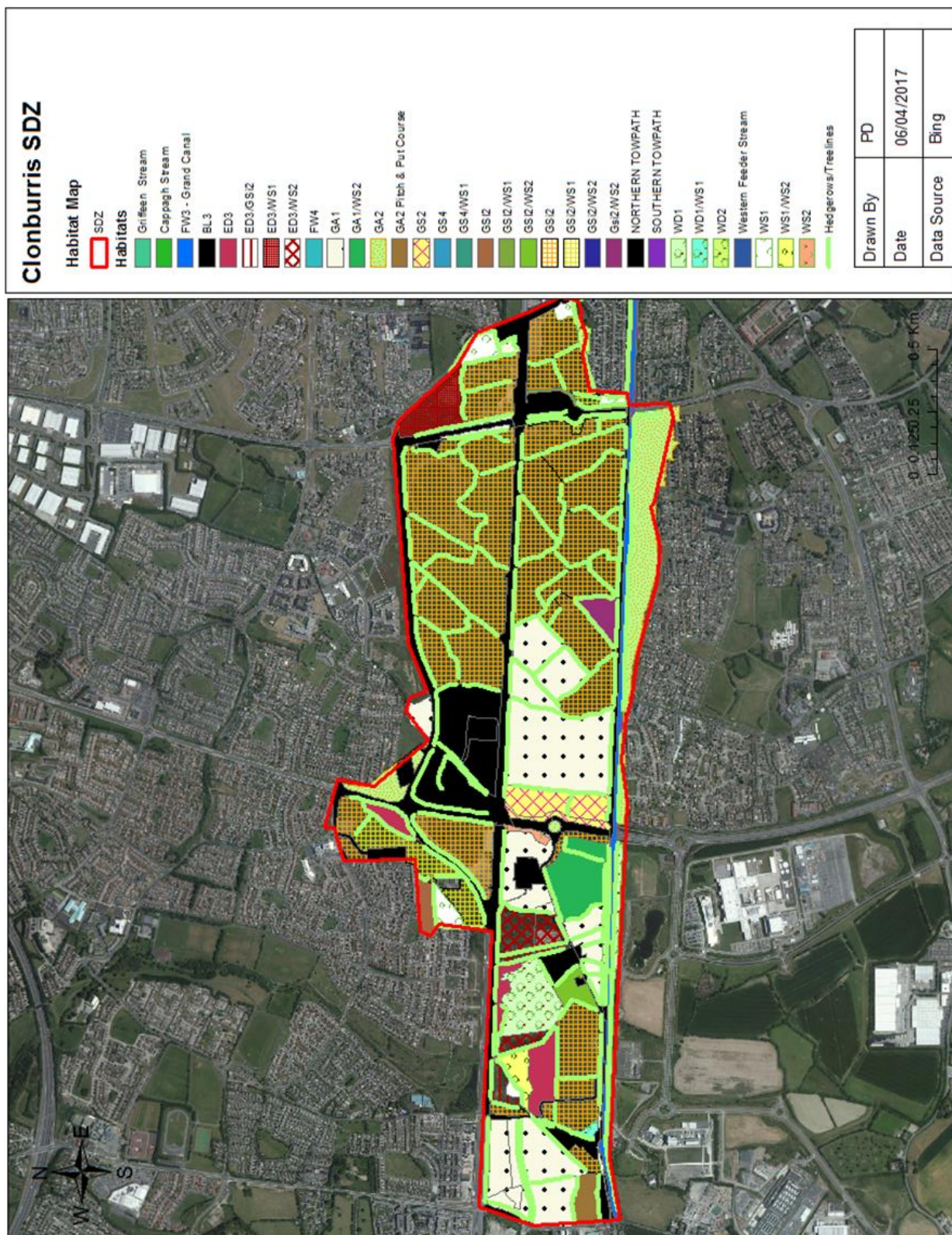


Figure 10 Ground Truthing Survey Points 2017

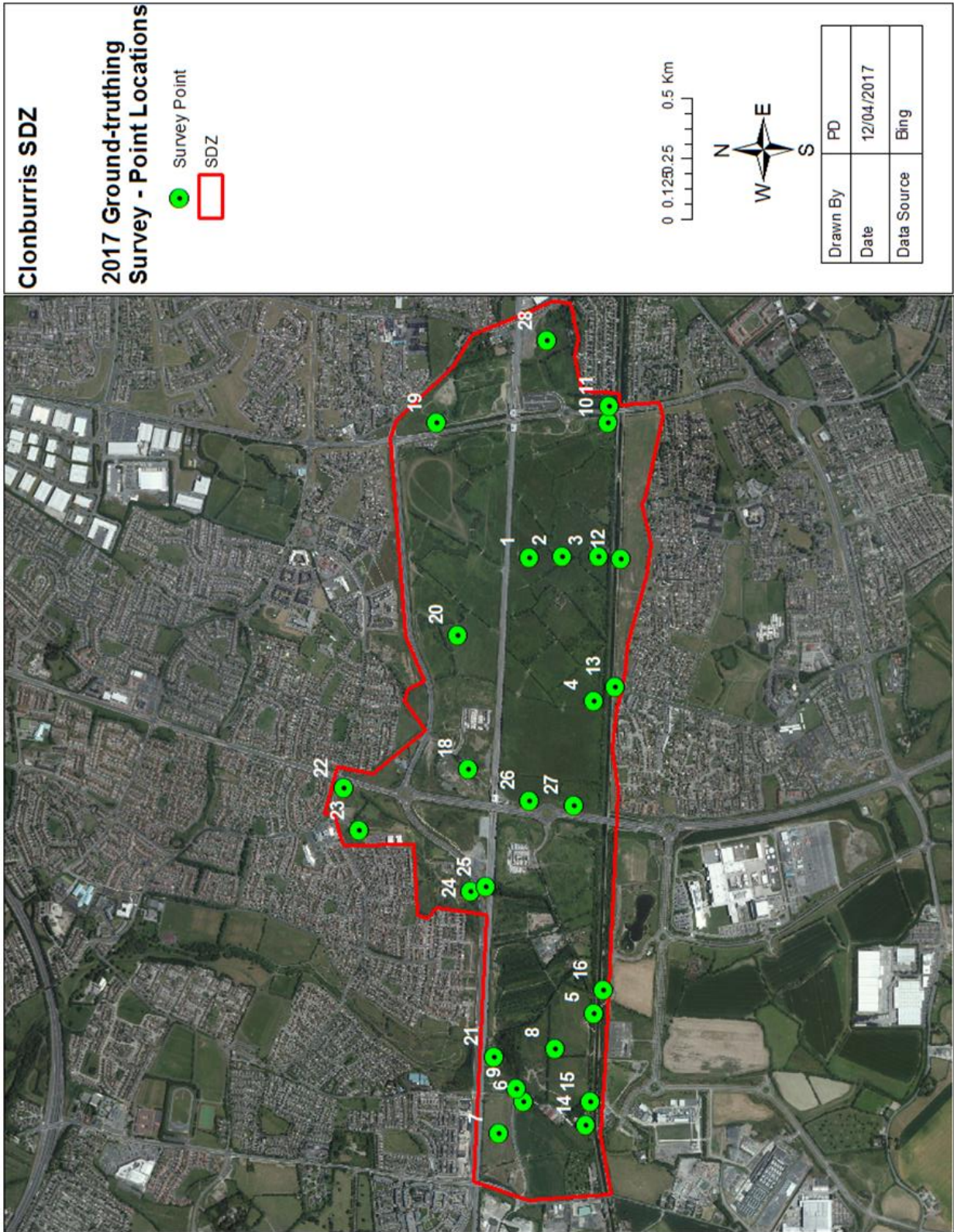


Table 7: Results of 2017 Ground-truthing Survey at Survey Points.

Point No.	Notes
1	High sward improved dry meadow grassland. No change from 2015 survey data
2	Low sward improved dry meadow grassland. No change from 2015 survey data
3	Northern tow path. Mature treelines with <i>Fraxinus excelsior</i> and <i>Acer pseudoplatanus</i> , circa 10 - 15m in height. Largely dry drainage ditch on northern side of tow path. Grassed earth bank between ditch and towpath. Grassy verge along southern side of northern towpath. Thin line of <i>Phragmites australis</i> dominating the emergent vegetation.
4	Northern tow path. Mature treeline with <i>Fraxinus excelsior</i> to a height of 10 - 15m. Drainage ditch and grassy earth bank on the northern side of the towpath. Thin line of <i>Phragmites australis</i> dominating the emergent vegetation. Grassy verge between the emergent vegetation and the northern towpath.
5	Existing pedestrian/cycle bridge over Grand Canal. Treelines in place on the northern and southern side of the canal immediately to the east and west of the bridge. Vegetated corridor maintained beneath the bridge minimising fragmentation. Treelines are dominated by <i>Fraxinus excelsior</i> . Stands of rush noted parallel to the northern towpath, similar to the wet grassland noted during the 2015 surveys. Grassy verge between the canal and the treeline on the southern towpath. No change since the 2015 survey.
6	High sward grassland during survey. Previously classified as improved agricultural grassland. Possibly representative of improved dry meadow.
7	Short sward improved agricultural grassland. No change evident since the 2015 survey.
8	Short sward improved dry meadow/improved agricultural grassland. No change evident since the 2015 survey.
9	Along the Griffeen River where areas of grassland and recolonising ground were noted. No change evident since the 2015 survey.
10	Short sward improved dry meadow grassland. Frequently accessed by people. Evidence of rabbit grazing. Hedgerow screening field from the Cappagh overflow stream. No change evident since the 2015 survey.
11	Roadside planting on the fill slope to the north of the Grand Canal and Cappagh Stream. Areas of grassland are scrubbing over. Significant scrub encroachment in this area. Scrub likely to have expanded since the 2015 survey.
12	On southern towpath at the proposed overbridge crossing. Thin strip of <i>Phragmites australis</i> dominating the emergent vegetation along the canal. This has been cut back to ground level. Short sward grassy verge between the canal and the towpath. To the south of the towpath is a grassy earth bank with occasional landscaped planted trees. No significant change since the 2015 survey.
13	On the southern towpath at the proposed cycle route crossing. Thin strip of <i>Phragmites australis</i> dominating the emergent vegetation along the canal. This has been cut back to ground level. Short sward grassy verge between the canal and the towpath. To the south of the towpath is a grassy earth bank with occasional landscaped planted trees. No significant change since the 2015 survey.
14	Along the northern towpath, at the southern end of Hayden's Lane. The verge between the towpath and the canal is dominated by dense cover of <i>Petasites hybridus</i> . No significant change along the verge from that described in the 2015 survey data.
15	Along the northern towpath to the east of Hayden's Lane. No change noted in the land cover and habitats from that noted in the 2015 survey data.

16	Along the southern towpath adjacent to the gated entrance to the Grange Castle IDA park. Land cover similar to that described in the 2015 survey data.
18	Adjacent to Kishoge school. Built land and bare ground are the dominant land cover in this area. No change from the 2015 survey data.
19	Mapped as disturbed ground habitat with scrub encroachment in the 2015 survey. Indicative grassland habitat during the 2017 survey.
20	High sward improved dry meadow grassland. No change from 2015 survey data
21	Mosaic of recolonising bare ground and dry meadow grassland. Stream flowing north under the railway to the east of this location. No change since 2015 survey. Note stream not shown on habitat map
22	Low sward improved dry meadow grassland. No change from 2015 survey data
23	Low sward improved dry meadow grassland. No change from 2015 survey data
24	Grassland and encroaching scrub noted in this area. Similar land cover to that recorded during the 2015 survey.
25	Grassland and bare ground noted in the vicinity of this location.
26	Dry meadow grassland with patches of scrub. Noted as species rich grassland during the 2015 survey. No change in the land cover.
27	Dry meadow grassland with patches of scrub. Noted as species rich grassland during the 2015 survey. No change in the land cover.
28	Dry meadow grassland to the east of the train station. No change in land cover at this location.

4.3.6 Freshwater

Griffeen Stream (FW2)

The Griffeen Stream flows north to south towards the western end of the SDZ lands. This is an example of a lowland depositing stream. No in-stream vegetation was noted along the section of the stream running through the SDZ lands. The banks of the stream are relatively steep-sided, but are only 1 – 2 feet high. Through sections, the Griffeen is under heavy cover of overhanging trees/shrubs, with very little understory herb cover. Where trees and/or scrub are lacking, the banks of the Griffeen are heavily dominated by ruderal species, indicating that the area has been disturbed in the recent past. The ruderal vegetation along these stretches is dominated by *Urtica dioica*, *Calystegia sepium*, *Epilobium hirsutum* and *Phalarus arundinaeae*.

Western Feeder Stream (FW2)

The western feeder stream consists of a fast-flowing waterbody with a gravel bed and little instream/emergent vegetation and is entirely overhung by trees and shrubs.

Canals (FW3)

A diverse range of vegetation (128 species in total) was recorded along the Grand Canal between the 9th Lock and the 12th Lock Bridge during field surveys in 2015. The most dominant vegetation community occurring on the banks of the canal/towpath, particularly at the eastern end of the section, consists of *Arrhenatherum elatius*, *Filipendula ulmaria*, *Glyceria maxima*, *Petasites hybridus* and *Vicia cracca*. Towards the middle/western end of the section, some stands of canal-side vegetation, particularly towards the western end of the section are almost entirely dominated by *Phragmites australis*, with small amounts of *A. elatius* and *Urtica dioica*. In limited areas, in particular where there are rock outcrops, the margins of the canal are

dominated by habitat similar to GS1, with *Bromus ramosa*, *Briza media*, *Festuca rubra*, *Daucus carota* and *Galium verum*.

The overall species makeup of the Canal itself (both emergent and aquatic) is virtually the same throughout this section of canal – the primary differences being in the dominance of various species. The primary emergent species occurring were *Plantago alisma-aquatica*, *Nuphar lutea*, *Potamogeton gramineus*, *Glyceria maxima*, *Sagittaria sagittifolia*, *Spharganium erectum*, *Phalaris arundinacea*, *Phragmites australis*, *Typha latifolia*, *Mentha aquatic* and *Iris pseudacorus*. The primary aquatic species occurring (as sampled by grapnel) were *Elodea canadensis*, *Cladophora sp.*, *Chara vulgaris*, *Callitriche stagnalis*, *Hippuris vulgaris* and *Myriophyllum spicatum*.

Toward the 12th lock bridge end, sections of the canal are almost entirely dominated by filamentous algae, with some *Elodea canadensis*. This is most likely owing to clearance of in-stream vegetation, which was underway during the survey period, and which progressed from west – east. This clearance of a large proportion of emergent and aquatic vegetation at a time when there is still significant growth may result in a surge in the growth of filamentous algae and water weed.

In contrast, the vegetation communities toward the 9th lock end of this section of canal would appear to have a greater diversity of species at any one point, with no species dominating to the extent that filamentous algae and pondweed dominate at the 12th lock end. The 2015 study noted that clearance of vegetation took place within the bird breeding season (1st March – 31st August) and may have an impact on invertebrates such as Dragonflies and Snails, which lay their eggs on emergent vegetation at or below the water surface.

Drainage Ditch (FW4)

Drainage ditches occur along the majority of the hedgerow field boundaries within the SDZ lands. However all but one of these are ephemeral/transient freshwater features and are only likely to convey surface water during times of flood. During field surveys these ditches were dry and did not support wetland vegetation.

The one wet drainage ditch that was observed flows under a roadway and is likely to link into the Grand Canal at some point, based on OSI mapping. This ditch contained no significant vegetation, although the water levels are likely very high in winter.

4.3.7 Grassland

Grassland is the most abundant habitat within the SDZ lands, with over 200 Ha being comprised of this broad habitat type. It is almost certain that in the past, the entire grassland habitat present was of the type Improved Agricultural Grassland (GA1) – being regularly fertilised and with very little herb cover. However active agricultural management ceased approximately 25 years ago. During this time the dominance of grassland vegetation within the SDZ lands has most likely been maintained by the large population of rabbits. A description of the grassland habitats present alongside Figure 12 Grassland Habitats is presented below.

Improved Agricultural Grassland/Amenity Grassland (GA1)

Some of the lands within the SDZ lands are managed as GA1, and these habitats are grazed, and are likely to have been regularly fertilised and/or reseeded. These are dominated by grasses throughout, particularly *Lolium perenne*, with very little herb cover. *Agrostis stolonifera* is also abundant in examples of this habitat and *Ranunculus repens*, *Senecio jacobaea* and *Cirsium arvense* are the dominant herbs. In examples of this habitat grazed by horses *Odontites vernum* is frequent along horse paths. Areas of improved agricultural grassland are currently being encroached by scrub resulting in a mosaic of improved agricultural grassland and scrub habitat (see Figure 12 for locations). The dominant scrub species are *Crataegus monogyna*, *Prunus spinosa*, *Rubus fruticosus* agg.

Grass dominated swards, representative of amenity grassland, occur in association with residential and recreational areas (such as the pitch and put course in the southwest corner) of the SDZ lands.

Dry Meadow

Improved dry meadow is the most prevalent grassland habitat type occurring within the SDZ lands, while the occurrence of semi-natural dry meadow grassland is very limited. The improved dry meadow grassland supports a sward of limited diversity that consists of regularly occurring grasses and herbs. Only one species of conservation interest, the Bee Orchid (*Orphys apifera*), was observed within the SDZ lands during surveys. Even the most diverse of these “semi-natural” areas of grassland are rather species poor, lacking the regular management and/or appropriate grazing regimes (through mowing or regular grazing by cattle/sheep) required to produce species-rich grassland.

The vegetation communities attributed to this habitat type vary throughout the SDZ lands. In the southeast corner of the SDZ lands between the R113 and Ninth Lock Road the improved dry meadow is dominated by swards of *Helictotrichon pubescens* with patches of *Juncus inflexus* occurring on damper ground.

In the improved dry meadow grassland occurring in the north of the SDZ lands, bounded by the R113 to the east, the railway to the south and the North Lock Road to the north the grassland community is dominated by *Holcus lanatus*, *Agrostis stolonifera*, *Plantago lanceolata*, *Potentilla anserina*, *Cirsium arvense* and *Potentilla reptans*. The effects of grazing are variable in this area with intensive rabbit grazing resulting in short swards, of less than 10 cm in some fields, while in other the sward was greater than 40 cm in height.

In the large block of improved dry meadow bounded by the Grand Canal to the south, the R113 to the east and the railway to the north the vegetation community is dominated by *Agrostis stolonifera*, *Holcus lanatus*, *Potentilla anserina*, *Potentilla reptans*, *Centaurea nigra*, *Plantago lanceolata*, *Senecio jacobaea* and *Cirsium arvense*. Grazing intensity is again variable in this area with the sward in some fields, where rabbits are concentrated, kept low at less than 10 cm while in other less grazed fields the sward height was over 30 cm. Scrub encroachment was noted in many of the fields in this area with *Crataegus monogyna* and *Rubus fruticosus* agg.

being the dominant scrub species spreading into the grassland. Dense stands of *Cirsium arvense* and *Senecio jacobaea* also occur in fields in this area of the scheme.

The improved dry meadow occurring in the area in the north of the SDZ lands (to the east of the R136 and the north of the railway) is dominated by *Arrhenatherum elatius*, *Plantago lanceolata*, *Centaurea nigra*, *Juncus inflexus*, *Cirsium arvense*, and *Potentilla anserina*. In one of the fields in this area large areas of rubble were noted, on which *Rubus fruticosus* agg. has started to encroach along with *Chamerion angustifolium* and *Urtica dioica*.

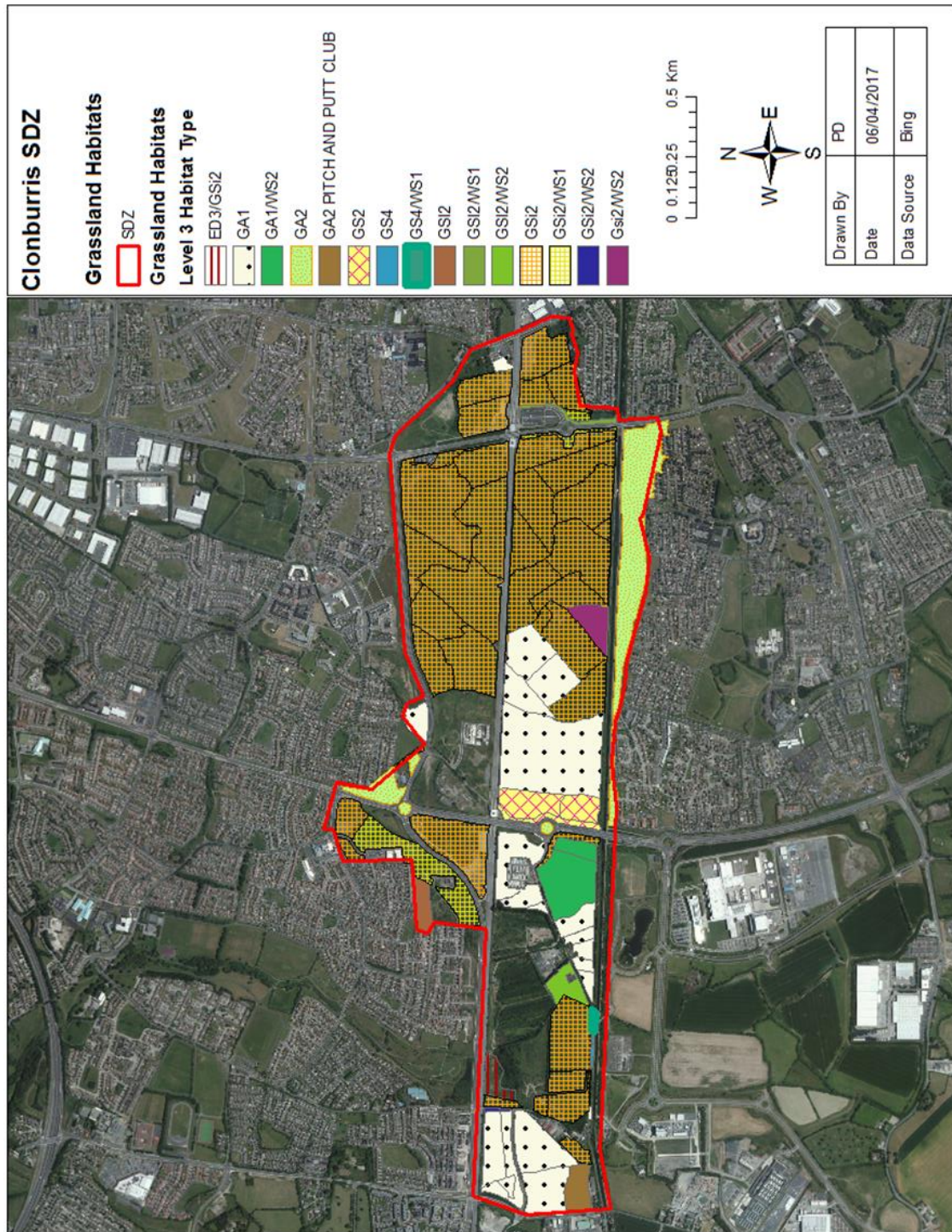
The remaining area of improved dry meadow to the north of the Grand Canal, east of Haydens Lane and south of the railway is dominated by *Arrhenatherum elatius*, *Plantago lanceolata* and *Taraxacum officinale* agg. The herb cover in this area of dry meadow is very low. *Primula veris* was noted in fields at this location.

One area of species-rich dry meadow grassland was recorded in three fields immediately to the east of the R136, north of the Grand Canal and south of the railway. The sward in these fields is dominated by *Agrostis capillaris*, *Festuca rubra*, *Plantago lanceolata*, *Odontites verum*, *Daucus carota* and *Lathyrus pratensis*. Herbs were noted to be abundant in these fields and some scrub encroachment of *Crataegus monogyna* and *Rosa canina* was also observed.

Wet Grassland (GS4)

There is a very limited quantity of grassland habitat that could be described as GS4, with most undergoing the transition towards scrub. This habitat occurs within the small “field” areas between the double-hedgerow (which is undergoing development in places into linear woodland) adjacent to the northern canal tow path towards the western end of the SDZ lands (to the east of Hayden’s Lane.) The species occurring in these areas include *Holcus lanatus*, *Filipendula ulmaria*, *Juncus inflexus*, *Valeriana officinalis*, *Petasites hybridus*, *Typha latifolia* and *Urtica dioica*. This example of wet grassland is currently scrubbing over with *Salix* spp. and *Crataegus monogyna*.

Figure 11 Grassland Habitats



4.3.8 Woodland

Mixed Broadleaved Woodland

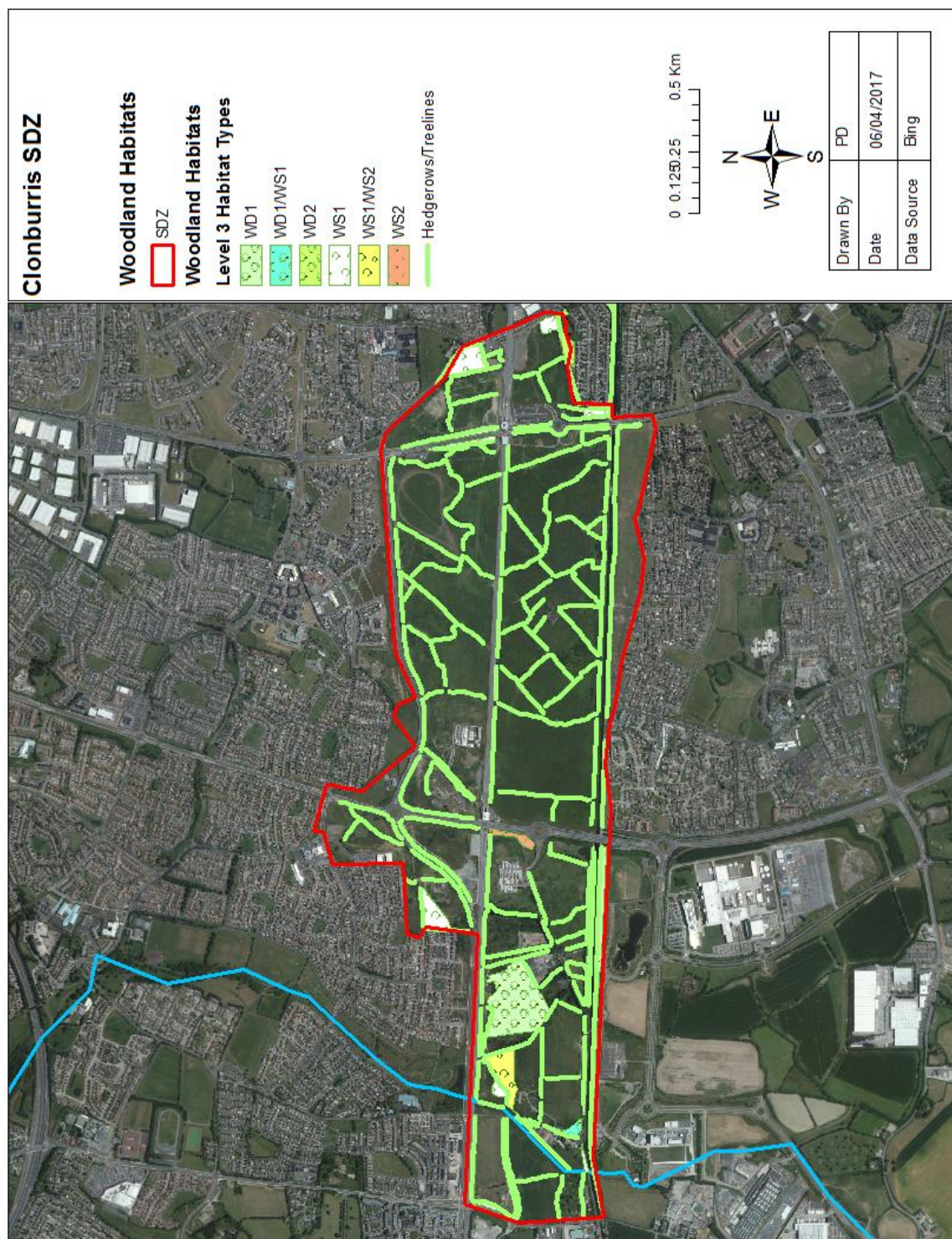
The examples of broadleaved woodland within the SDZ lands are dominated by a large area of planted beech (*Fagus sylvatica*) with some sycamore (*Acer pseudoplatanus*) also occurring (see Figure 13 for location). There is also a small area of woodland in the vicinity of Cappaghmore House with a tree-lined laneway leading to the dwelling house. The woodland itself was not surveyed in detail during site surveys as it was located on private lands, but was dominated by species such as *Aesculus hippocastanum* with a heavy understorey of *Prunus laurocerasus*.

Scrub & Immature Woodland

Scrub and immature woodland habitat are encroaching in many areas of the SDZ lands. The corridor adjacent to the Griffeen stream is a good example of this habitat type. The habitat immediately to the west of the Griffeen stream shows signs of having been recently disturbed, but has been rapidly colonised by grassland and pioneering woodland species. The grassland areas are dominated by tussocky grasses, with *Dactylis glomerata* dominant, but *Arrhenatherum elatius* and *Anthoxanthum odoratum* are also abundant. *Epilobium hirsutum*, *Calystegia sepium* and *Filipendula ulmaria* are the most abundant herbaceous species while the area adjacent to the Griffeen has been heavily colonised by *Acer pseudoplatanus*, with some *Fraxinus excelsior* and *Salix* species.

For the most part, scrub habitat exists within the SDZ lands as a mosaic with grassland habitat. There are, however, several areas in which scrub has primarily taken over, and the vegetation is completely dominated by *Crataegus monogyna*, *Prunus spinosa*, *Acer pseudoplatanus* and *Rubus fruticosus* agg. These areas are generally restricted to the edges of fields adjacent to overgrown hedgerows, or are present along roadside verges.

Figure 12 Woodland Habitats



4.3.9 Disturbed Ground and built land

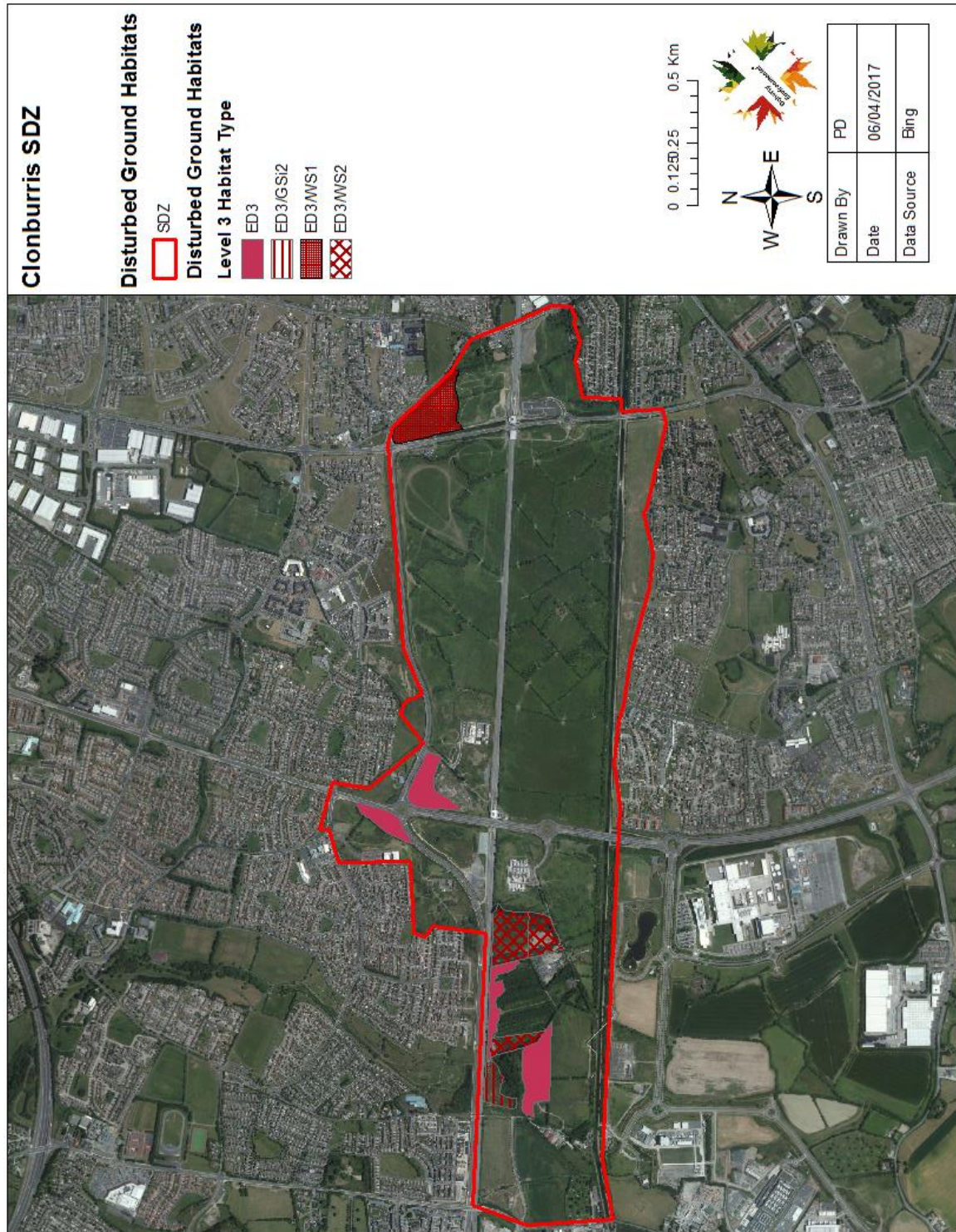
Three areas of the broad habitat group disturbed ground occur within the SDZ lands (see Figure 14). The largest extent of disturbed ground occurs towards the western end of the lands, to the south of the railway. The dominant species in this area include *Centaureum erythraea*, *Blackstonia perforata*, *potentilla anserina*, *Epilobium hirsutum*, *Chimerion angustifolium*, *Cirsium arvense*, *Buddleia japonica*, *Rubus fruticosus*, *Chamerion angustifolium*, *Epilobium hirsutum* and *Rubus fruticosus*. Large areas of rubble occur in this area and these have been colonised by species such as *Dipsacus fullonum* and *Hypericum perforatum*. These areas are also extensively colonised by scrubby plants such as *Rubus fruticosus*, the non-native *Buddleia japonica* and the invasive *Fallopia japonica*.

A mosaic of recolonizing bare ground and scrub occurs in a large field to the northeast of the SDZ lands. Here the vegetation is dominated by *Rubus fruticosus* and *Helictotrichon pubescens*. This field is mostly scrubbing over but areas of bare and recolonising ground are also present. Other species occurring at this location include *Hypericum perforatum* and *Blackstonia perforata*. The invasive *Fallopia japonica* is also present here.

The third and final area of recolonizing bare ground occurs to the north of the SDZ lands, to the west of the R136. This field shows evidence of recent disturbance as it is dominated by ruderals such as *Epilobium obscurum* and *Reseda lutea*. It contains a small pond where *Typha latifolia* also occurs.

Built Land Habitat: This habitat group consists of buildings and artificial surfaces (BL3) in the form of roads and other paved surfaces. This habitat supports little vegetation.

Figure 13 Disturbed Ground



4.3.10 Fauna⁸

Birds

A total of 44 species of bird, including 7 species listed as Amber and 2 red-listed species on the 2014 – 2019 Birds of Conservation Concern in Ireland list, were observed during the overall survey work. Four birds of prey – Common Buzzard, Kestrel, Sparrowhawk and Long-eared Owl were all recorded on site, indicating a diverse assemblage of apex predator bird species – which would imply a diverse assemblage of prey species. Garden bird species typical for this area – Robin, Wren, Blackbird, Songthrush, Greenfinch, Chaffinch Blue Tit and Great Tit were, as might be expected, abundant.

There is, however, a surprising (given the surrounding urban habitat) abundance of seed-eating species, with large (up to 30 individuals) “Charms” of Goldfinch present throughout the survey area, in addition to smaller flocks of Lesser Redpoll and Siskin, with which they were often associated. It is likely that in addition to the abundance of seeds present throughout the grassland within the SDZ lands, that these species have their food supplemented by feeders during the winter months, which may explain their abundance.

Hedgerows and treelines throughout the survey area are populated by typical species, with Blackbird, Wren, Robin and Dunnock all abundant, but with some species less common in urban areas such as Goldcrest, Blackcap, Bullfinch and Long-tailed Tit also occurring in numbers. The northern towpath and associated habitat (hedgerows, treelines and associated understorey) is particularly species rich and this habitat is of very high local importance with regards to local avifauna. It is almost certain that the presence of the Grand Canal ecological corridor has enabled these species to colonise suitable habitat present within this urban landscape.

Along the southern towpath of the canal, adjacent to housing estates, there was an abundance of species typically associated with urban areas, such as House Sparrow and House Martin. Along the canal itself, Moorhen, Mallard, Grey Heron and Little Grebe were frequently observed, with Mute Swan observed flying over the area on one occasion. The remains of several Wood Pigeon eggs were also present.

The recording of a flock of Fieldfare (*Turdus pilaris*) within the site at the end of August 2015 may indicate the importance of this habitat within the SDZ lands to overwintering birds. Fieldfare is a species that arrives in large flocks in Ireland to overwinter, and one of the primary food sources utilised is Hawthorn berries, which allows species such as the Fieldfare to survive the winter, and migrate home to breed.

Non-volant Mammals

General

General mammal surveys were carried out throughout the SDZ lands over 2015 (FERS, 2016). Direct evidence was observed for a very large (to the extent that many areas of grassland are

⁸ As with the habitat data the Clonburris SDZ Ecological Survey – Report FERS.September 2015 is the source of the information on fauna.

actually exhibiting signs of over-grazing) population of Rabbit (*Oryctolagus cuniculus*), Fox (*Vulpes vulpes*), Brown Rat (*Rattus norvegicus*), Pygmy Shrew (*Sorex minutus*), Woodmouse (*Apodemus sylvaticus*), Grey Squirrel (*Sciurus carolinensis*), Stoat (*Mustela ermine hibernicus*) and Hedgehog (*Erinaceus europaeus*). No indications of Badger were observed, either through direct observations, setts or placed trail cameras. The hedgerow survey having thoroughly examined hedgerows has indicated no observations of Badger activity

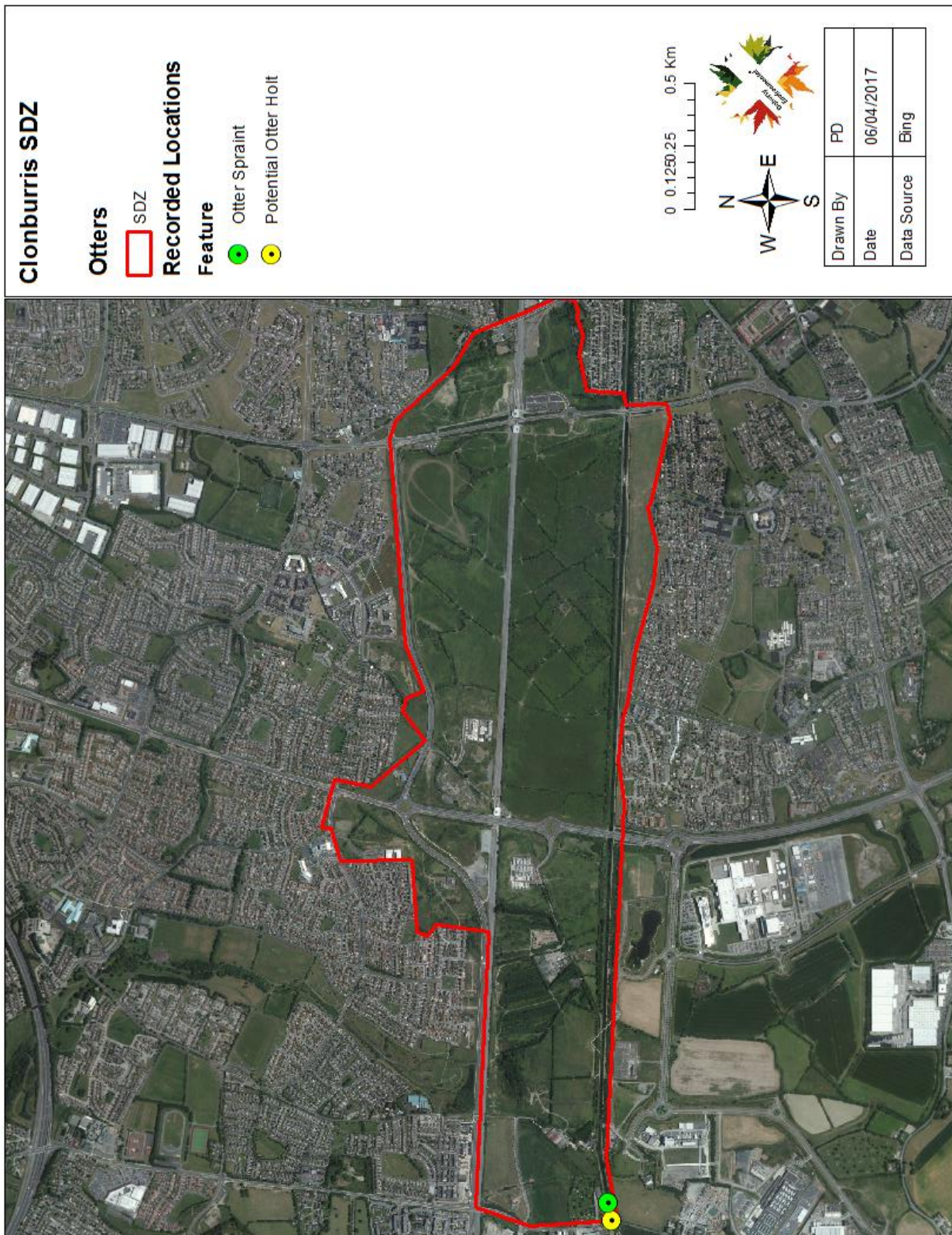
Otters

During the 2015 otter survey completed by FERS only two sites were identified (See Figure 14 for location) where spraint was deposited, and only one of these was found to have fresh spraint deposited regularly (on almost all site visits fresh spraint was present). Otter were confirmed as being present only along the north-western bank of the canal, where a trail entering/exiting the canal was identified and spraint regularly deposited. There are numerous potential other entry/exit points along the canal, but these are more than likely utilised by the high number of dogs observed along/in the canal. No Otter prints were observed at any of these potential sites, and spraint was observed at no location other than the two at the north-western end of the Canal. During an in-stream survey of the Griffeen stream no spraint were observed, but numerous potential haul-out sites under heavy cover, likely to be utilised by Otter, were observed. Based on the evidence of surveys, the Griffeen stream, the western feeder stream and the north western section of the Grand Canal are likely important sites for Otter within the SDZ lands.

Otter Surveys⁹ undertaken in 2016 concentrated on the area between the 12th Lock and Hazelhatch Bridge further west. The 12th lock is located at the western boundary of the SDZ lands. The surveys found that this area is of very high local importance for Otter, and mammals generally. There is an abundance of mammals occurring within this area relative to the SDZ lands immediately adjacent, and it is almost certain that the low levels of mammal activity (with the exception of Rabbit) within the SDZ lands is owing to the degree of development along the canal.

⁹ Survey for the occurrence of otter along the Grand Canal between the 12th lock bridge and Hazelhatch bridge. FERS 2016.

Figure 14 Recorded Otter Locations



Bats

Five species of bats were recorded within and adjacent to the SDZ lands during detailed bat survey completed in the 2015 bat activity season. The species recorded were Common Pipistrelle, Soprano Pipistrelle, Leisler's Bat, Daubenton's Bat and Brown Long-eared Bat. The most commonly recorded bat activity during the bat activity surveys was that of Common Pipistrelle, followed by Soprano Pipistrelle and Leisler's Bat. Low levels of Daubenton's Bat and Brown Long-eared Bat activity were recorded during the surveys.

The results of the surveys showed that bat activity was focused on the Grand Canal corridor and significantly decreased moving away from this corridor. The hedgerow/treeline habitat along the northern towpath was also identified as an important bat foraging habitat during the field surveys. In contrast surveys along other hedgerows occurring with the SDZ planning scheme recorded little foraging and were primarily used as commuting corridors by relatively small numbers of bats at the beginning and the end of each night.

No bat roosts were identified within the SDZ lands during 2015 bat surveys. Soprano pipistrelle were recorded roosting in mature trees along the laneway leading to Cappaghmore/Rosebank House to the east of the SDZ lands.

Fish & Amphibians

Fish species occurring along the Grand Canal include perch, roach, bream, pike and minnows. Brown trout occur within the Griffeen Stream along with three-spined stickleback and minnow.

Common Frog (*Rana temporaria*) were observed on numerous occasions during baseline field surveys (FERS, 2016), particularly in wetter areas of grassland during the habitat surveys. With the abundance of breeding and foraging habitat present, it is highly likely that Smooth Newt (*Tritura vulgaris*) is present in the area in addition to the Common Frog.

Terrestrial Invertebrates

During the 2015 baseline surveys meadow brown was recorded as the dominant butterfly species within the SDZ lands. Other species observed within the SDZ lands include large white, small white, green-veined white, small tortoiseshell, hedge brown, small copper, holly blue, peacock, speckled wood and red admiral.

Five species of bumblebee were recorded during the baseline surveys. These include *Bombus terrestris*, *Bombus lapidarius*, *Bombus pascorum*, *Bombus lucorum* and *Apis mellifera*. All five species were recorded along the northern towpath, while the field and hedgerow habitats within the SDZ lands supported low numbers and diversity of bee species. It is likely that poor weather conditions during the 2015 surveys affected the results of targeted bee surveys.

Aquatic Invertebrates

The diversity of aquatic invertebrates recorded within the Griffeen Stream was found to be low during the 2015 baseline surveys. The dominated species was Jenkins Spire Shell (*Potamopyrgus*

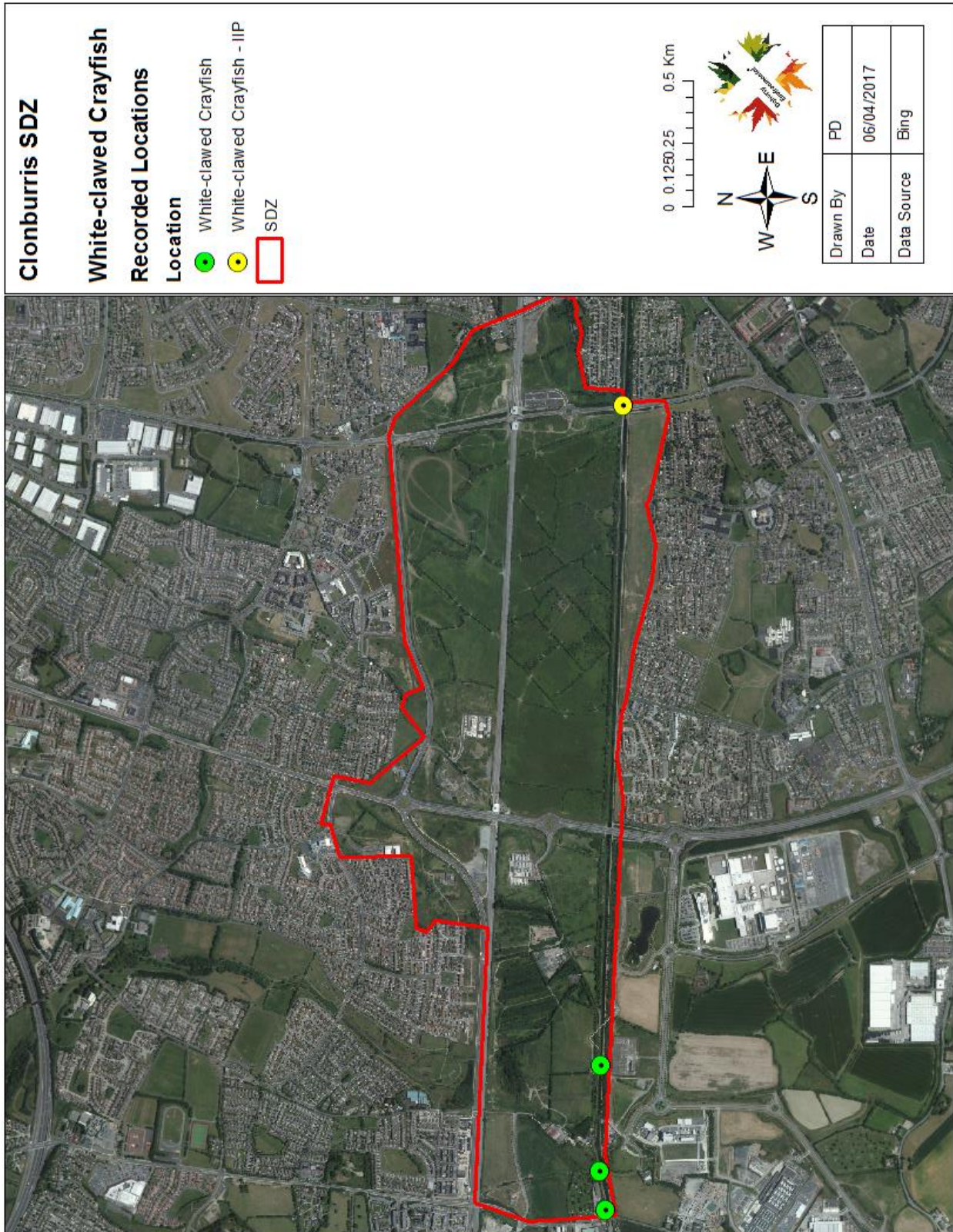
antipodarium). Other species recorded include *Bithynia tentaculata*, *Lymnea stagnalis*, *Physella fontinalis* and *Planorbis carinatus/planorbis*. The invasive amphipod *Crangonyx pseudogracilis* was also present, but outnumbered by *Gammarus duebeni*.

The Western Feeder Stream supports white-clawed crayfish as well as a number of gastropod and amphipod species

The Cappagh/Eastern Feeder Stream supports an abundance of *Gammarus duebeni*. The invasive *Crangonyx pseudogracilis* was also recorded in this watercourse. This stream is notable for the abundance of white-clawed crayfish supported by it. This species has been consistently recorded in high numbers within this stream and the population supported by this stream is likely to be of international importance.

The location of white-clawed crayfish records within the SDZ lands are shown on Figure 15. The point on Figure 15 labelled “IIP” represents the “Internationally Important Population”.

Figure 15 White Clawed Crayfish



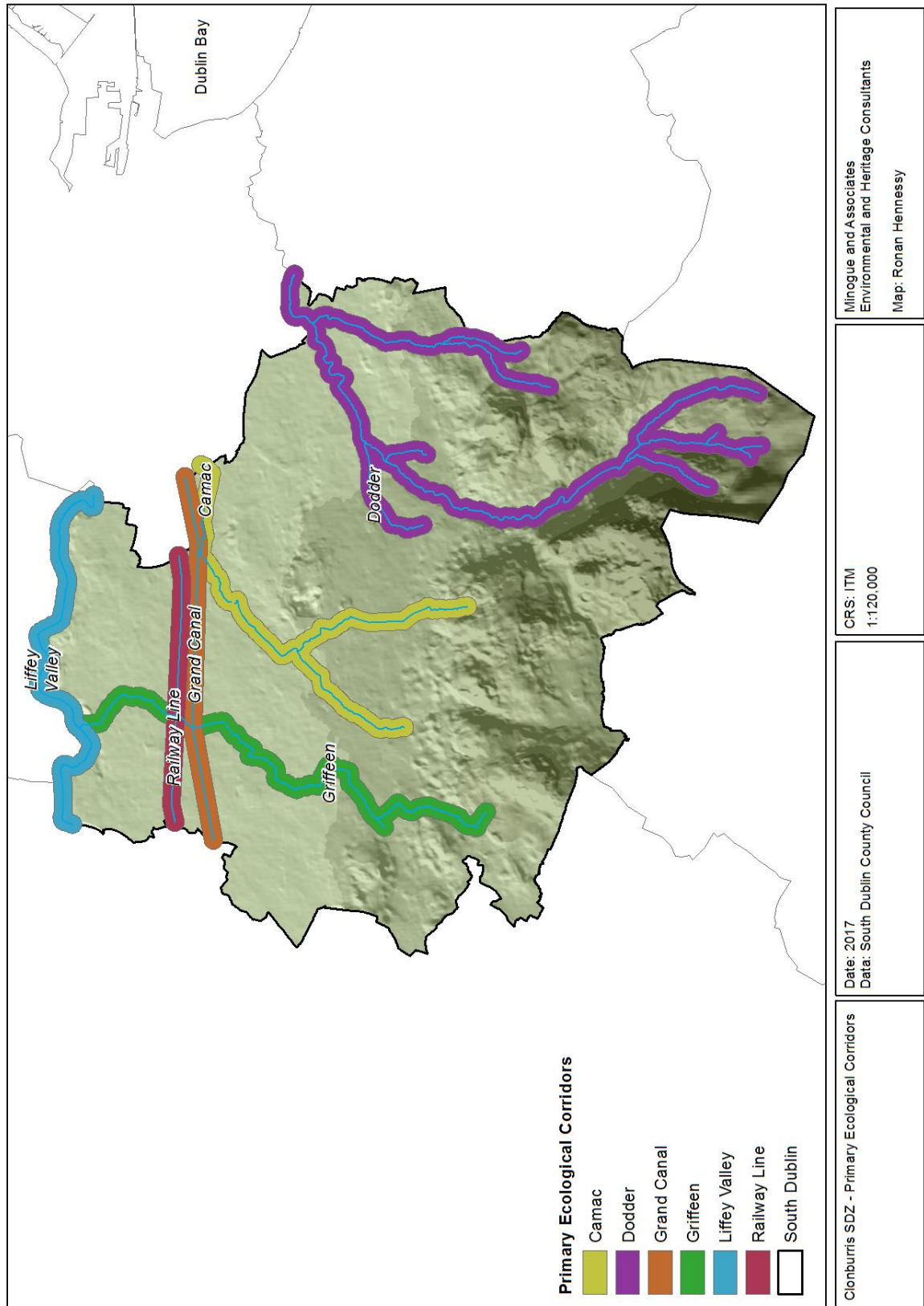
4.3.11 Ecological Corridors

There are three primary ecological corridors on the lands comprising the Grand Canal and associated towpath, Griffeen stream and along the railway line.

The Griffeen stream is used by species such as Trout and white-clawed Crayfish, and also the Otter for both hunting and commuting. The Griffeen stream corridor also links the Grand Canal to several habitats, including the River Liffey and as such is of importance to these species.

The Kildare rail line essentially provides an uninterrupted corridor through countryside, through an array of habitats and could be used by a large number of species for commuting between various habitats. Figure 16 below shows the primary ecological corridors at County level.

Figure 16 Primary Ecological Corridors South Dublin County.



4.3.12 Existing issues –Biodiversity, flora and fauna

Through the pre-draft consultation on the planning scheme and the SEA Scoping process number of issues were raised by consultees in relation to biodiversity, flora and fauna, and are summarised below:

- Biodiversity protection, corridors and wild spaces.
- Enhancement and development of the canal.
- Green spaces, ensure creation of corridors to protect habitats.
- Ensure that wildlife and nature areas are protected and minimise disturbance to wildlife.
- A thorough ecological assessment of the entire scheme area is required and key trees and hedgerows should be preserved. The Council are reminded that there are a number of protected flora and fauna species, as well as habitats in the scheme area and that these have legal protection. The White Clawed Crayfish is a notable example.
- The Grand Canal, a proposed Natural Heritage Area (site no. 002104), is the most important feature in terms of biodiversity in the Clonburris area. In the wider Dublin regional context it is also a very significant wildlife corridor.
- The lands at present consist largely of fields divided by a network of mainly overgrown hedgerows. The irregular pattern of this hedgerow network would suggest it is of some antiquity which the diversity of the woody flora present in individual hedges would also suggest. The opportunity should be taken in preparing the proposed Draft Planning Scheme to redesign the layout of roads and buildings so as to fit as far as is practicable within the existing hedgerow system in order that the greatest length of hedges as possible is preserved together with their associated biodiversity. In particular townland boundary hedgerows should be preserved as these are likely to be of the greatest age and biodiversity
- All external lighting should be downlighting and should be time limited. Lighting should be avoided in sensitive wildlife areas and light pollution, in general, should be avoided.

The screening report prepared under Article 6.3 of the Habitats directive has identified the following potential threats/risks to the qualifying interests of European Sites within the sphere of influence of the SDZ Planning Scheme as follows:

- Diffuse pollution to surface waters due to household sewage and waste waters
- Pollution to surface waters (limnic and terrestrial, marine and brackish)
- Discharges
- Mowing/cutting of grassland
- Roads, motorways
- Roads, paths and railroads
- Disposal of household/ recreational facility waste
- Continuous Urbanisation

- Bridge, viaduct
- Industrial or commercial areas
- Reclamation of land from sea, estuary or marsh
- Pollution to groundwater (point sources and diffuse sources)
- Flooding modifications
- Urbanised areas, human habitation
- Utility and service lines
- Roads, paths and railroads
- Paths, tracks, cycling tracks
- Outdoor sports and leisure activities
- Intensive management of public parks/ cleaning of beaches
- Modification of hydrographic functioning
- Invasive non-native species
- Human induced changes in hydraulic conditions
- Other human intrusions and disturbances.

4.4 Water resources including surface water management and flood risk.

Water resources and their quality have a clear interaction and impacts with other environmental parameters, therefore its protection and enhancement is of particular importance.

4.4.1 Water Framework Directive

The Water Framework Directive (WFD) is a key initiative aimed at improving water quality throughout the EU. It applies to rivers, lakes, groundwater, estuarine and coastal waters. The Directive requires an integrated approach to managing water quality on a river basin basis; with the aim of maintaining and improving water quality. The WFD identifies River Basin Districts as the key management units with clearly defined water bodies forming the basis for assessment reporting and management. The first cycle of RBD management plans were from 2009 to 2015 and the second cycle is currently being prepared. Currently the SDZ lands are located within the Eastern River Basin District. However, for the second cycle the Eastern, South Eastern, South Western, Western and Shannon River Basin Districts will be merged to form one national River Basin District.

The most recent data for the new plans being prepared (currently on consultation until August 2017 with adoption due 2017/2018) is from the catchments.ie website. A catchment is an area where water is collected by the natural landscape and flows from source through river, lakes and groundwater to the sea. The SDZ lands are situated within the Liffey and Dublin Bay Catchment (code:09). The area of this catchment covers 1,624,42km² and supports a total population density of 777 people per km².

4.4.2 Surface Water

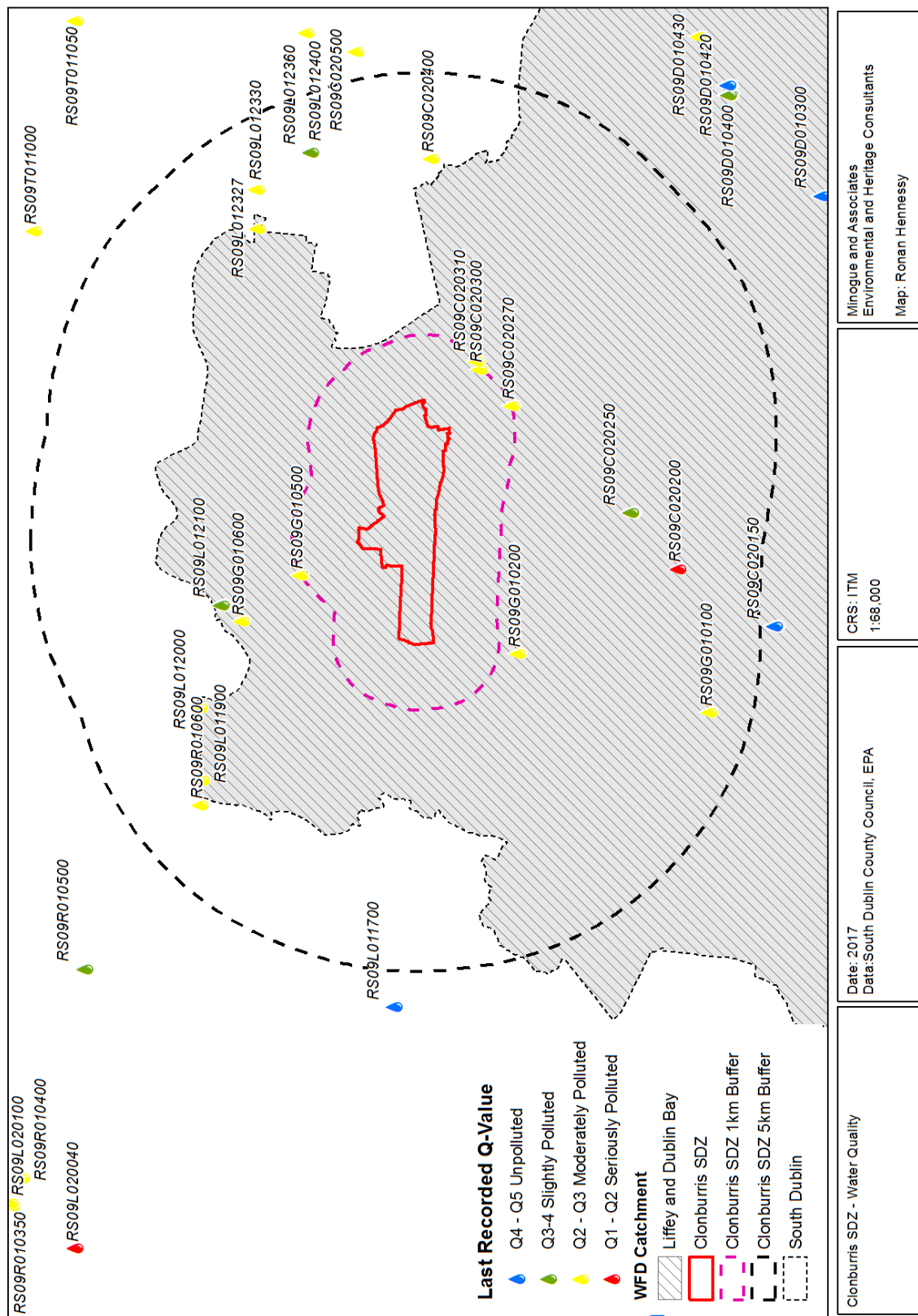
The subject lands are located within the Liffey and Dublin Bay catchment and the Liffey sub-catchment (code SC 0915); this covers an area of 136.56km². According to the EPA's online Map Viewer, the nearest known rivers are the Griffeen River which runs north-south through the west of the SDZ lands and the Camac River which runs to the south-east, outside the SDZ boundary. The Grand Canal forms the southern boundary of the subject lands. The Griffeen River flows in a northerly direction before its confluence with the River Liffey near Lucan. The Camac River flows in a north-easterly direction towards Heuston Station where it also joins the River Liffey. The Grand Canal flows east for c. 2km, where it ultimately discharges into the Liffey Estuary near Ballsbridge. The Liffey Estuary ultimately discharges to Dublin Bay near Poolbeg Lighthouse on the South Wall.

Surface water status is classified under the WFD from 'high' to 'bad' status. In measuring this status both ecological and chemical parameters are measured and the overall status is determined by the lower threshold achieved for both ecological and chemical parameters. The latest information from the catchments.ie website shows the overall WFD status of the Griffeen to be Moderate (Q3-4) whilst the Camac River is classified as Poor (Q2-Q3) according to samples taken at the EPA's monitoring station at Riversdale Estate Bridge.

The River Liffey is regarded as being of 'Moderate (Q3-4)' quality shortly after its confluence with the Griffeen River near Lucan Bridge. As a transitional waterbody under the WFD, the Liffey is regarded as 'Eutrophic' until it flows up to City Quay after which it is regarded as 'Unpolluted'. The coastal waterbody of Dublin Bay is regarded as 'Unpolluted'. As such, there have been no breaches of the EPA's threshold values for nutrient enrichment, accelerated plant growth, or disturbance of the level of dissolved oxygen normally present under the EPA's "Trophic Status Assessment Scheme" classification (EPA 2010).

The Grand Canal is classified as an Artificial Water Body under the WFD. Figure 17 shows the latest recorded Q –values for the Liffey catchment and the SDZ Lands.

Figure 17 Q values Liffey Catchment and SDZ Planning Scheme



4.4.3 Groundwater

Groundwater is a further significant resource and refers to water stored underground in saturated rock, sand, gravel, and soil. Surface and groundwater functions are closely related and form part of the hydrological cycle. The protection of groundwater from land uses is a critical consideration and groundwater vulnerability is becoming an important management tool. The entire island of Ireland has been designated as a Protected Area for Groundwater under the WFD. Groundwater is important as a drinking water supply as well as the supply to surface waters. In addition, groundwater supplies surface waters. Groundwater is exposed to higher concentrations of pollutants that are retained in the layers of rock and soil. The exposure to pollutants lasts much longer as groundwater moves at a slower pace through the aquifer. The quality of our drinking water supply, fisheries and terrestrial based habitats is intrinsically linked with groundwater quality. The Geological Survey of Ireland (GSI) aquifer categories are based on their vulnerability to pollution, i.e. the ease at which it can enter the subsurface layers. The classification of extreme or high vulnerability means that the groundwater in these areas is very vulnerable to contamination due to hydrogeological and soil factors.

The Geological Survey of Ireland's Groundwater Vulnerability Mapping shows the groundwater vulnerability for the area of the SDZ lands within a catchment where groundwater vulnerability is considered Extreme and/or High.

4.4.4 Register of Protected Areas (RPA)

Protected areas are areas that have been designated as needing special protection because of their particular importance for use as bathing waters, drinking water supply, growing and harvesting of shellfish, conserving sensitive habitats and species or because they are particularly affected by eutrophication due to excessive inputs of phosphorus and/or nitrogen. The Griffeen River is a protected waterbody and drains into the River Liffey to the north, the main River Liffey are listed on the RPA for Nutrient Sensitive Waters. Nutrient Sensitive Areas comprise nitrate vulnerable zones designated under the Nitrates Directive (91/676/EEC) and areas designated as sensitive under the Urban Waste Water Treatment Directive (91/271/EEC).

4.4.5 Flooding and Flood risk

The Planning System and Flood Risk Management, Guidelines for Planning Authorities, 2009, issued by the DoEHLG and undertaken in conjunction with the OPW, requires Planning Authorities to prepare a Strategic Flood Risk Assessment (SFRA). The primary purpose of the SFRA is to determine flood risk within a particular geographical area, in this instance, the SDZ lands. It should be noted the SFRA is an ever evolving document, which is to be reviewed and updated on a regular basis in the light of emerging information, flood data and an improved understanding of flood risk. Section 4.20 of the above Guidelines states:

'Flood risk identification (Stage 1) to assess whether full flood risk assessment is required, should ideally be carried out in a manner that is integrated with the SEA process rather than constituting an additional and separate process. Any subsequent stages of flood risk assessment should also be carried out in a way that is integrated with the SEA process.'

A Strategic Flood Risk Assessment (SFRA)¹⁰ was prepared for the Draft Planning Scheme in accordance with the requirements of the DoEHLG and OPW Planning Guidelines, *The Planning System and Flood Risk Management*.

A strategic approach to the management of flood risk is important in Clonburris as it is primarily a greenfield development site, without any existing development in Flood Zone A/B. Therefore, the SDZ represents a clear opportunity to integrate the Guidelines at an early stage in the statutory process.

The SDZ lands are zoned - 'SDZ - to provide for strategic development in accordance with approved planning schemes' in the South Dublin County Council Development Plan 2016-2022. Having reviewed the proposed land uses within the Draft Planning Scheme, there is no overlap between zoned undeveloped lands that are subject to vulnerable uses and Flood Zone A or B. There is also no existing development that is at potential risk of flooding.

Given that the sequential approach has been applied, the requirement for site specific FRAs on most types of development within the SDZ is limited, consideration of the drainage strategy for each site is the overriding flood risk management measure at development management stage and this is discussed further in the SFRA prepared for the Draft Planning Scheme. Figure 18 below shows the SDZ lands at the County level Flood Risk indicative map (1% AEP).

¹⁰ Clonburris Strategic Development Zone (SDZ) Planning Scheme Strategic Flood Risk Assessment. 2017. JBA Consulting

Surface Water Strategy

A technical report was commissioned by SDCC¹¹ and prepared by JBA Consulting to specifically research and address surface water management on the lands. The SDZ Planning Scheme requires a strategy to manage surface water in a sustainable way by:

- Minimising the residual risk of flooding to each site;
- Ensuring there is no increased flood risk up or downstream from each development; and
- Maintain the existing greenfield runoff rates or potentially reduce the amount of surface water entering the piped sewer system.

The strategy also requires adequate levels of treatment of the surface water prior to discharge, which will be into local watercourses, namely the Griffeen and Camac watercourses.

The focus of the strategy is to manage surface water in a sustainable way, ensuring there is no unacceptable residual risk of flooding to each site; ensuring no increased flood risk up or downstream from each development. A fundamental part of the strategy is the provision of adequate levels of treatment of the surface water as it is proposed to discharge directly to existing watercourses.

This can be achieved through a detailed surface water strategy that incorporates new and existing drainage features to control and treat surface water runoff. The guiding principles for this strategy are shown in Table 8. The following surface water strategy provides a basis for sustainable development of the subject SDZ lands in terms of the management and control of surface water discharge from the site.

In terms of site development works, it is accepted that this strategy document will be developed as part of a detailed design process whereby all objectives will be realised within.

Table 8: Surface water strategy principles

	Principle	Purpose
1	Manage surface runoff at source	Prevention or reduction of surface water flows. The GDSDS states that there should be no discharge to a surface water body or sewer from the first 5-10mm of any rainfall event.
2	Manage water on the surface	The ability to intercept flows and direct them to areas designed to treat, store and discharge flows away from homes, businesses and transportation networks where disruption and flooding can occur
3	Integrate public space and drainage design	SuDS can provide intrinsically attractive features and focal points within the landscape and have added ecological value; by incorporating these features into open public spaces local communities can enjoy a variety of diverse ecological features.

¹¹ Clonburris Strategic Development Zone(SDZ) Planning Scheme Surface Water Management Plan Strategy
Final June 2017 JBA Consulting

Principle	Purpose
	The design of SuDS features within the open public spaces is required to be of high quality to achieve a multi- functional space for amenity, biodiversity and surface water management. In this context, design should have regard to The SuDS Manual (C753).
4 Effective operation and maintenance	A robust operation and maintenance schedule of SuDS measures should be produced and adhered to, to ensure SuDS measures are operating to their full capacity, and that life cycles can be extended as much as possible. SuDS designs and maintenance schedules should be agreed with those adopting them early in the planning process. It can be beneficial to make maintenance contracts mandatory in advance of SuDS construction. The lifespan of SuDS measure should also be considered in design.
5 Account for climate change and changes in impermeable area	20% allowance for climate change.

4.4.6 Existing issues – Water Resources

Through the pre-draft consultation on the planning scheme and the SEA Scoping process a number of issues were raised by consultees in relation to water resources. These are listed as follows:

- The existing status of the receiving waters of the Griffeen and Camac require improvements in ecological and chemical status to achieve the ‘good’ status of the WFD.
- Flood alleviation, tree planting and management plan
- Capture and re-use of grey water
- Minimise amount of unnecessary wastewater
- Urban Wastewater Directive requirements
- Collection of rainwater.

Other issues include the surface water management and the association between soil sealing and surface water run off.

The presence of alien invasive species within the site and potential for spreading along watercourses.

Ensuring that water quality is maintained and enhanced is particularly important. Groundwater in South Dublin currently meets the standards of the WFD, however, it is noted in the Greater Dublin Strategic Drainage Study (GDSDS) that there is a likely

possibility of the groundwater in the urbanised northern section of the County being at risk from diffuse sources including inadequate urban sewerage systems and point sources including some contaminated land. This section of the County is classified as being 'at significant risk' of failing to achieve the WFDs objective of 'Good' water status by 2027.

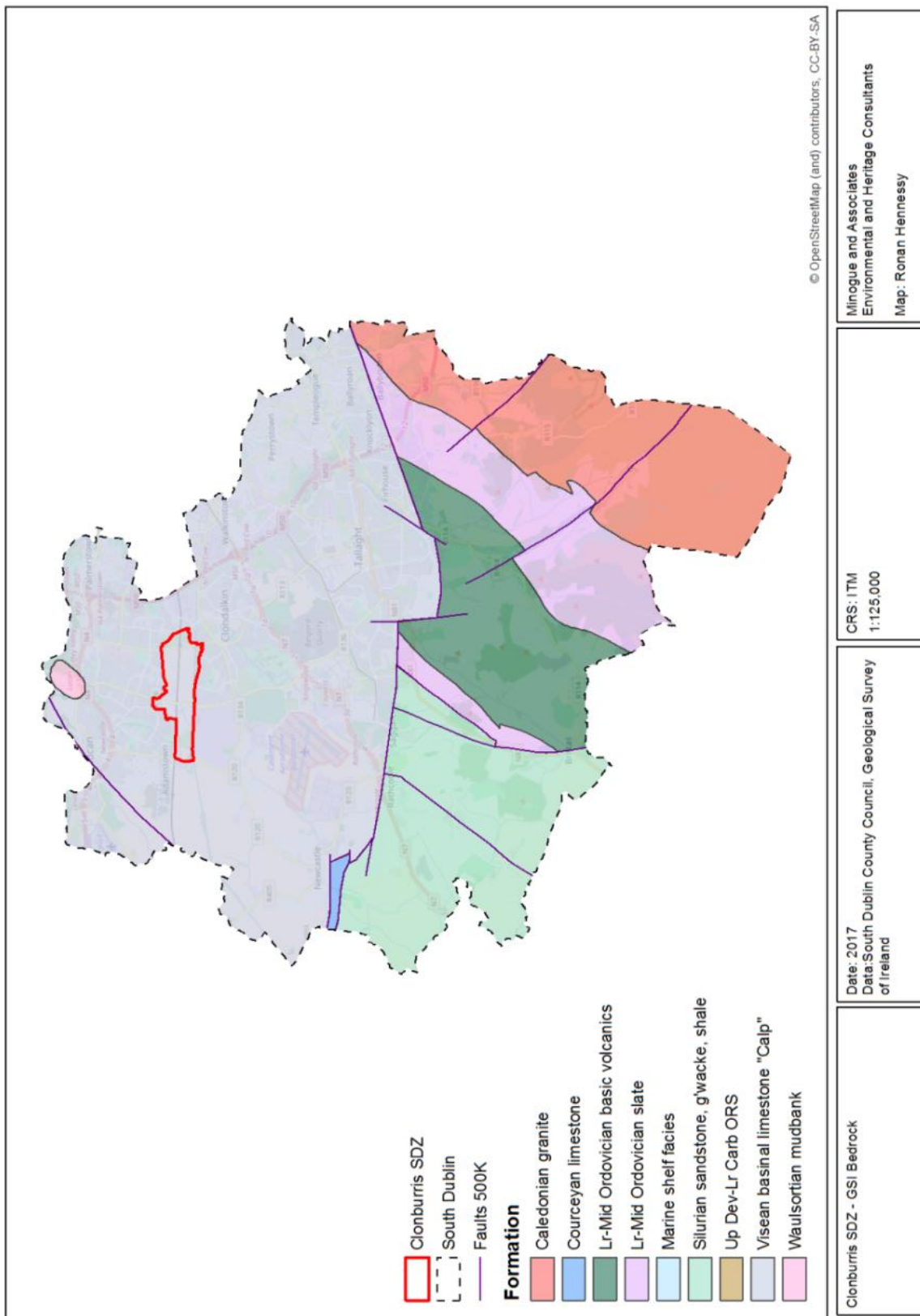
4.6 Geology¹² and Soil

4.6.1 Geology

The northern half of South Dublin including the SDZ lands, is formed of Carboniferous Limestone rocks deposited in a deep marine basin. These rocks were formed around 340 million years ago and are faulted against the older rocks along the base of the Dublin Mountains. The limestone deposited in this basin is a muddy limestone with few fossils, as it was generally a deeper water environment. This limestone underlies most of Dublin and is known as Calp limestone or 'the Calp'. Over the past 2 million years the Ice Age had a big effect on the landscape, eroding the mountains, depositing glacial gravels in places and then rivers such as the Dodder and Liffey have been active in recent times, modifying the sediments at surface. Figure 19 below shows the bedrock geology at County level, with the SDZ Planning Scheme outlined in red.

Figure 19 Bedrock Geology

¹² The Geological Heritage of South Dublin County. An audit of County Geological Sites in South Dublin County by Ronan Hennessy, Robert Meehan, Matthew Parkes, Vincent Gallagher and Sarah Gatley. GSI and SDCC 2014.

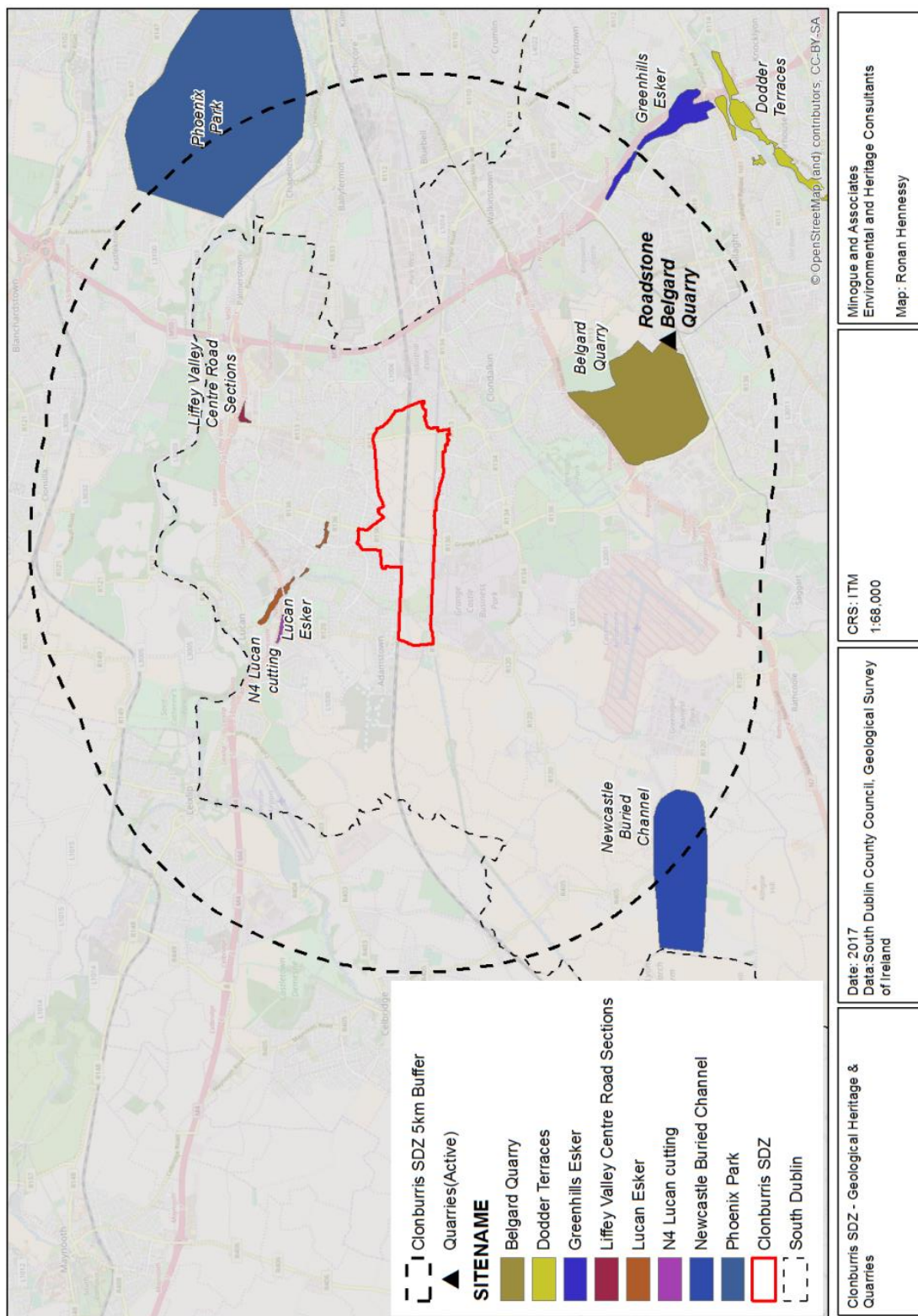


4.6.2 Geological Heritage and Extraction activities

County Geological Sites do not receive statutory protection like Natural Heritage Areas (NHA) but receive an effective protection from their inclusion in the planning system. Often the geodiversity underpins the biodiversity within an area or site, such as the case of eskers. In the context of the SDZ lands, the closest geological heritage sites are the Lucan esker and N4 cutting, both north of the SDZ lands.

In terms of active quarries, the Belgard Quarry, the largest limestone quarry in the County, is located to the south and is the only quarry present within 5km of the SDZ Planning Scheme. Figure 20 shows both the Geological Heritage Sites and quarries within a 5km buffer of the SDZ lands.

Figure 20 Geological Heritage Sites and Active Quarries



4.6.3 Soil

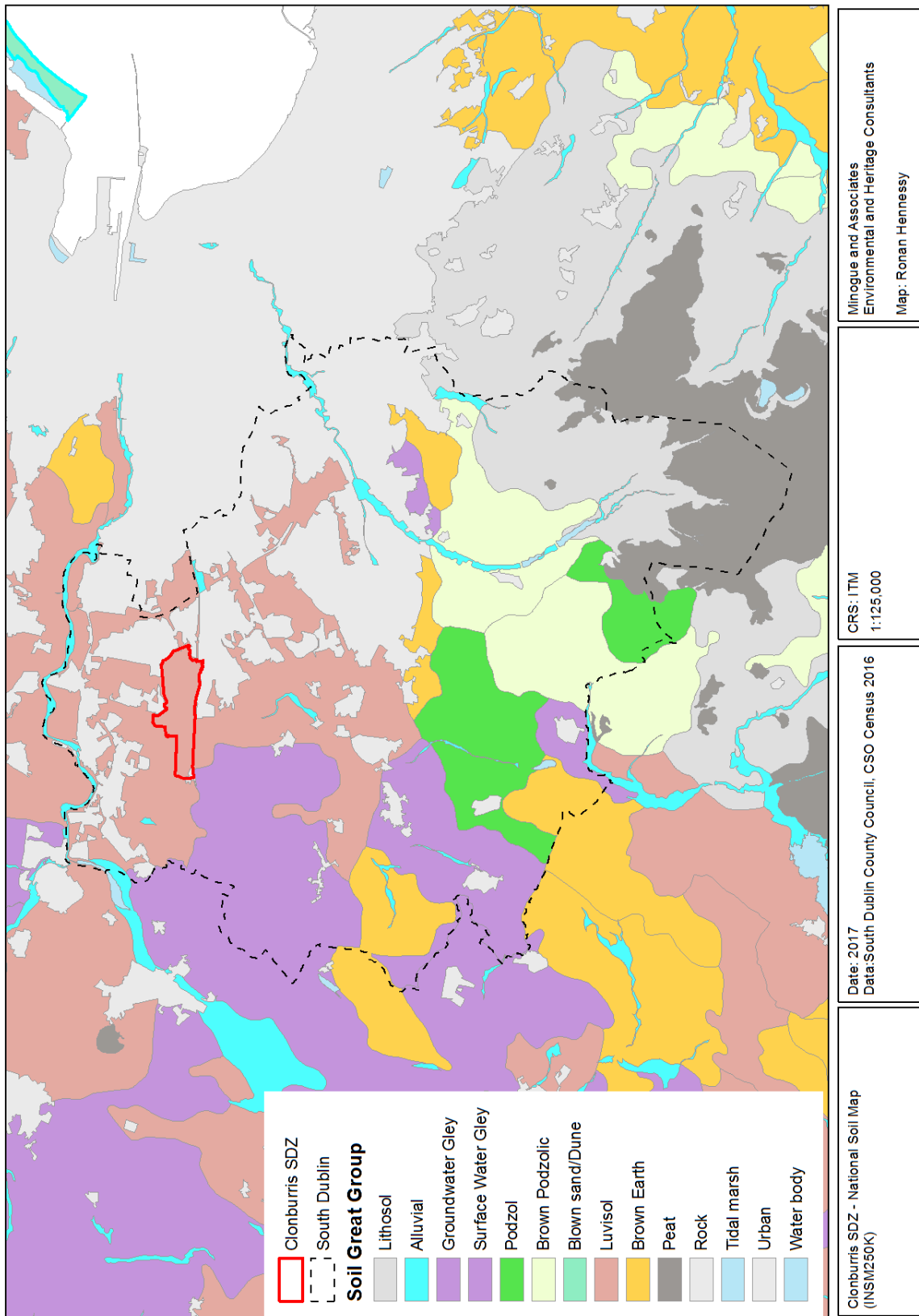
Soil can be considered as a non-renewable natural resource because it develops over very long timescales. It is an extremely complex, variable and living medium and performs many vital functions including: food and other biomass production, storage, filtration and transformation of many substances including water, carbon, and nitrogen. Soil has a role as a habitat and gene pool, serves as a platform for human activities, landscape and heritage and acts as a provider of raw materials. Such functions of soil are worthy of protection because of their socio-economic as well as environmental importance. Soils in any area are the result of the interaction of various factors, such as parent material, climate, vegetation and human action.

There is no overarching soil legislation in place currently, however the 7th Environment Action Programme (EAP) recognises the challenge of soil degradation and provides by 2020 that land be managed sustainably with soil adequately protected.

The soils on the SDZ lands are identified in the luvisol group; these are soils with clay enriched subsoil. The soils present on the SDZ lands in turn are part of the Elton Subseries of soils, defined by fine loamy drift with limestones. The bedrock in this area of South Dublin is '*Dinantian Upper Impure Limestones*'.

Figure 21 below presents the County soil map with Clonburris SDZ lands identified.

Figure 21 Soil map



4.6.4 Existing issues –Soils and Geology

Through the pre-draft consultation on the planning scheme and the SEA Scoping process a number of issues were raised by consultees in relation to soil and geology resources.

- Maintaining and enhancing soil function and its carbon storage role where possible.
- Retention of areas of greenfield in terms of open space, green infrastructure and biodiversity considerations.
- Addressing potential soil contamination associated with historical illegal dumping.
- Sustainable management and use of soil and geology on site during construction processes.

Because of the complex interrelationship between water, air and soil, declining soil quality can contribute to negative or declining water or air quality and function.

4.7 Climatic Factors and climate change

The context for addressing climate change and energy issues in South Dublin County, are set within a hierarchy of EU and National Legislation and Policy. At a European level these directives include, the EU Climate and Energy Package 2008, EU Renewables Directive 2009/28/EC and EU Energy Efficiency Directive 2012/27/EU.

The EU Climate Change and Energy Package 2008 resulted in the 2020 EU wide '20-20-20' energy targets as follows:

- a 20% reduction in EU greenhouse gas emissions from 1990 levels; raising the share of EU energy consumption produced from renewable resources to 20%; and
- a 20% improvement in the EU's energy efficiency.

Under the EU Energy Efficiency Directive 2009/28/EC, each Member State has been assigned a legally binding individual renewable energy target. The Directive's target for Ireland is that 16% of the national gross final consumption of energy will comprise renewable energy sources by 2020, across the electricity, heat and transport sectors.

The Climate Change and Low Carbon Development Act 2015 now provides a statutory, overarching basis for climate change in Ireland. It provides structures to transition to a low carbon economy through the following:

- a national mitigation plan (to lower Ireland's level of greenhouse emissions);
- a national adaptation framework (to provide for responses to changes caused by climate change); and
- tailored sectoral plans (to specify the adaptation measures to be taken by each Government ministry).

The EPA has identified a number of indicators and trends pointing to climate change with the clearest trend evident in the temperature records which show a mean temperature increase of 0.7° C between 1890 and 2008, i.e. an increase of 0.06° C per decade. The increase was 0.4° C during the period 1980-2008, i.e. equivalent to 0.14° C per decade.

Other Indicators are:

- Six of the ten warmest years in Ireland have occurred since 1990.
- A reduction in the number of frost days and shortening of frost season length.
- An increase in annual rainfall in northern and western areas with decreases or small increases in the south and east.
- These changes are reflected in Ireland's natural environment with an increase in the growing season and with greater number of animals suited to warmer temperatures being evident in Ireland and its surrounding waters.

Climate Change impacts are projected to increase in the coming decades and during the rest of this century. Uncertainties remain in relation to the scale and extent of these impacts, particularly during the second half of the century. The greatest uncertainty lies in how effective global actions will be in reducing greenhouse gas emissions.

Key predictions as they relate to climate change for Ireland are:

- The observed warming over the period 1981-2010 is expected to continue with an increase of ~1.5 degrees in mean temperatures by mid-century; the strongest signals are in winter and summer.
- Warming is enhanced for the extremes (i.e. hot or cold days) with highest daytime temperatures projected to rise by up to 2 degrees in summer and lowest night-time temperatures to rise by up to 2-3 degrees in winter.
- Milder winters will, on average, reduce the cold-related mortality rates among the elderly and frail but this may be offset by increases due to heat stress during summer.
- Winters are expected to become wetter with increases of up to 14% in precipitation under the high emission scenarios by mid-century; summers will become drier (up to 20% reduction in precipitation under the high emission scenarios).
- The frequency of heavy precipitation events during winter shows notable increases of up to 20%.
- Changes in precipitation are likely to have significant impacts on river catchment hydrology.
- The models predict an overall increase (0 to 8%) in the energy content of the wind for the future winter months and a decrease (4-14%) during the summer months.

A strategy towards Climate Change Action Plans was adopted in 2017 and represents the four Dublin Local Authorities commitment to jointly preparing an action plan that will be transboundary across the four Local Authority areas. Using a structured approach that focuses on seven key areas (Citizen & Stakeholder Engagement, Planning, Energy, Transport, Water, Waste, and Ecosystems & Biodiversity), this strategy sets out how the local authorities will develop the individual action plans that are unique to each local authority area but are synchronised in their methodology.

4.7.1 Energy and Climate Change Mitigation

As part of the planning scheme preparation, a Clonburris Energy Masterplan has been prepared by Element Energy and supported by Sustainable Energy Authority of Ireland (SEAI). This represents a strategic first step in the development of a co-ordinated energy response for the area in the medium to long term. The key focus of the Clonburris Energy Masterplan is to appraise a range of options – including energy efficiency, heating, cooling and electricity for the Planning Scheme.

As it is expected that the majority of new developments within the SDZ lands will occur during the 2020s, it is expected that all new buildings in Ireland will be subject to the Nearly Zero Energy Buildings legislation, which will represent a high level of energy efficiency.

The key objectives of this energy masterplanning study are to:

- Provide an over-arching energy strategy for the site and identify discrete project opportunities;
- Consider the site as a stand-alone community in the first instance, but also consider opportunities for integration with neighbouring developments;
- Demonstrate best practice and a future proof design, while taking account of crucial economic viability factors;
- Clearly illustrate the development of an evidence base and analysis of the energy provision options from which planning policy can be updated, and against which future planning applications can be assessed;
- Demonstrate the innovative use of an energy master planning process as an exemplar for other developments in Ireland.

The energy options available at Clonburris vary from ‘kick start’ local heat networks or district energy schemes, to more localised, block and individual building level opportunities. Viability and economic analysis of a range of options are included in the Energy Masterplan, which can be read in conjunction with this Planning Scheme and SEA ER.

4.7.2 Existing Issues –Climatic Factors

Through the pre-draft consultation on the planning scheme and the SEA Scoping process a number of issues were raised by consultees in relation to climatic factors. Several of these cross over to other SEA parameters:

- Flood risk and increased flood risk
- Renewable energy and solar panels

Adaptation to predicted climate change effects has been considered throughout the preparation phase and particularly focused on surface water management and increased precipitation, carbon sinks role and green infrastructure.

4.8 Cultural Assets

The Cultural Assets of the SDZ lands may be broken down into the following categories:

- Architectural Heritage;
- Archaeological Heritage.

4.8.1 Archaeology

Within the SDZ lands, there are two archaeological sites that have been listed in the Sites and Monuments Record for County Dublin. The sites are SMR No.DU017-035 (enclosure, Clonburris Little townland) and DU017-036 (enclosure, Cappagh townland).

Excavations at Grange Castle international business park to the south of the SDZ lands, revealed good evidence of Bronze Age activity associated with barrows. This excavation may suggest that the original distribution of barrows in South Dublin County could have been more extensive than at present, being distributed at both upland and lowland locations.

A review of archaeological test excavations was undertaken as part of this Environmental Report, this focused on testing carried out in close proximity to the SDZ lands. A summary is provided below:

The apparent absence of recorded prehistoric monuments is likely to be due to the removal of most above-ground traces of early sites and monuments by the intensive agriculture that has been practiced in this area for the last several millennia. However, recent excavations in the area uncovered numerous prehistoric monuments, and it is likely that there are further extensive subsurface features remaining to be uncovered. A Neolithic house has been excavated recently in Kishoge to the northeast of Grange Castle. Excavations in Kilmahuddrick uncovered a substantial ring barrow and a fulacht fiadh was revealed in the northern sector of Nangor townland.¹³

Table 9 below shows the recorded sites and monuments within a 500m of the SDZ lands.

Table 9 Sites and Monuments Record 500m buffer of draft Planning Scheme. Sites within SDZ Planning Scheme are presented in bold font.

Type	Reference	Townland	Scope Note
House 16th/17th century	- DU017-032002-	NEILLSTOWN	LBall (1906,118) mentions three or four cottages associated with the castle (DU017-032001-). These may be the 'three or four cabins' which are mentioned in the Civil Survey (1654-6). The area has been built on. Not visible at ground level.
Ritual site - holy tree/bush	- DU017-031--	BALGADDY (Uppercross By.)	In 1974 this was a large bush at the road junction. It has since been cleared. Named 'bush of Balgarry' on the OS 1936-7 edition. This may have been a holy bush. No visible trace at ground level.
Castle unclassified	- DU017-032001-	NEILLSTOWN	The castle was marked on the Down Survey (1655-6) map, approximately on the site of Neillstown House which was formerly located N of the present 9th lock on the Grand Canal.

¹³ Archaeological Monitoring Extension of Existing Dual Carriageway. Margaret Gowan & Co Ltd. 2003.
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Type	Reference	Townland	Scope Note
			Described in the Civil survey (1654-6) as 'the ruins of an old castle', (Simington 1945, 292). The site has been built on. Not visible at ground level.
Castle tower house	- DU017-029-- --	ADAMSTOWN (Newcastle By.)	Located on flat ground between the canal and the railway. A three-storey tower house, which was oblong in plan with a projecting turret and stepped crenellations. Demolished in the 1960s. Not visible at ground level.
Castle tower house	- DU017-034-- --	GRANGE (Newcastle By.)	Attached to a farmhouse in flat, low-lying ground. Shown as a castle on the Down Survey (1655-6) map. This is a rectangular tower house with a square tower that projects to the N in the NE corner. The tower house is three storeys high. In 1997 monitoring and excavation were undertaken in the vicinity of the castle, in advance of the construction of an access road and the excavation of foul sewers for a Business Park at Grange Castle. The evidence suggests that extensive early medieval and post-medieval activity survives in this area; the ditches can be interpreted as medieval field boundaries (O'Brien, R. 1998, 26-7).
Enclosure	DU017-035-- --	CLONBURRIS LITTLE	In field of rough pasture bordering the canal. An aerial photograph (FSI 1971/224-6) shows a horseshoe-shaped enclosure. Not visible at ground level.
Enclosure	DU017-036-- --	CAPPAGH	Situated in rough pasture on fairly level ground N of a stream. An aerial photograph taken in 1971 (FSI 206/5/4) shows a cropmark of an elongated oval enclosure (est. dims. NE-SW c. 34m; NW-SE c. 22m). Not visible at ground level.
Church	DU017-038001-	KILMAHUDDRICK	Situated in the NE corner of a rectangular disused graveyard close to Deansrath Estate. This is a medieval parish church which served the smallest parish in the County. It is dedicated to St. Cuthbert of Lindesfarne and was held by St. Mary's Abbey, Dublin from 1186 until 1540 when it was re-united with Clondalkin (Ball 1940, 182-183). Comprises a nave and chancel divided by a two-centred chancel arch. Built of undressed random rubble masonry. To the S of the graveyard is a possible moated site (DU017-038001-; see Ní Mharcaigh 1977, 270-271).
Graveyard	DU017-038002-	KILMAHUDDRICK	Located in a flat, low-lying area. This is a rectangular disused graveyard close to Deansrath Estate. Remains of a medieval parish

church (DU017-038001-) stand in the NE corner of the graveyard. Very few gravestones remain visible. It contains some 19th century memorials. Attached to the S side of the graveyard is a possible moated site (DU017-038003-).

Moated site	DU017-038003-	KILMAHUDDRICK	Located in flat, low-lying land attached to the S side of Kilmahuddrick graveyard (DU017-038002-). A roughly rectangular enclosure which is defined by a flat-topped earthen bank and wide outer fosse. There is a causeway across the fosse in the NE and a corresponding break in the enclosing bank.
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4.8.2 Built Heritage

The Architectural Heritage (National Inventory) and Historic Monuments Act 1999 defined architectural heritage as being all '*structures and buildings together with their settings and attendant grounds, fixtures and fittings; groups of structures and buildings; and, sites which are of technical, historical, archaeological, artistic, cultural, scientific or social interest.*'

The Planning and Development Act 2000 (as amended), provides for a number of methods of preservation of such structures. These include the Record of Protected Structures (RPS) and the designation of Architectural Conservation Areas (ACA).

The County Development Plan 2010-2016 designated five Architectural Conservation Areas (ACA) in South Dublin. The closest ACAs to the SDZ Lands are Lucan Village to the north and Clondalkin Village to the east of the SDZ lands.

In addition to these identified areas, numerous additional structures worthy of preservation are located throughout the County, many relating directly to the pastoral rural condition of the County up until recent times. Such buildings or structures are noted within the RPS. Protected Structures are defined as structures, or parts of structures that are of special interest from an architectural, historical, archaeological, artistic, cultural, scientific, social or technical point of view.

In terms of architectural heritage, the national inventory of architectural heritage lists both the 11th and 10th Locks of the Grand Canal, and the associated lockhouse at the 11th Lock, considered to be designed by Tomas Omer as being of regional importance. This house, now derelict is thought to date from around 1790. As an indication of the architectural merit of the Grand Canal, all 5 Protected Structures within the SDZ lands that are listed under the South Dublin County Council Development Plan 2016 – 2022 relate to the Grand Canal as follows:

Table 10 Protected structures within SDZ lands.

Map & RPS Ref.	Address/Location
122	Omer Lock House
123	10 th Lock
125	12 th Lock
127	Leck Bridge
128	11 th Lock

The figure below shows both known archaeological and built heritage features within and adjacent to the draft Planning Scheme.

4.8.3 Existing issues –Cultural assets

Through the pre-draft consultation on the planning scheme and the SEA Scoping process number of issues were raised by consultees in relation to cultural assets.

- Potential for discovery of additional archaeological resources
- Recognising the cultural heritage of the Grand Canal
- Enhancing and linking cultural heritage of the area into the overall planning scheme.
- Preserve and create a sense of heritage and identity
- Survey to establish if any architectural heritage on and in proximity to site

4.9 Material Assets

The EPA SEA Process Draft Checklist (2008) defines material assets as the critical infrastructure essential for the functioning of society such as: electricity generation and distribution, water supply, wastewater treatment, transportation, etc. An overview is provided below.

4.9.1 Transport

Public Transport

Until recently, buses have been the predominant form of public transport in South Dublin. Significant progress has been made in the last ten years in relation to the provision of rail transport in the County. Major projects include the Luas Red Line, and Adamstown Train Station to the immediate west of the Clonburris SDZ lands. The latter has been developed as part of the Kildare Route Project which also duplicated the rail line and introduced a new series of suburban commuter rail stations including Kishogue and Fonthill. The opening of the Phoenix Park Rail Tunnel which connects commuters from the Kildare Line to Dublin City now provides peak services from Kildare to Grand Canal Dock.

A Transport assessment has been undertaken for the SDZ Planning Scheme and a summary of the existing transport baseline is provided below.

Cycle Facilities

The Grand Canal Greenway which links Lucan to Inchicore in the City Centres passes through the SDZ lands and provides 8.5km of path for both cyclists and walkers along the southern towpath. The northern towpath is used by walkers albeit at lower usage levels than the more developed, surfaced southern towpath.

The Fonthill and Grange Castle Roads which bisect the SDZ lands both include segregated cycle facilities offering links to Lucan Village, Liffey Valley and the N4.

Walk Facilities

The Grand Canal Greenway which links Lucan to Inchicore in the City Centres passes through the SDZ lands and provides 8.5km of path for both cyclists and walkers.

The Fonthill and Grange Castle Roads both have good quality segregated footpaths linking to Adamstown, Lucan Village, Liffey Valley and Grange Castle.

Public Transport Services

The Clondalkin/Fonthill Train Station is served by commuter services operating to Heuston Station.

The opening of the Phoenix Park Tunnel offers connections to Drumcondra, Connolly, Tara Street, Pearse St and Grand Canal Dock.

A number of bus routes pass within close proximity to the Planning Scheme including a mix of radial, orbital and local services mainly operated by Dublin Bus.

Road Network

The SDZ lands are bisected by the Grange Castle Road (R136), and the Fonthill Road (R113) which provide connectivity to the N4, N7 and M50.

Base Transport Demand

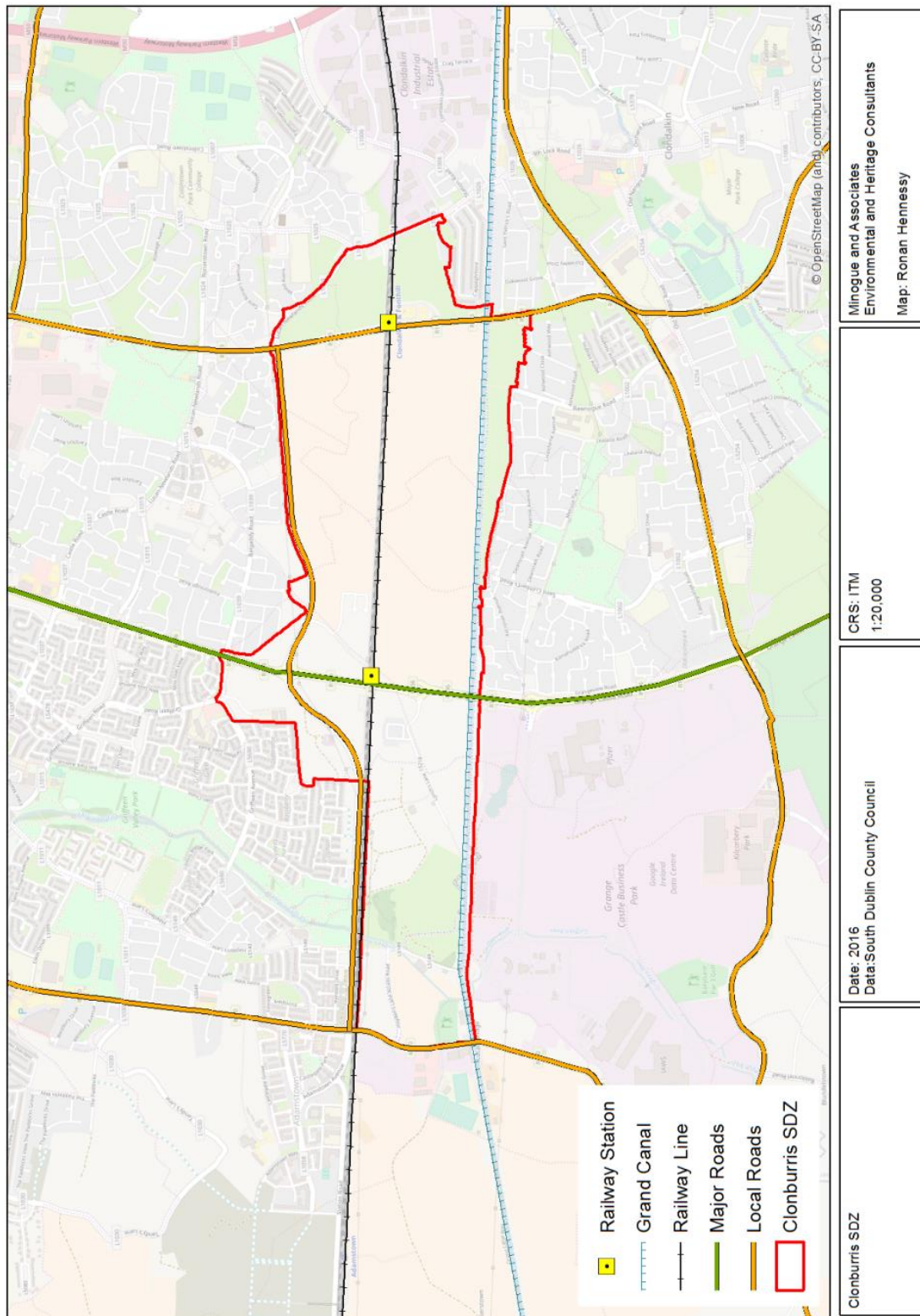
51% of trips which originate within the area bounded by the N4, N7 and M50 remain within this sector for the AM peak period.

A large proportion of trips are travelling to sectors which are servable by sustainable modes ie: walking, cycling and public transport.

High level of public transport mode share for city centre trips in the AM peak.

Figure 23 below shows the current transport network around the SDZ Planning Scheme.

Figure 23 Existing Transport Network



4.9.2 Wastewater and water supply

The treatment of wastewater is governed by the Urban Waste Water Treatment Directive (91/271/EEC) (amended by Directive 98/15/EEC) transposed into Irish law by the Urban Waste Water Treatment Regulations 2001 (SI 254 of 2001) and the Urban Waste Water Treatment (Amendment) Regulations 2004 (SI 440 of 2004). The Directive aims to protect the environment from the adverse effects of the wastewater discharges by ensuring that wastewater is appropriately treated before it is discharged to the environment. The treatment of wastewater is relevant to the Water Framework Directive which requires all public bodies to coordinate their policies and operations so as to maintain the good status of water bodies which are currently unpolluted and bring polluted water bodies up to good status by 2027.

Water Services

Irish Water confirms that there is generally sufficient capacity in the public water services networks in the vicinity of the SDZ site to connect developer provided water service infrastructure to their networks (subject to the signing of a connection agreement with Irish Water). The projected population of Clonburris SDZ has been taken into account in Irish Water's long term planning for water services capacity in the GDA. A number of major infrastructure project are being progressed to provide long term capacity to service projected demand into the future through Irish Water's multi annual Investment Programmes.

Wastewater

Wastewater generated within the SDZ lands will drain to the Ringsend WWTP. At present this plant is overloaded. However a project is in place to increase capacity and meet the effluent discharge limits required. These works are planned to proceed in stages to deliver a compliant effluent, at projected increased loads, with the full capacity of 2.4 m population equivalent completed by 2023. There are also plans to construct a new WWTW to the north of Dublin City which will permit flows to be diverted from the Ringsend catchment, thus ensuring that the capacity of Ringsend will be adequate to cater for growth in that catchment well into the future.

Water

The SDZ lands are located within the Greater Dublin Water Supply Area (GDWSA). It is anticipated that the development of the Clonburris SDZ will exert a water demand of circa 0.3ML/day by 2020 and 5.4 ML/day by 2035 based on full build out of 8,500 housing units and associated commercial and town centre areas.

The GDWSA is served by 5 major water treatment plants, Ballymore Eustace, Srowland, Leixlip, Ballyboden and Vartry, and a number of smaller sources. The total capacity of current sources and treatment plants is 598ML/day and based on proposed capital investment between 2017 and 2021 this water available from existing sites will increase to 656ML/day. It is anticipated that Dublin will need a new major water source by 2025, based on projection of growth in the Greater Dublin Area. Irish Water is currently

planning the development of a new major water source for the East and Midlands which will include supplying projected demand in the GDA water supply area. Irish Water is also currently implementing a major water conservation programme in order to maximise the availability of treated water from current sources. Development generated in the Clonburris SDZ has been included in the projected demand for the GDA Water Supply Area.

4.9.3 Waste Management

The Regional Waste Management Plan 2015-2021 for the Eastern-Midlands Region encompasses the local authorities: Dublin City, Dún Laoghaire- Rathdown, Fingal, South Dublin, Kildare, Louth, Laois, Longford, Meath, Offaly, Westmeath and Wicklow.

The regional plan provides the framework for waste management for the next six years and sets out a range of policies and actions in order to meet the specified mandatory and performance targets.

The Waste Framework Directive"(WFD) has incorporated previous separate directives that addressed waste oils and hazardous waste. Principles in relation to waste prevention, recycling, waste processing and the polluter pays principle are included within this Directive.

In 2014 the EC adopted a communication promoting the Circular Economy, The circular economy considers waste as a resource which in turn can be recirculated into systems that focus on maintaining, repairing, reusing, refurbishing and recycling materials.

Denmark, Sweden, Japan, Scotland and the Netherlands¹⁴ are currently the most advanced countries in terms of embedding the circular economy into their waste management system. Key elements of the communication include:

- Increase recycling and preparing for municipal waste to 70% by 2030
- Increase recycling and preparing for reuse of packaging waste to 80% by 2030
- An aspiration to eliminate landfill by 2030
- Member states to be responsible for ensuring the separate collection of biowaste by 2025.
- Reduction of food waste by at least 30% by 2025.

Waste is baled at the SDCC Baling Station at Ballymount and is disposed of in the Council's engineered landfill at Arthurstown, Co. Kildare. In addition, South Dublin County Council will be committing a certain amount of waste to the thermal treatment plant in Ringsend within Dublin City Councils administrative area, the construction and use of which forms a part of the waste management strategy for the Greater Dublin Area.

¹⁴ <http://circulatenews.org/2015/04/an-introduction-to-circular-economy-in-scandinavia-sweden-and-denmark-leading-the-race-to-circularity/>

4.9.4 Gas supply and telecommunications

The SDZ lands can be serviced by existing high pressure transmission gas pipes that run in a north – south direction adjacent to the Fonthill Road and the Grangecastle Road.

The provision of IT, broadband internet and high speed telecommunications infrastructure to the SDZ lands as a whole will enable activities such as education uses, community facilities, home office working and commercial business to prosper.

4.9.5 Existing issues –material assets

Through the pre-draft consultation on the planning scheme and the SEA Scoping process number of issues were raised by consultees in relation to material assets, these are summarise below:

- Waste management facilities
- Proper litter control and waste separation, recycling and composting
- Concerns in relation to existing traffic capacity on roads
- Improved public transport

In addition, other issues relating to material assets include:

- Potential transfer of harmful and contaminating substances through surface water drainage system which ultimately empties to Dublin Bay, thereby providing a hydrological link to the suite of European sites located within the Bay;
- Provision of adequate wastewater treatment with regards to any additional loading which may result with proposed development

The EPA State of the Environment Report 2016 states:

In relation to transport, there needs to be support for a shift from the private car to an efficient sustainable transport system through a more proactive and systematic approach to land use and transport planning.

4.10 Landscape

4.10.1 Existing baseline description

The SDZ lands are located in a wedge of land – formerly a continuation of the agricultural landscape lying to the west. The lands are remnant urban fringe lands that had been rural but were gradually surrounded by suburban land uses, principally housing. The lands are low lying, flat and open with small fields. Landuse is primarily rough grassland or a mix of grassland and shrubs. Old, and somewhat neglected hedgerows define field boundaries. Hummocks in some of the fields suggest former dumping activity. Two areas of neglected woodland copses are located along Foley's Lane, and opposite Weatherland Business Park on the Lucan-Newlands Road. (R113). The former woods would have been associated with the now derelict Cappagh House.

The SDZ lands are defined to the south by the Grand Canal; to the north by a link road; to the west by intermittent developments including dwellings, and commercial premises; and to the east by predominantly residential development.

Three major roads transect the site; to the east the north to south Fonthill Road; to the west, the north south Grangecastle Road; and to the north, the east-west link road. A commuter rail line, runs east – west through the lands, with two stations at Clondalkin/Fonthill to the east, and Kishogue to the west. The large complex of Grangecastle Business Park is a dominating feature located to the immediate southwest of the SDZ. Lynch's Lane runs diagonally across the lands and is bisected at Kishogue by the Grangecastle Road. Hayden's Lane is located off Lock Road to the west and continues over the Griffeen River to the canal. A small pitch and putt course is located in the south western corner of the SDZ lands.

Developments through the lands are sparse- the railway stations, a halting site on the lower end of Lynch's lane with a South Dublin County Council works depot and an ESB sub- station further along the land; a community school and halting site at Kishogue on the upper end of Lynch's Lane.

The Grand Canal, a pNHA, is the most important semi natural resource within the SDZ lands. The Griffeen River runs through the western sector of the SDZ lands, flowing under the canal and discharging into the river Liffey at Lucan weir. The Kilmahuddrick stream discharges from the west into the Griffeen River.

As the SDZ lands are low-lying and enclosed on three sides by housing development, views are limited. The panorama of the Dublin Mountains to the south dominates the skyline. When viewed from other quarters, the SDZ lands will be seen in the context of the fully developed suburbs of Adamstown, Ronanstown, and Clondalkin.

4.10.2 County Development Plan 2016 -2022 Designations

The formal designation of the character of the landscape is contained within the County Development Plan 2016- 2022, S. 9.2.0, and in the County Landscape Character Assessment-(2015). The Assessment locates the SDZ in LCA 5- Suburban South Dublin described as a built- up urban area with extensive housing estates and industrial, commercial parks and major traffic corridors. The LCA borders onto the LCA 2 Newcastle Lowlands and as a remnant landscape extending into the character area, it shares some of its features – essentially former low lying agricultural lands

Table 6A in the LCA sets out landscape character types; identifies forces for change and makes recommendations. The SDZ is urban with built lands and historic settlements within the larger urban areas. Many composed of established villages that have evolved and are now surrounded with residential developments primarily from the 20th century with significant developments in the past two decades.

Forces for change relevant to the SDZ are loss of greenspace and poor ecological connectivity, and the challenge of providing sufficient and appropriate green space within the urban environment.

Recommendations included the importance of siting and boundary treatment of new residential developments; and stronger use of hedgerows for visual screening.

Table 9.1 of the LCA recommends views and prospect that should be protected; whilst the Grand Canal viewpoints were not included in the CDP 2016-2022, most of the hills including Montpelier Hill are listed in the CDP at Table 9.2 In the context of the SDZ Planning Scheme the following views and prospects though not protected in the SDCDP 2016-2022 are nonetheless relevant and significant:

- the view from any point along the Grand Canal;
- and the ridge line of the Dublin Mountains, Montpelier Hill to the Tallaght Hills.

4.10.3 Key Sensitivities in the landscape surrounding the SDZ lands

The elements that most strongly establish the character of the surrounding landscape are the panoramic views of the Dublin Mountains and the view westwards of the rural hinterland. The significance of the effects on the character and appearance of the landscape will be in proportion to the degree these elements are affected.

4.10.4 Key Landscape Sensitivities within the Planning Scheme

The elements that establish the character of the landscape are listed below. The significance of the effects on the character and appearance of the landscape will be in proportion to the degree these elements are affected.

- The Grand Canal as a valuable resource for recreation and biodiversity
- The loss of a remnant rural landscape in an otherwise heavily urbanised setting.
- The panoramic views of the Tallaght Hills
- The views from the Grand Canal in all directions
- The Griffeen River as a green infrastructure resource
- The protection of the Kilmahuddrick Stream
- The relationship with the Grand Canal, the Griffeen River and the Kilmahuddrick Stream at the south west corner of the lands
- The existing hedgerows, which provide ecological connectivity and biodiversity, and afford opportunities for screening within the planning scheme

4.10.5 Existing Issues -Landscape

Through the pre-draft consultation on the planning scheme and the SEA Scoping process a number of issues were raised by consultees in relation to landscape.

- Consider provision of allotments and roof gardens
- Design and layout of housing,
- Grand Canal and
- Open space considerations.

Recent and new residential, commercial and transportation developments, notably roads, and site preparation works have resulted in changes to the landscape and the visual appearance of the landscape surrounding the SDZ lands.

4.11 Green Infrastructure

Green infrastructure is a **strategically planned network of natural and semi-natural areas** with other environmental features designed and managed to deliver a wide range of ecosystem services such as water purification, air quality, space for recreation and climate mitigation and adaptation. This network of green (land) and blue (water) spaces can improve environmental conditions and therefore citizens' health and quality of life. Green infrastructure planning is a successful and tested tool to provide environmental, economic and social benefits through natural solutions and help reduce dependence on 'grey' infrastructure that is often more expensive to build and maintain.

The European Commission has developed a Green Infrastructure Strategy 2013 and the DG Environment Manual on Green Infrastructure provides an overview of the contribution Green Infrastructure can make:

“Building a green infrastructure is one of Europe’s main contributions to reversing the trend of biodiversity loss and to linking and strengthening diverse ecosystems in urban and rural areas. The added value of green infrastructure, arises from its multifunctional use: it often ensures efficient and sustainable land use by integrating interacting functions or activities on the same piece of land. The spatial character of green infrastructure addresses both the issue of connectivity and the provision of ecosystem services (e.g. natural coastal protection through marshes/flood plain restoration; such climate change mitigation and adaptation measures are often more effective and cheaper than building dikes).”

Key green infrastructure assets within the SDZ lands include the following:

- Grand Canal
- Rivers and watercourses including the Griffeen, Camac and Kilmahuddrick stream
- Riparian vegetation associated with watercourses.
- Hedgerow network.

4.11.2 Existing issues –green infrastructure

It was agreed at SEA Scoping stage to include a specific topic of Green Infrastructure to this SEA to ensure this issue was highlighted and addressed through the preparation of the draft Planning Scheme.

The key challenge in this regard will be to retain, and enhance where possible green and blue infrastructure within the SDZ Planning scheme. The Surface Water Strategy has identified a series of SUDs features, and these can be designed to support and enhance blue infrastructure through the SDZ lands.

4.12 Likely evolution of the environment in the absence of the Planning Scheme

The SEA legislation requires that consideration is given to the likely evolution of the current baseline where implementation of the SDZ Planning Scheme does not take place. In the absence of the Planning Scheme the environment would evolve under the regime of

the existing Planning Scheme and the requirements of the South Dublin County Development Plan 2016- 2022 as follows:

CS2 Objective 1: To promote and facilitate urban expansion on designated Strategic Development Zone sites at Adamstown and Clonburris, in tandem with the delivery of high capacity public transport services and subject to an approved Planning Scheme.

Principal environmental issues in the absence of the SDZ Planning Scheme:

- Soil: Given the considerable changes to the environmental baseline associated with converting significant land surfaces from greenfield land to built land, the role of soil absorption and the issue of soil sealing would not be addressed at whole of site level. This would not be assessed comprehensively and could give rise to increased surface water run off levels with accompanying issues around increased flood risk, damage to material assets, inundation of lands and biodiversity and landscape effects.
- Air Quality: in the absence of the new SDZ Planning Scheme opportunities to develop a comprehensive transport strategy that promotes sustainable transport patterns and reduces private vehicles would not take place. This could give rise to localised air quality issues particularly around the existing regional roads.
- Noise: The absence of the Planning Scheme could limit the means to implement mitigation measures that can generate multiple benefits through noise abatement measures and green infrastructure, particularly around the railway line and the above regional roads.
- Noise: Aligned to this, the identification of the Grand Canal as a noise sensitive area may not be fully addressed and planned for the absence of the SDZ Planning scheme, with subsequent impacts on human health and biodiversity, flora and fauna in particular.
- Biodiversity, flora and fauna: The provision of appropriate buffer zones particularly around the watercourses would likely be the minimum of 30m; however the new, Planning Scheme provides for a 50m set-back for all buildings from the northern side of the Grand Canal, to afford the optimal degree of protection to the Grand Canal ecological corridor. Additional measures have been incorporated through the SEA process as regards maintaining the integrity of the riparian habitats associated with the Canal and other watercourses.
- Biodiversity: In the absence of the SDZ planning scheme, the ecology studies have identified areas of particular importance for biodiversity and also located the identification and presence of invasive species. The absence of a co-ordinated approach to these issues in the overall spatial planning would be absent and a piecemeal approach to development may arise; this could generate effects associated with loss of habitat, habitat fragmentation and connectivity, and the spread of alien and invasive species.
- Green Infrastructure: In the absence of the new SDZ Planning scheme there would be little or no consideration given to the integration of green and blue infrastructure for the overall scheme and this could give rise to effects associated

with increased surface run off, habitat fragmentation, loss of ecological connectivity and multifunctional open space associated with new development.

- Population and human health: In the absence of mitigation associated with the SDZ Planning scheme, human health has the potential to interact with environmental problems identified under other parameters including biodiversity, flora and fauna, cultural assets, soil and geology, water resources, material assets, landscape and green infrastructure.
- Biodiversity, Population and Human health: in the absence of the scheme opportunities for innovative proposals associated with temporary greening of lands or allotment growing are not developed.
- Waste management: in the absence of the scheme issues around illegal dumping and measures to remedy this may continue. In addition, the opportunity to develop innovative waste management would not take place.

4.13 Interrelationship of the above components

In accordance with the SEA Directive, the interrelationship between the environmental parameters above must be taken into account. Although all such parameters may be considered interrelated and may impact on each other at some level environmental sensitivity mapping is commonly used to help identify areas of greater or lesser sensitivity. The map on Figure 24 shows the overall environmental sensitivity for the plan area and sphere of influence, and follows the same approach (ie: ranking of environmental parameters) as that used in the South Dublin CDP 2016-2022 SEA process.

By mapping key environmental layers (GIS) to produce an environmental sensitivities map, it provides a visual impression which can assist in identifying which areas within the Plan area experience the highest concentration of environmental sensitivities and consequently the areas potentially most vulnerable to potential environmental impacts from development. This can be a useful guide when considering the strategic options in relation to the plan during the early stages in the plan making process, and identifying areas that are of greater or lesser vulnerability. Figure 24 shows the environmental sensitivity map for the SDZ lands and Figure 25 shows the key interrelationships between environmental parameters.

Figure 24 Environmental Sensitivity Map SDZ lands.

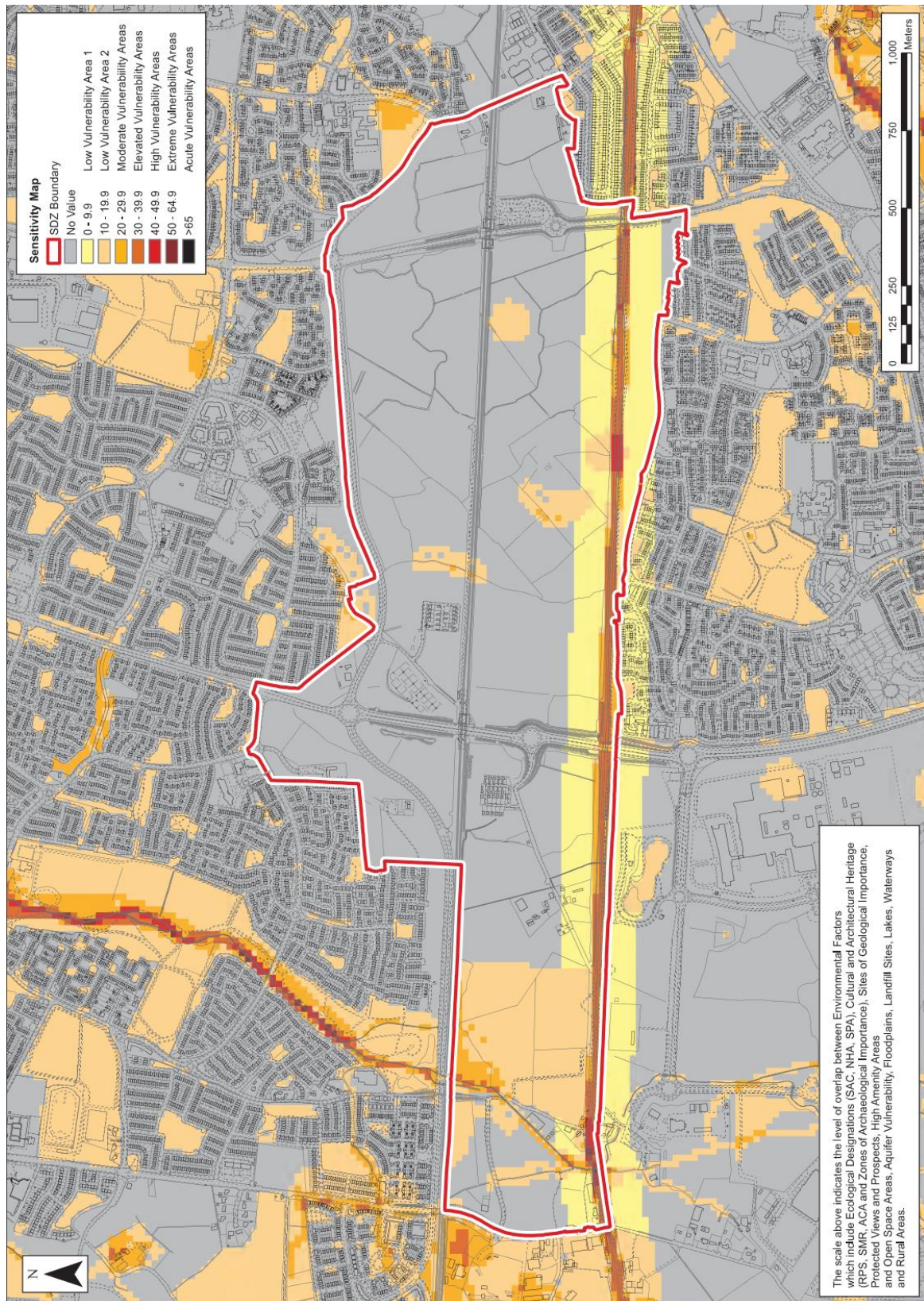
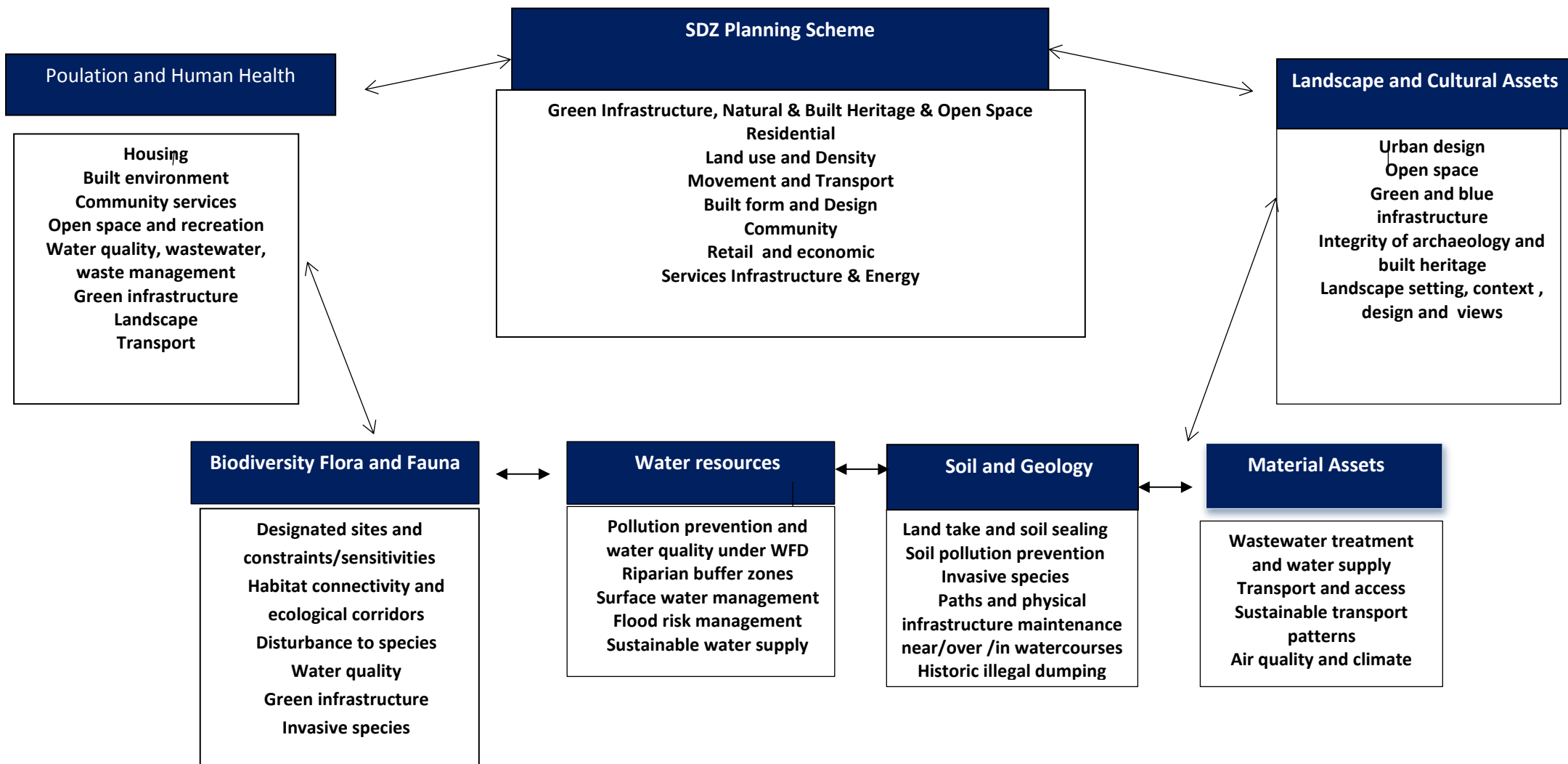


FIGURE 25 PRIMARY ENVIRONMENTAL INTER-RELATIONSHIPS



5.0 Strategic Environmental Objectives

5.1 Introduction

This overall aim of the SEA is to facilitate environmental protection and to allow the integration of environmental considerations into the preparation and implementation of the Clonburris- Balgaddy SDZ Planning Scheme. To that end, the SEA process assesses the draft Planning Scheme as it evolves in terms of its environmental impacts, positive, negative, neutral, cumulative and synergistic and also in terms of duration i.e. short, medium, long term, temporary, permanent, and secondary effects. This process highlights how improvements can be integrated into the planning scheme to increase its environmental performance and maintain environmental resources. The purpose of the SEA Objectives is to ensure that the assessment process is transparent and robust and that the Clonburris SDZ Planning Scheme considers and addresses potential environmental effects.

These SEA Objectives are presented in this chapter and are developed into a monitoring programme in the form of targets and indicators which are presented in more detail in Chapter Nine Monitoring Programme. To facilitate consistency with the primary landuse plan for the County and reflect data gathering requirements, these SEOs reflect where possible the SEOs developed for the SEA of the South Dublin CDP 2016-2022. Where necessary the SEOs are adapted to reflect particular environmental considerations for this Planning Scheme. Where they differ from the South Dublin CDP 2016-2022 objectives, the text is shown in **italic bold font**. The results of this will be summarized in a table, called an evaluation matrix.

The Proposed Strategic Environmental Objectives are as follows:

Table 11 Proposed Strategic Environmental Objectives

SEA Topic	Strategic Environmental Objectives
Biodiversity Flora and Fauna	To avoid loss of habitats, geological features, species or their sustaining resources in <i>and outside of</i> ¹⁵ designated and ecological sites To avoid significant adverse impacts, including direct, cumulative and indirect impacts, to habitats, geological features, species or their sustaining resources in designated ecological sites by development within or adjacent to these sites To sustain, enhance or - where relevant - prevent the loss of ecological networks or parts thereof which provide significant connectivity between areas of local biodiversity
Population and human health Noise	To protect human health from hazards or nuisances arising from traffic and incompatible landuses <i>in particular noise and light pollution</i>

¹⁵ Amended on foot of submission by NPWS at SEA Scoping Stage.

SEA Topic	Strategic Environmental Objectives
Water	To maintain and improve, where possible, the quality of rivers, lakes and surface water including Grand Canal, Griffeen River and streams within the Clonburris SDZ Planning Scheme.
	To prevent pollution and contamination of ground water
	To prevent development on lands which pose - or are likely to pose in the future – a significant flood risk
Soil and Geology	To conserve soil resources where possible
Material Assets	To maintain and improve the quality of drinking water supplies
	To serve new development under the Planning Scheme with appropriate waste water treatment
	To reduce car dependency within the SDZ Planning Scheme by way of, inter alia, encouraging modal change from car to more sustainable forms of public transport and encouraging development which will not be dependent on private transport
	To minimise waste production and reduce the volume of waste to landfill and to operate sustainable waste management practices.
Air Quality and Noise	To minimise air, noise and light pollution where possible.
Cultural Heritage	To protect the archaeological heritage of Clonburris SDZ Planning Scheme with regard to entries to the Record of Monuments and Places - including Zones of Archaeological Potential - and the context of the above within the surrounding landscape where relevant
	To preserve and protect the special interest and character of Clonburris SDZ Planning Scheme architectural heritage with regard to entries to the Record of Protected Structures, and their context within the surrounding landscape where relevant
Landscape	To protect and avoid significant adverse impacts on the landscape, landscape features and designated scenic routes; especially with regard to areas of high amenity and the Grand Canal
Climate Change and energy	To integrate climate change adaptation to the Clonburris SDZ Planning Scheme
	To enhance energy efficiency through the Energy Masterplan
Green Infrastructure	To support green infrastructure measures through the Planning Scheme where possible.

6 Consideration of Alternatives

6.1 Introduction

One of the critical roles of the SEA is to facilitate an evaluation of the likely environmental consequences of a range of alternative development scenarios, in this case the Planning Scheme of Balgaddy Clonburris Strategic Development Zone (SDZ).

These alternative development scenarios should meet the following considerations:

- Take into account the geographical scope, hierarchy and objectives of the plan –be realistic
- Be based on socio-economic and environmental evidence – be reasonable
- Be capable of being delivered within the plan timeframe and resources –be implementable
- Be technically and institutionally feasible – be viable

This chapter presents the approach to considering and assessing the alternatives for the Planning Scheme. Section 6.2 presents the alternative scenarios. Section 6.3 explains how the assessment of alternatives was undertaken; Section 6.4 presents the evaluation of the alternatives for potential environmental effects. This in turn informed the selection of a preferred alternative for the Planning Scheme which is presented in Section 6.5.

6.2 Alternative Scenarios for Planning Scheme

6.2.1 Do-Nothing Scenario

A Planning Scheme was approved for part of the lands in 2008. In 2015 however; the Government ordered the designation of approximately 280 hectares of land at Clonburris, as a site for the establishment of a Strategic Development Zone (SDZ). Order 2015 (S.I. No. 604 of 2015) established and extended the designated area for Balgaddy-Clonburris SDZ. A revised draft Planning Scheme must be prepared for the designated area not later than 2 years after the making of the Order.

Therefore the current Do-Nothing Scenario represented by the Planning Scheme of 2008 is not considered an appropriate alternative scenario for the following reasons:

- The lands are covered by a new statutory instrument (S.I. No.604 of 2015) which extends and increases the amount of lands covered under the 2008 Planning Scheme –therefore the do nothing scenario no longer takes into account the geographical scope of the Planning Scheme.
- The South Dublin County Development Plan 2016-2022 is now operational and has considerable changes in terms of environmental protection objectives.
- Other considerations including surface water, flood risk and densities require additional assessment to reflect statutory changes in the intervening period.

Therefore the Do-Nothing scenario as represented by the 2008 Planning Scheme is not considered a reasonable or realistic alternative in this SEA process.

6.2.2 Evolution of scenarios

Six Internal Workshops were carried out during the summer of 2016. The purpose of the workshops was to develop alternative scenarios with a view to identifying an emerging preferred scenario for the draft Planning Scheme.

The workshops involved the exploration of spatial concepts from which three broad scenario types were identified based on the location and role of centres (Kishoge, Fonthill and 2 centres). An emerging preferred scenario was selected by way of applying scorings to the alternative scenarios. The scoring of performance metrics for each scenario could then be used to compare and contrast each scenario.

Each of the three scenarios were scored from three different perspectives/viewpoints (planning authority, developer, resident) against a series of indicators grouped under common categories including Environmental Quality; Built Environment; Transport; Infrastructure; and Amenity, Health, Culture, Well-being. After the evaluation, scores and rationale were given for each scenario.

The three scenarios considered are presented below.

Scenario 1 - Kishoge District Centre

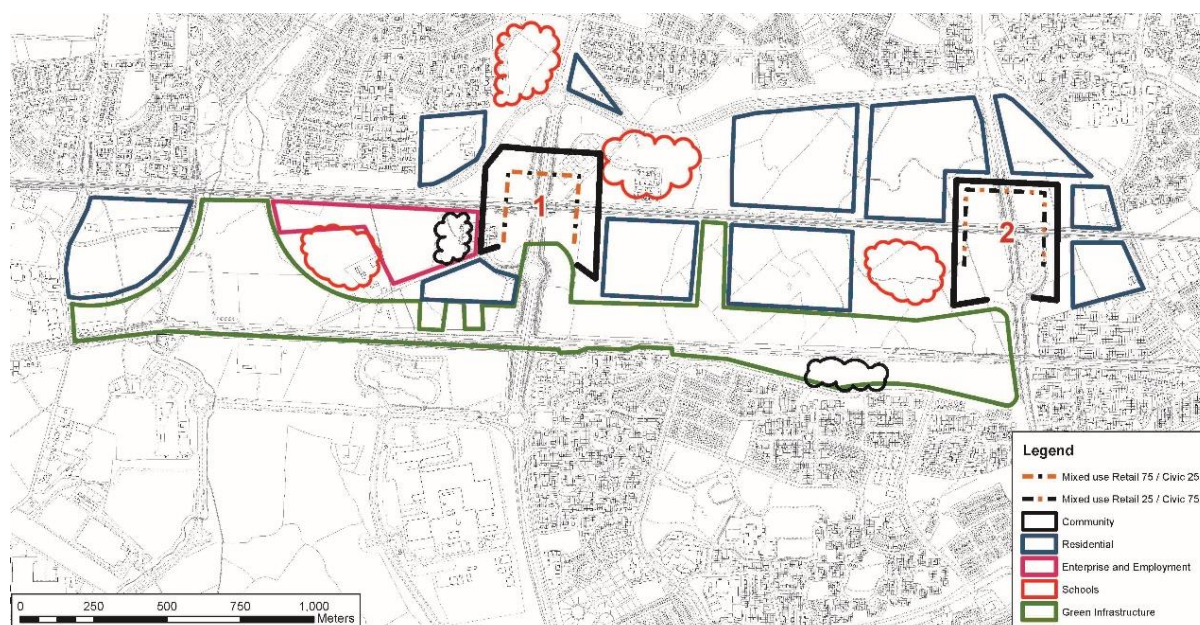


Figure 26 Scenario 1 Kishoge District Centre

Land Use/Function

In this alternative, the scheme would include two defined centres of varying scale and function. These two centres would locate around the railway stations of Kishoge (built but not open) and Fonthill (open). In terms of the proportion of overall land use, the lands would be primarily residential (50% - 60% of uses) with community/civic (10%) and commercial/employment (10%) uses split exclusively between the two centres. Kishoge would serve as a higher level District Centre with an emphasis on retail and employment

that would link with and serve Grange Castle Business Park south of the Grand Canal. Civic/community uses would be directed to Fonthill in the east.

Green Infrastructure

The green structure would aim to link existing and proposed open spaces. A linear open space would be routed along the Grand Canal and would link with Griffeen Valley Park via a Griffeen Valley Park extension on the western side of the SDZ lands. Open space will account for 20% of the overall lands. This would include open space buffers between development and the Canal.

Scenario 2 - Fonthill District Centre

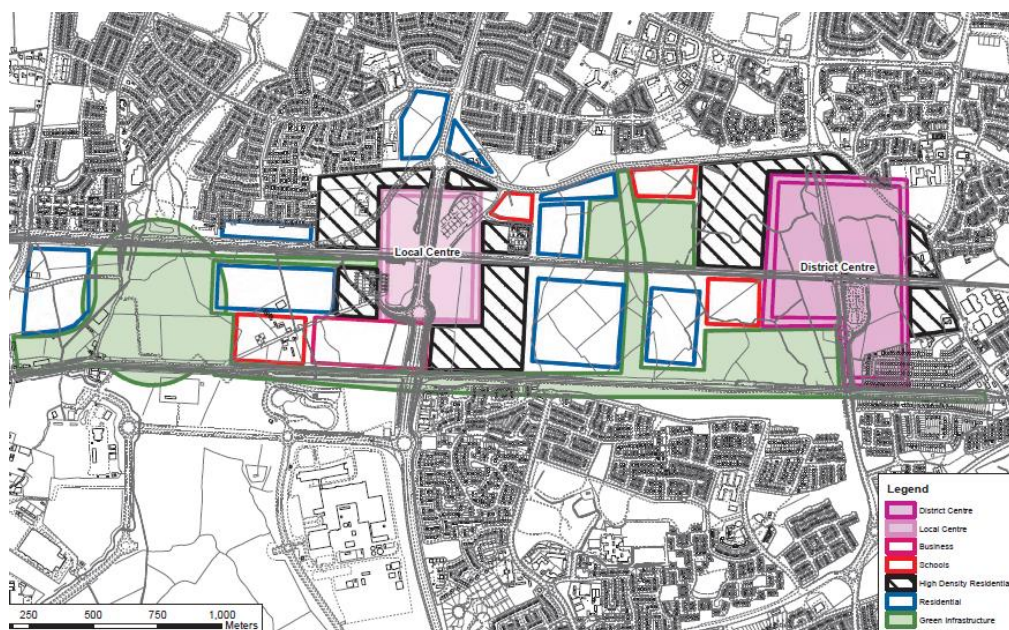


Figure 27 Scenario 2 –Fonthill District Centre

Land Use/Function

In this alternative, the scheme would accommodate a medium density residential district with higher densities and mix of uses around two defined centres of varying scale and function. The centres would locate around the railway stations of Kishoge and Fonthill. The Fonthill Centre would serve as a District Centre with an emphasis of retail uses and will act as a public transport hub between heavy rail and planned Core Orbital bus services between Tallaght and Blanchardstown. The Kishoge Centre would act as a local centre and will have a limited retail/service function and will provide services to Grange Castle. A small local amenity node would be located between the two centres on the northern side of the railway line. Employment uses would be located close to Grange Castle alongside the Canal and adjacent to Kishoge. In terms of the proportion of overall land use, the lands would be primarily residential (55%) with open space (25%), community/civic uses (10%) and commercial/employment (10%) uses.

Green Infrastructure

The green structure would link existing and proposed open spaces. A linear open space would be routed along the Grand Canal, which will link the Grand Canal linear park with Griffeen Valley Park via a Griffeen Valley Park extension on the western side of the SDZ lands. Open space would account for 25% of the overall lands. An expanded area of the Grand Canal would link and connect with the Fonthill District Centre. North-south projections of open space would extend from the Canal through the SDZ lands and link with the local amenity green node on the northern side of the railway line.

Scenario 3 –Co-located District Centres.

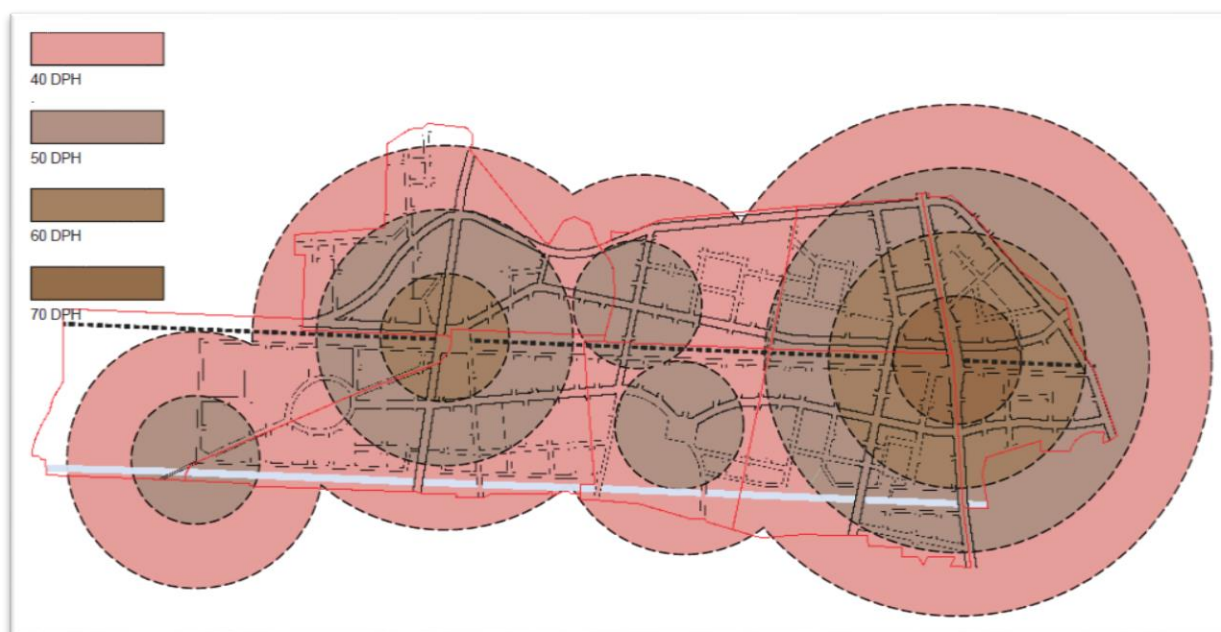


Figure 28 Scenario 3 Co-located District Centre

Landuse/Function

This scenario proposes that the SDZ lands would accommodate two defined centres of equal scale geographically located adjoining the Fonthill and Kishoge transport hubs on the Kildare Rail Line. The function of the Fonthill centre would be a mixed use centre with a significant emphasis on residential development and the Kishoge centre will be a mixed use centre with an emphasis on commercial, retail & employment uses. The residential emphasis would be placed on the Fonthill Centre with higher density.

In terms of the proportion of overall land use, the lands would be primarily residential (c60% of uses) with community/civic (10%) and commercial/employment (20%) uses.

Green structure

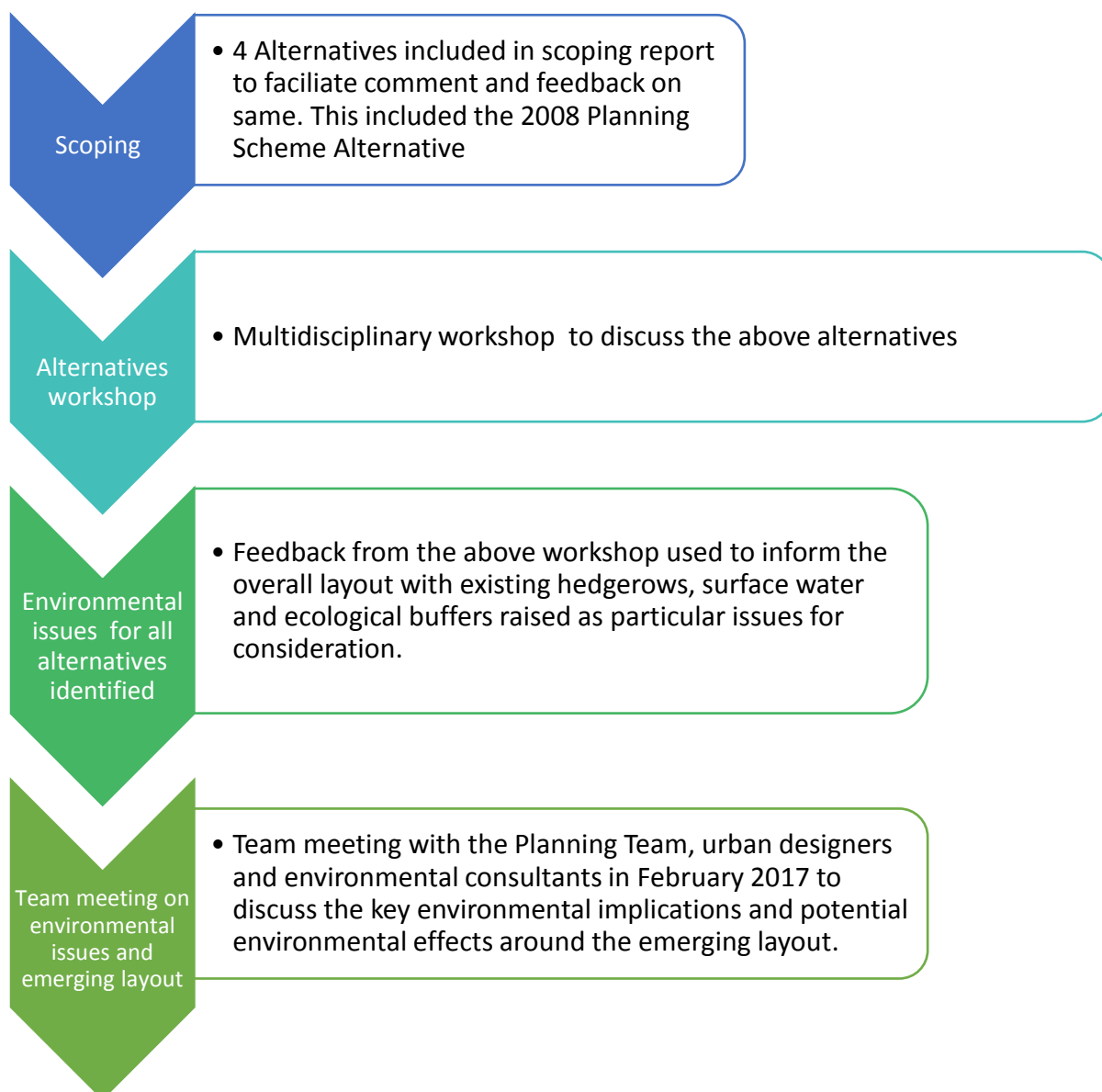
The green structure would include strategic eco links to create an open space network. A linear open space would be routed along the Grand Canal, which would link a Grand Canal linear park with Griffeen Valley Park via a Griffeen Valley Park extension on the western side of the SDZ lands. Expanded areas of the Grand Canal Park would link to the local centres. A

network of small- medium neighbourhood parks with strategic green links is included to compliment the large areas of open space at Griffeen Valley Park and the Grand Canal. Open space/ park would be located on sections of the southern side of the Grand Canal adjacent to Deansrath, extending north from the canal and the extension of Griffeen Valley Park.

6.3 Approach to the alternative scenarios

In developing, refining and assessing the alternatives for the planning scheme, the toolkit included in *Developing and Assessing Alternatives in Strategic Environmental Assessment* Good Practice Guidance (EPA 2015) was utilised. Once the internal workshops were completed (see Section 6.2.2.), the SEA assessment of alternatives was undertaken as follows:

Figure 29 Stages in Alternatives



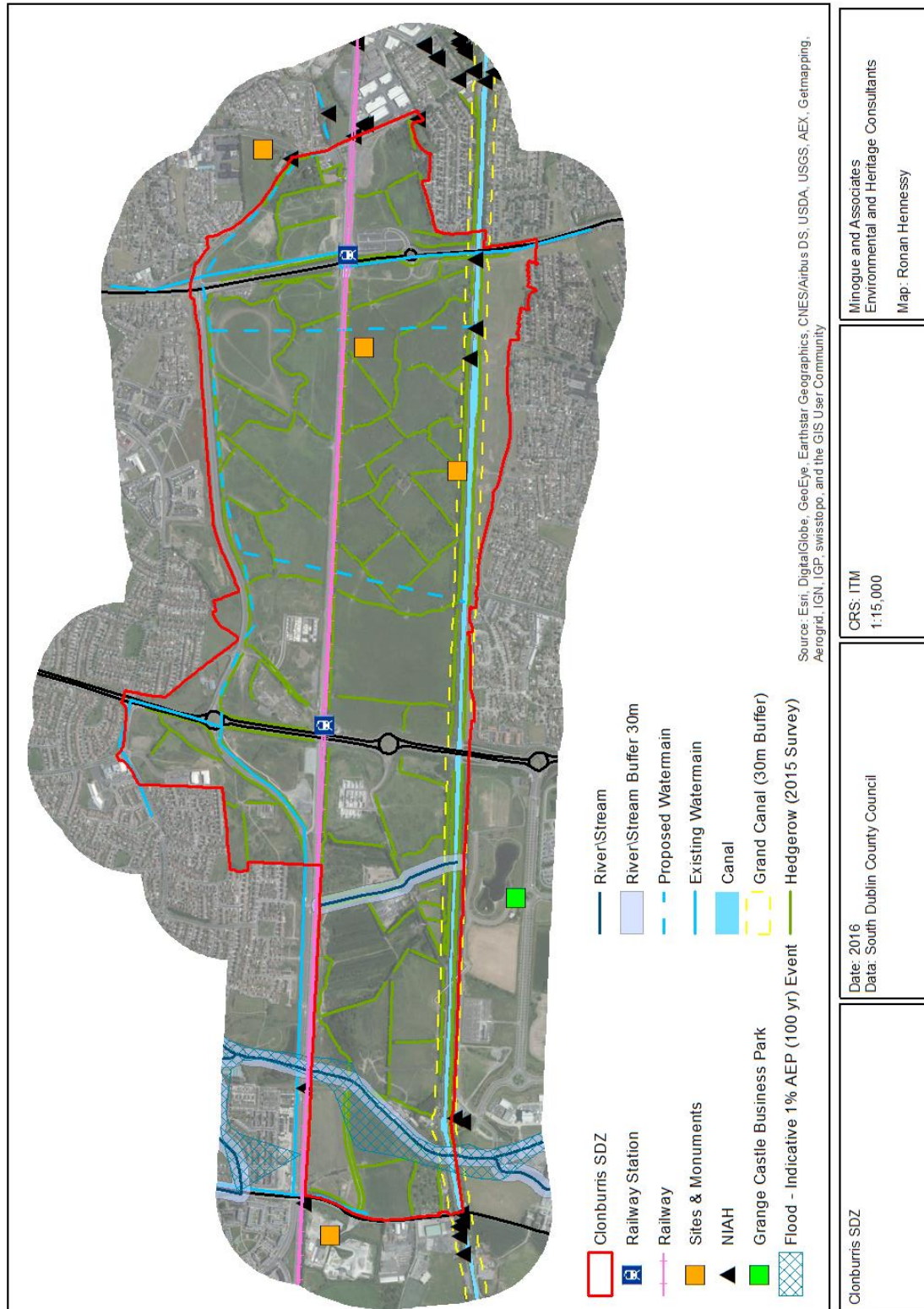
6.3.1 SEA Alternatives Workshop

A spatial approach was used to assess the alternative locations for the implementation of the planning scheme objectives. This used GIS modelling as follows:

- Environmental resource mapping and environmental sensitivity mapping
- Spatial mapping of alternatives

The Figure below presents the **Preliminary** environmental resource mapping used at the Alternatives Workshop in September 2016.

Figure 30 Preliminary Environmental Resource mapping



In addition, to facilitate a focused assessment of the alternatives and in order to ensure that the alternative was reasonable and could achieve the aims of the scheme, a series of structured questions were used in the workshop around the following topics. For each alternative the multidisciplinary team aimed to answer these questions.

Table 12 Questions used to assess Alternatives at SEA Alternatives Workshop

Question: Does this alternative: provide:	
Population and human health	<p>Enough homes</p> <ul style="list-style-type: none"> • of appropriate types • in appropriate locations • at the appropriate times <p>Provide:</p> <ul style="list-style-type: none"> • appropriate facilities and services; • in appropriate locations; • at the appropriate times <p>These should be well designed and inclusive and should include:</p> <ul style="list-style-type: none"> • health; • education; • recreation and sport; • community and leisure; and • other essential services
Material Assets	<p>Reduce the need to travel through more sustainable patterns of land use and development</p> <p>Encourage modal shift to more sustainable forms of travel</p> <p>Enable key transport infrastructure improvements</p>
Population and Human Health, Green Infrastructure and Air Quality and Climate	<p>Provide and enhance the provision of community access to green infrastructure</p> <p>Design for passive supervision of open space and public realm</p> <p>Minimise exposure to noise and light pollution</p>
Biodiversity, Flora and Fauna	<p>Protect and enhance natural habitats, wildlife, biodiversity and geodiversity where possible</p> <p>Protect the integrity of European sites and other designated nature conservation sites</p> <p>Encourage the creation of new habitats and features for wildlife</p> <p>Prevent isolation/fragmentation and re- connect / de-fragment habitats</p>
Water	<p>Enhance water quality and help to meet the requirements of the Water Framework Directive</p> <p>Protect groundwater resources</p> <p>Minimise and reduce the potential for exposure of people to ground pollution</p> <p>Address flood risk and minimise effects on natural flood processes</p>

Question: Does this alternative: provide:

Soil and Geology	Conserve soil resources where possible and avoid waste of same Remediate contaminated land/land subject to illegal dumping
Landscape Cultural Heritage	Protect and enhance archaeology and heritage assets, and areas of sensitive landscape character Improve access to, and enjoyment, understanding and use of cultural assets where this will not cause harm
Population and Human Health Air Quality and climate	Minimise and reduce the potential for exposure of people to noise, air and light pollution.
Material Assets	Reduce greenhouse gas emissions Encourage sustainable, low carbon building practices and design Reduce energy use Promote renewable energy generation Reduce water use Provide adequate infrastructure to ensure the sustainable supply of water and disposal of sewerage Maximise opportunities for recycling and minimising waste
Climate change	Respond to the likelihood of predicted climate change events

6.4 Assessment of potential environmental effects.

The following section summarises the common environmental issues that were raised across all the above alternative scenarios discussed in the SEA Alternatives Workshop in September 2016. This is followed by a summary table identifying potential significant environmental effects for each alternative.

6.4.1 Potential significant environmental effects identified for all alternative scenarios.

As the SDZ requires the conversion of primarily greenfield lands to a mixed use and residential Planning Scheme, there are a number of environmental effects that are common to all the development scenarios. More generally there are a number of potentially significant effects that can be identified from the conversion of greenfield, formerly agricultural lands to mixed use development. These effects will form part of the mitigation measures that will be integrated into the Planning Scheme.

Table 13 Environmental Issues identified for all alternatives.

SEA Theme:	Comment
Water Resources including Flooding	Water and Flooding: Surface water movement – relatively flat topography of some of the SDZ lands. Drainage and flow of surface water. Design considerations around blue infrastructure, open space, green infrastructure and populations
Soil and Geology	Soil sealing and water flows Potential Soil contamination-historical dumping Invasive species-risk of introduction and spread particularly around the water courses. Carbon sinks and flooding
Biodiversity, Flora and Fauna	Further consideration of hedgerows Balance between biodiversity and open space Canal setback to be further considered.
Appropriate Assessment Screening	The following issues have been noted as being pertinent to the assessment of the overall Scheme <ul style="list-style-type: none"> • Potential pollution associated with surface water run off with potential hydrological links to European Sites. • Provision of adequate wastewater treatment with regards to any additional loading which may result with proposed development
Population and human health	Cross cutting but key issues include impacts associated with railway and transport and design considerations. Design is key for roads, and railways and potential human health impacts Blue infrastructure, green infrastructure, open space and designing for user friendly and non user friendly blue infrastructure (eg ponds).
Material Assets including transport	External providers for public transport provision Phasing of surface water –will have to be managed and be upfront about same. Existing water infrastructure capacity
Cultural heritage Green infrastructure	Unknown/undiscovered archaeological resources Enhancing green infrastructure and compensating between loss of habitats such as hedgerows and new habitats

6.4.2 Assessment of potential effects for each alternative scenario

This section presents the assessment of potential environmental effects for each Alternative Scenario. This is undertaken by assessing each alternative against the SEOs presented in Chapter 5 of this SEA ER. It is informed by the environmental baselines as well as the policy review. A discussion of significant effects for each alternative is included and is based on the alternatives workshops and responses to the questions as shown in Table 2 above.

Summary Evaluation against SEOs

Scenario 1: Kishogoe District Centre

Likely to create positive effects on status of SEOs	Negative effects on status of SEOs - likely to be mitigated	Negative effects on status of SEOs - unlikely to be fully mitigated
B1 Ph1 MA3 L1 GI1	B2 B3 W1 W2 W3 SG1 MA1 MA2 MA4 AQ1 CH1 CH2 CC	
<p>Principal Environmental Impacts identified through SEA Alternatives Workshops were:</p> <p><u>Biodiversity</u></p> <p>Positive impacts on biodiversity associated with buffers and extension of green network under this alternative. Large open space and buffer areas between the Grand Canal and Griffeen River are identified as generating positive effects for Biodiversity SEOs. However, the central site development scenario here could increase loss of green infrastructure with radial development particularly hedgerows and double ditches. Potential habitat fragmentation with central development scenario. spaces between built land offer biodiversity opportunities with this alternative and positive provision along Grand Canal and Griffeen River</p> <p>With this scenario a lot of north south green links are identified –is there a need also for east-west green links (canal and railway line do provide an east-west link).</p> <p><u>Population and Human health</u></p> <p>Generally, a good dispersal of facilities with this scenario. Potential densities and units are positive under this alternative Considers 60% residential well matched with supporting services in this alternative.</p> <p><u>Flood Risk and Surface Water</u></p> <p>Note that Griffeen River Valley Park is already a flood attenuation area. This alternative likely requires a substantial increase in blue infrastructure –also to balance user friendly open space and more functional blue infrastructure open space.</p>		

Likely to create positive effects on status of SEOs	Negative effects on status of SEOs - likely to be mitigated	Negative effects on status of SEOs - unlikely to be fully mitigated
<p>The low density residential area between Kishogue and Fonthill in this alternative may require more storage capacity for water.</p> <p><u>Material Assets</u></p> <p>This alternative can provide a good hierarchy but relying on external transport providers for modal shift; which would be potential risk. It is unclear if this alternative would enable transport improvements.</p> <p>Dublin Bus and Quality Bus Corridors as well as Irish Rail – frequency of services would need to be increased to deliver this positively.</p> <p>Issue of railway and canal and potential impacts around noise, air quality and population and human health.</p> <p>Major sewer going through east to west at Deansrath and this will require significant setbacks –this has implications for landuses at Deansrath.</p> <p>Also developing at Deansrath would see traffic increased.</p> <p>Short term energy and climate change issues –this scenario potentially allows for a realisable energy plan (waste heat) and links to Grange Castle –potentially a quickly realised scenario for this.</p> <p><u>In-combination/other:</u></p> <p>Issue raised about this alternative relates to the centre development design –essentially a middle of greenfield site scenario- could this result in broader and more expansive environmental impacts as developing from centre out rather than developing closer to an existing urban centre such as Clondalkin.</p>		

Scenario 2: Fonthill District Centre

Likely to create positive effects on SEOs	Negative effects on status of SEOs - likely to be mitigated	Negative effects on status of SEOs - unlikely to be fully mitigated
MA3 AQ1 PH1 GI1	B1 B2 B3 W1 W2 W3 Ch1 Ch2 L1 CC1	
Principal Environmental Impacts identified through SEA Alternatives Workshops were		

Likely to create positive effects on SEOs	Negative effects on status of SEOs - likely to be mitigated	Negative effects on status of SEOs - unlikely to be fully mitigated
<p><u>Biodiversity, Flora and Fauna</u> Overall good impacts with potential open space network and preservation of hedgerows. If this scenario gives greater focus on eastern part of SDZ lands, the protection of the canal could be embedded. Generally quite narrow buffers in this alternative, however, this scenario does have a stronger park and open space network – potential positives around hedgerow retention and habitat creation.</p> <p><u>Population and Human Health</u> This alternative envisages higher density, this may be an overreliance and create a more limited dwelling mix. Phasing and dwelling type and marketability to be considered. Facilities quite well provided for under this alternative.</p> <p><u>Flood risk and surface waters</u> Increase in hard surfaces at Fonhill and impact on surface water and River Camac. Mitigation here could mean provision of green roofs at District Centre at Fonhill and attenuation. Generally the Fonhill area is – problematic/challenging as it drains into the River Camac.</p> <p><u>Material Assets</u> This alternative is more closely aligned with committed transport proposals. By having the higher order of development at Fonhill- creates a more natural rollout of retail combined with a transport hub. Examples given of transport hubs and streetscapes in cities such as London. Transport hub provision under this alternative should result in fewer car trips Generally, positive transport impacts for this alternative Raising levels and issue of urban space, design and costs. The potential for a breach of the canal is a residual risk and pond would be required to manage this in the south east This alternative may generate more medium term energy savings as further from Grange Castle as potential energy link</p>		

Likely to create positive effects on SEOs	Negative effects on status of SEOs - likely to be mitigated	Negative effects on status of SEOs - unlikely to be fully mitigated
<p><u>In-combination</u></p> <p>Increase of open space in north east and east of Kishogue positive in this alternative as attenuates for surface water. In turn may generate positive impacts on human health and population associated with increased blue infrastructure.</p> <p>However, if site levels have to be increased to address surface water issues in this scenario what effects in terms of population, human health and landscape may arise?</p>		

Scenario 3: Co-Located Centres

Likely to create positive effects on status of SEOs	Negative effects on status of SEOs - likely to be mitigated	Negative effects on status of SEOs - unlikely to be fully mitigated
GI B3	B2 Ph1 W1 W2 W3 SG1 MA1 MA2 MA3 MA4 AQ1 CH1 CH2 L1 CC1	
<p>Principal Environmental Impacts identified through SEA Alternatives Workshops were:</p> <p><u>Biodiversity, Flora and Fauna</u></p> <p>pNHA of Grand Canal – integrity of same is allowed for in this alternatives and good balance between passive surveillance and biodiversity</p> <p>Lower open space provision than other scenarios however whilst smaller areas these are dispersed and good linkages between them.</p> <p>Network of parks could help embed hedgerow and townland boundaries</p> <p><u>Population and Human health</u></p> <p>This alternative provides a better range of densities and heights.</p>		

Likely to create positive effects on status of SEOs	Negative effects on status of SEOs - likely to be mitigated	Negative effects on status of SEOs - unlikely to be fully mitigated
<p>Provides for adequate provision but concern there may be too much on retail and commercial uses (particularly in adjoining areas to the districts)</p> <p>Greater dispersal of services, open space and opportunities to connect to Grange Castle.</p> <p><u>Flood Risk and Surface Waters</u></p> <p>Park network creates a SUDs opportunity but River Camac remains a potential issue that requires further research.</p> <p>Reduction in open space overall in this alternative and surface water implications –mitigation required</p> <p><u>Material Assets</u></p> <p>This alternative allows for the proposed Fonthill transport hub –this is community driven in this scenario. However, both centres are quite dense in this alternative, does it provide for a critical mass for a transport hub?</p> <p>Reliance on public transport and modal shift –this presumes a modal shift and relies upon Irish Rail for delivery</p> <p>Far more railway bridges in this alternative, associated costs and urban design.</p> <p>Canal bridge also.</p> <p>Range of densities across the site increases potential for energy production and its viability.</p> <p><u>In-combination effects</u></p> <p>Additional bridges including canal bridges could give rise to biodiversity and landscape negative effects in the absence of mitigation. Generally, increased crossings over water courses could give rise to habitat fragmentation cumulatively. Potentially this could also result in increased human activities and associated disturbance around more ecologically sensitive parts of the Grand Canal</p>		

6.5 Preferred Alternative

Following on from the workshop process, the weighted marking of the planning assessment, and the SEA Alternatives workshop the merging of Scenarios 2 & 3 to form a 'bicentric' scenario was further developed by the core SDZ planning team and the brief for an Emerging Preferred Scenario Outline Description was formulated. As this layout was developed, each iteration was issued for comment to the environmental assessment team and other technical specialists. As additional baseline information was prepared for example the Ecological Surveys of 2016 and surface water modelling, this data helped refine the scheme further.

From the SEA perspective the preferred alternative provides the following:

- Allows for a 50m set back for all buildings from the northern side of the Grand Canal, to afford the optimal degree of protection to the Grand Canal ecological corridor.
- Allows for the retention of a number of hedgerows particularly from a north south orientation as recommended in the Ecological Surveys of 2015.
- Incorporates into the overall design the retention of the Barony hedgerow which is of some antiquity.
- Avoids a new multimodal bridge across the Grand Canal.
- Surface water attenuation in this alternative has been integrated to the layout and forms part of the overall green and blue infrastructure for the planning scheme.
- The preference for higher density at Fonthill also reflects the fact that the train station is operational already.

Therefore, the preferred alternative was developed by the planning team and others having regard to the key requirements of:

- Environmental effects identified through the SEA consideration of alternatives, and
- Stated objectives of the Planning Scheme and SDZ designation including social and economic effects of the development.

By complying with appropriate mitigation measures - including those which have been integrated into the Planning Scheme - potential adverse environmental effects which could arise as a result of implementing this scenario would be likely to be avoided, reduced or offset.

7 Assessment of Effects

7.1 Introduction

The purpose of this section of the Environmental Report is to predict and evaluate as far as possible the environmental effects of the SDZ Planning Scheme.

SEA is an iterative process and the Planning Scheme has taken consideration of environmental issues raised during the SEA process to date. These issues have been incorporated into the Draft Planning Scheme and the principal purpose of this chapter is to discuss the evaluation of these. The discussion of likely impacts is grouped around each of the following environmental parameters as described in Chapter Four.

- Population & Human Health
- Biodiversity, Flora & Fauna
- Water
- Soil & Geology
- Climatic Factors and Climate change
- Cultural Assets
- Material Assets
- Landscape
- Green Infrastructure
- In-combination and cumulative effects.

The individual evaluation of relevant requirements contained in the SDZ Planning Scheme is presented in Annex B. The identification of impacts through the evaluation matrix and discussion of significant impacts detailed below, in turn informs the development of mitigation measures presented in Chapter Eight, Mitigation Measures. The table below identifies the significant environmental issues that were identified for all alternatives considered through the SEA process.

Table 14 Environmental Issues and potential effects across all SEA Scenarios including Preferred.

SEA Theme:	Comment
Water Resources including Flooding	Water and Flooding: Surface water movement – relatively flat topography of some of the SDZ lands. Drainage and flow of surface water. Design considerations around blue infrastructure, open space, green infrastructure and populations.
Soil and Geology	Soil sealing and water flows Potential Soil contamination-historical dumping Invasive species-risk of introduction and spread particularly around the water courses. Carbon sinks and flooding
Biodiversity,	Further consideration of hedgerows

SEA Theme:	Comment
Flora and Fauna	Balance between biodiversity and open space Canal setback to be further considered.
Appropriate Assessment Screening	The following issues have been noted as being pertinent to the assessment of the overall Scheme <ul style="list-style-type: none"> Potential pollution associated with surface water run off with potential hydrological links to European Sites. Provision of adequate wastewater treatment with regards to any additional loading which may result with proposed development
Population and human health	Cross cutting but key issues include impacts associated with railway and transport and design considerations. Design is key for roads, and railways and potential human health impacts Blue infrastructure, green infrastructure, open space and designing for user friendly and non- user friendly blue infrastructure (eg ponds).
Material Assets including transport	External providers for public transport provision Phasing of surface water –will have to be managed and be upfront about same. Existing water infrastructure capacity
Cultural heritage	Unknown/undiscovered archaeological resources
Green infrastructure	Enhancing green infrastructure and compensating between loss of habitats such as hedgerows and new habitats

7.2 Population and Human Health- Significant Effects.

Landuse planning impacts on the everyday lives of people and can either hinder or help promote healthy sustainable environments and communities. For example the provision of safe walking routes, cycle-ways, parks, playgrounds, safe routes to school, public transport facilities, etc. result in direct and indirect health benefits and allow for healthier transportation choices to be made by communities above private motor car. Both the principles included in Chapter 1 and the proposals included in *Section 2.2 Movement and Transport Strategy*, *Section 2.3 Green and Blue Infrastructure*, *Section 2.10 Landscape and Open Space* and *Section 2.11 Natural Heritage and Biodiversity* create positive direct effects on this parameter due to promotion and design of pedestrian and cycle friendly movement and accessibility to public transport options. Over 90 hectares of open space will be provided on the lands, supplemented by other green spaces and all residents will be within 400m of natural and semi natural open space.

The SDZ Planning Scheme emphasises the need to integrate landuse and transportation. It sets out a strategy for residential, mixed-use, economic, retail landuses underpinned by recreational and community infrastructure provided in a timely fashion, in accessible locations and connected to, or within easy reach of, good public transport networks. Positive effects on Population and Human Health SEOs are identified for these provisions.

The maintenance, protection and enhancement of water quality are important and are closely allied to human health generally. The SDZ Planning Scheme provides for phased development with infrastructure provided in advance, see *Section 2.9 Services Infrastructure* and *Section 4 Phasing and Implementation*. The provision of buffer zones for watercourses as detailed in *Section 2.3 Green and Blue Infrastructure* will protect riparian zones and water quality.

More generally, and across the SDZ Planning Scheme the design and implementation of green and blue infrastructure (see *Section 2.3 Green and Blue Infrastructure*) will give rise to positive effects on this SEO associated with indirect positive effects as regard surface water management, flood risk, climate change adaptation, landscape and open space. Provision of green infrastructure and the hierarchy of parks and open space in *Section 2.3* and *Section 2.10 Landscape and Open Space* will assist in improving environmental amenity, protecting important ecological functions and provide recreational and amenity areas contributing to the health and well-being over time of the population of Clonburris.

Buffer zones and ecological corridors as well as specific design measures for roads and bridges (see *Section 2.2 Movement and Transport Strategy*, plus specific measures in *Section 2.8 Built Form and Design*) address and mitigate against potential noise, light and air quality adverse effects.

The promotion of sustainable development by balancing complex sets of environmental, social and economic goals in planning decisions can deliver positive effects for population and human health.

Overall, the SDZ Planning Scheme is likely to improve the status of the SEO's on population and human health. The SDZ Planning Scheme promotes the development of quality, sustainable settlements with policies relating to integrated landuse and transport, environmental protection and energy efficiency balanced with economic vitality.

7.3 Biodiversity, Flora and Fauna- Significant Effects

The promotion of compact, sustainable settlements, integrating landuse and transport, green and blue infrastructure, ecological corridors and buffer zones for watercourses all strengthen overall protection of biodiversity resources and the Biodiversity SEOS.

Particular measures identified as generating positive effects on Biodiversity SEOS include retention of historical hedgerows with a key focus on north south aligned structures, railway and Grand Canal ecological corridor, a Parks and Landscaping Strategy with biodiversity management plan and biodiversity enhancement measures associated with SUDs. In addition, lighting considerations, buffer zones for water courses and additional tree planting give rise to positive effects on Biodiversity SEOS – see for example *Section 2.3 Green and Blue Infrastructure*, *Section 2.8 Built Form and Design* and *Section 2.11 Biodiversity and Natural Heritage*.

Built development on these largely greenfield lands as well as transport infrastructure will give rise to adverse effects. Infrastructure has the potential to generate adverse impacts on biodiversity, with key potential impacts relating to disturbance, disruption, fragmentation and loss of habitats. However, the focus on higher densities, reference to relevant guidelines, and promotion of green/blue infrastructure and buffer zones does assist in reducing the overall adverse impacts and many impacts are identified as being addressed through recommended mitigation.

Proposals within the SDZ Planning Scheme to increase accessibility particularly along the Grand Canal could impact adversely on biodiversity resources through disturbance and fragmentation unless mitigation is provided for. This is particularly important in relation to the northern towpath and the habitats and species associated with this area, including bats and bird species.

Indirect and cumulative impacts are identified for biodiversity in the event of damage to soil and water resources associated with development activities. Water pollution or surface water run off could give rise to negative effects on water quality and streams/ rivers within the SDZ lands with subsequent adverse effects on biodiversity.

Therefore, a number of mitigation measures are recommended for the above.

7.4 Water - Significant Effects

Potential effects on water resources (and frequently biodiversity) in the absence of mitigation include:

- A reduction in water quality in groundwater, springs and watercourses associated with the construction phase of new developments (short to medium term impacts);
- Surface water runoff from impermeable surfaces leading to reduced water quality in groundwater springs or surface waters affecting qualifying habitats and species downstream (impacts can range from short to long term);
- Changes in the flow rate of watercourses arising from an increased footprint of impermeable surfaces within the Plan area - increasing the extent of impermeable surfaces will result in a decrease in infiltration and an increase in runoff;
- Inadequate wastewater treatment resulting in pollution of groundwater springs or surface watercourses;
- Generally, landuse practices can result in water quality impacts and whilst surface water impacts may be identified quickly, impacts to groundwater can take much longer to ascertain due to the slow recharge rate of this water resource;
- Interruptions in hydrological regimes, particularly in wetlands that can have direct impacts on biodiversity, and
- Water quality impacts can also have human health impacts in the case where bacterial or chemical contamination arises.

The SDZ Planning Scheme includes a range of provisions and measures to address and minimise the above effects, including:

- Green and blue infrastructure, buffer zones for watercourses, invasive species control measures as detailed in *Section 2.3, Green and Blue Infrastructure, Section 2.11 Biodiversity and Natural Heritage*. More positive, long term impacts are associated with these measures.
- The recognition of the Water Framework Directive and roles and responsibilities for same, currently act as a key driver toward long term positive impacts for water quality and water management generally;
- A detailed *Surface Water Strategy* that identifies measures to address increased surface run off and flood risk associated with the new built development and potential soil sealing; part of this strategy provides for a series of identified SUDs measures which will enhance water quality management and biodiversity; The positive effects associated with this strategy include the reduction of surface water volumes at source; maximising potential for flood storage through ponds, swales etc; design of multifunctional open space to safely route and manage temporary water.
- Indirect effects on biodiversity and climate change adaption are identified for this also in terms of contribution to urban cooling, enhancing local biodiversity and water quality through green and blue infrastructure, protect and create carbon sinks.
- *Section 4 Phasing and Implementation* provides for delivery of critical infrastructure (including water and wastewater services) in tandem with built development; this will allow for a phased and managed approach to service delivery and capacity of WWTP in the Greater Dublin area.

Notwithstanding the above provisions that will minimise adverse effects, at Planning Scheme level Infrastructural and built development may adversely affect water resources due to potential impacts on water quality; to provide for greater protection of water resources, additional mitigation measures are recommended.

7.5 Soil and Geology - Significant Effects

Soil quality and function may be enhanced through particular measures associated with water quality and landuse and achieving the Water Framework Directive Objectives. The quality of groundwater is directly related to soil quality and landuse, and abstraction of geological and soil resources can also affect the water table over time.

Historical dumping has been identified as a potential issue on the SDZ lands and these would require remediation as required.

The most significant soil and geology effect identified relates to new built development and conversion of predominantly greenfield lands to a mixed use residential community over time in line with the Planning Scheme objectives.

Soil sealing and increased risk of surface run off have been identified early on in the SEA process as a potential adverse effect; however the preparation of the *Surface Water Strategy* and key measures including temporary greening of lands, additional planting, retention of historical hedgerows where possible and green and blue infrastructure (See *Section 2.3 Green and Blue Infrastructure, Section 2.11 Biodiversity and Natural Heritage*,

Section 2.10 Landscape and Open Space, Surface Water Strategy and Section 2.8 Built Form and Design) will significantly minimise effects associated with this considerable landuse change.

Additional measures in relation to control and management of invasive species, particularly where additional fill is required (as illustrated in the *Surface Water Strategy*) will assist in addressing and controlling this effect.

Finally, the Parks and Landscape Strategy for the entire lands including a biodiversity management plan which will contribute to an overall strategic approach to a number of environmental parameters including soil and geology.

As with water resources, additional measures are recommended to ensure stronger protection of soil and geology during the construction phases of the SDZ Planning Scheme.

7.6 Climatic Factors and Climate Change - Significant Effects

Overall the SDZ Planning Scheme will contribute positively to climate change adaptation through the following:

- Integration of land use and transport;
- Promotion of public and non- vehicular transport;
- Design measures to enhance walking and cycling around the SDZ Planning scheme;
- Preparation of an Energy Masterplan and provision of Nearly Zero Energy Ratings in new residential development;
- Surface Water Strategy and blue/green infrastructure giving rise to increased surface water storage and potential carbon sequestration;
- Retention of hedgerows and provision of new planting regimes to further enhance carbon sinks (existing and new), and
- Longer term positive effects in relation to air quality, population and human health and water.

7.7 Cultural Assets - Significant Effects

Overall the impacts of the SDZ Planning Scheme are long term and positive in relation to cultural heritage due to the recognition of the value of cultural heritage and the range of cultural heritage features including built heritage, natural heritage and landscapes.

Potential cultural heritage impacts arise once more in relation to built development, though existing development management control and policies/objectives of the SDZ Planning Scheme will ensure sufficient protection and oversight.

Section 2.12 Archaeological and Architectural Heritage contains specific measures to minimise adverse effects and promote reuse of architectural features such as the Omer lockhouse.

7.8 Material Assets - Significant Impacts

For transport, provisions including in *Section 2.2 Movement and Transport Strategy* are of particular relevance. These are identified as generating positive impacts for a number of SEOs including population and human health, air quality and climate and sustainable transport. Several transport measures (in particular public transport and walking and cycling) create positive impacts as they support more sustainable transport options with cumulative and in combination positive impacts relating to human health, biodiversity and air quality.

Section 2.8 Built Form and Design and the overall approach to maximise residential densities close to the Fonthill and Kishogue train stations creates positive longer term effects on the Transport SEOs. *Sections 2.6 Economic Development and 2.7 Community Facilities* which promote employment and enterprise within the Planning Scheme, as well as identification of community and educational facilities can promote a model shift for those living within and close to the SDZ lands; this generates positive direct permanent impacts for sustainable transport if it reduces car dependency and increases viability of public transport options. Indirect long term positive effects are identified for Population and Human health SEOs also.

Water supply and wastewater capacity and demands are addressed in conjunction with Irish Water. The key element in relation to this is ensuring the implementation of the SDZ Planning Scheme is in line with capacity to treat wastewater and water supply services. *Section 2.9 Services Infrastructure and Energy Framework*, as well as *Chapter 4 Phasing and Implementation* all strengthen and reinforce these issues by ensuring provision of critical services infrastructure on a phased basis and in tandem with phasing of built development.

Additionally, provision is made in the Planning scheme for water conservation measures including promotion of best practice for use of grey water (*Section 2.9 Services Infrastructure and Energy Framework*); as well as rainwater attenuation in the *Surface Water Strategy*.

Waste management is addressed through the SDZ Planning scheme including recycling facilities, investigation of pneumatic waste recycling facilities given the new build of the lands. *Section 2.9* again provides the detail on this issue. Increased recycling rates through provision of sufficient and well designed and located recycling facilities is identified as a positive effect on this SEO.

7.9 Landscape - Significant Effects

The focus on design statements for developments, enhancing sense of place and high quality urban realms create positive long term impacts for landscape and townscape resources. These provisions are included in *Section 2.8 Built Form and Design*.

Green and blue infrastructure provisions as detailed in *Section 2.3 Green and Blue Infrastructure*, as well as the open space hierarchy, buffer zones and retention of key hedgerows all contribute to positive landscape effects associated with the implementation

of the SDZ Planning Scheme. A commitment to these elements are included as a mitigation measure in Chapter Three Development and Character Areas.

The preparation of a Parks and Landscape Strategy in the early phasing of the Planning Scheme is a positive effect on the landscape SEOs; again to promote and strengthen environmental protection and ensure biodiversity considerations are aligned with such a strategy, additional mitigation measures are recommended for this proposal.

7.10 Green Infrastructure - Significant Effects

The SEA and plan preparation process have sought to integrate green and blue infrastructure throughout the SDZ Planning Scheme as a means to mitigate for adverse effects associated with the significant change in landuse associated with the scheme.

The analysis of hedgerows both in terms of their ecology and their historical origins have had a profound influence on the scheme –in particular the masterplan and layout of the SDZ Planning scheme has worked around the retention of the old Barony boundary hedgerows and sought to retain hedgerows that comprise a north- south orientation to allow for ecological connectivity between the east -west ecological corridors of the Grand Canal and the Railway line. Blue and green spaces will cover approximately 30% of the site.

Enhancement measures including the following are identified as enhancing and integrating green and blue infrastructure measures to the SDZ Planning Scheme with positive and cross cutting environmental effects:

- the Railway Ecological Corridor;
- the Grand Canal Ecological Corridor;
- the provision of buffers around the water courses;
- temporary greening provisions;
- SUDs;
- Additional tree planting, and
- Parks and Landscape strategy that includes a biodiversity management plan.

7.11 In-combination and cumulative significant effects

This section of the Environmental Report provides an outline of the potential cumulative effects on the environment as a result of implementation of the SDZ Planning Scheme. Figure 25 presented overall environmental sensitivity mapping for the SDZ Planning Scheme and Figure 26 highlighted the significant inter-relationships between the SDZ Planning Scheme and environmental parameters.

Cumulative effects are referred to in a number of SEA Guidance documents and are defined in the EPA Sea Process Checklist as *“effects on the environment that result from incremental changes caused by the strategic action together with other past, present and reasonably foreseeable future actions. These effects can result from individually minor but collectively*

significant actions taking place over time or space”¹⁶ These effects can be insignificant individually but cumulatively over time and from a number of sources can result in the degradation of sensitive environmental resources. The assessment of cumulative effects is a requirement of the SEA Directive (2001/42/EC).

The 2004 Guidelines produced by the DECLG outlines that the SEA process is in a good position to address cumulative effects for which the Environmental Impact Assessment process is not equipped to deal with. Due to the strategic nature of the SEA process a forum is provided in which cumulative effects can be addressed. The EPA is presently undertaking a study in relation to cumulative effects and it is anticipated that a draft Cumulative Effects – Best Practice Guidance Document will be available soon to SEA practitioners.

The EPA Strive Report 2007-2013 on ‘Integrated Biodiversity Impact Assessment’ describes cumulative effects as incremental effects resulting from a combination of two or more individual effects, or from an interaction between individual effects – which may lead to a synergistic effect (i.e. greater than the sum of the individual effects), or any progressive effect likely to emerge over time.

¹⁶ (EPA SEA Process Checklist (2011)).

7.11.1 Potential cumulative effects from other plans and projects

Table 15 Potential cumulative and in combination effects

Plan	Comment	Cumulative effects
The Transport Strategy for the Greater Dublin Area, 2016-2035	This Strategy sets out how transport will be developed across the region, covering Dublin, Meath, Wicklow and Kildare, over the period of the strategy and was subject to SEA and AA.	This strategy has been considered and included within the SDZ Planning Scheme and transport assessment study. No in combination effects are identified.
Water Services Strategic Plan	Ireland's first integrated national plan for the delivery of water services, the Water Services Strategic Plan (WSSP) addresses six key themes and was adopted in 2015. It was subject to full SEA and AA and concluded that Overall, the assessment has identified that the implementation of the draft WSSP is likely to have positive effects on the majority of the SEOs that have been used in the assessment to help characterise the environmental effects of the WSSP and no significant negative effects were identified.	No in-combination impacts were predicted as a result of implementation of the Plans
Neighbouring County Development Plans	These plans were subject to full SEA and AA and concluded that subject to full adherence and implementation of measures likely significant effects were not identified.	No in-combination impacts were predicted as a result of implementation of the Plans
River Basin District Management Plans.	The second cycle of these plans (2015 to 2021) are currently in preparation and will provide management measures to achieve WFD Objectives upto 2021. This plan is undergoing both SEA and AA and is in draft form.	No in-combination impacts are predicted as a result of implementation of the Plans
CFRAMS Study	The Eastern CFRAM study has been commissioned in order to meet the requirements of the Floods Directive, as well as to deliver on core components of the 2004 National Flood Policy, in the Eastern district. The Camac River, the catchment of which was prioritised within this Eastern CFRAM Study. As no flood relief works have been carried out to date.	Surface Water Strategy for SDZ Planning Scheme addresses and makes recommendations in relation to this. No adverse effects identified.
Projects		
Greater Dublin Drainage	The Project Team is currently undertaking studies towards preparing an Environmental Impact	The EIA and NIS will assess in more detail; currently

Plan	Comment	Cumulative effects
	Statement (EIS) and Natura Impact Statement (NIS) for the Preferred Site Option, which will be submitted as part of the application for planning permission to An Bord Pleanála in 2018. The Board is the competent authority that will assess and determine the outcome of the planning application	uncertain impacts as details and conclusions not yet known.

8 Mitigation Measures

8.1 Introduction

This chapter outlines the mitigation measures that will prevent, reduce, and offset as much as possible any significant adverse effects on the environment of the plan area resulting from the implementation of the SDZ Planning Scheme. Section (g) of Schedule 2B of the SEA Regulations (as amended) requires: *‘The measures envisaged to prevent, reduce and as fully as possible offset any significant adverse effects on the environment of implementing the Plan’.*

Mitigation involves ameliorating significant negative effects. Where the environmental assessment identifies significant adverse effects, consideration is given in the first instance to preventing such impacts or where this is not possible, to lessening or offsetting those effects. Mitigation measures can be generally divided into those that:

- Avoid effects;
- Reduce the magnitude or extent, probability and/or severity of effect;
- Repair effects after they have occurred, and
- Compensate for effects, by balancing out negative impacts with positive ones.

The iterative process of the Planning Scheme preparation has facilitated the integration of environmental considerations into the layout and text of the Planning Scheme. In addition, potential positive effects of implementing the SDZ Planning Scheme have been and will be maximised and potential adverse effects have been and will be avoided, reduced or offset.

Many impacts will be more adequately identified and mitigated at project and EIA level. In general terms, all proposals for development will be required to have due regard to environmental considerations outlined in this Environmental Report and associated assessments including the Screening for Appropriate Assessment, Strategic Flood Risk Assessment and Ecology Surveys. Proposals for development which are deemed contrary to the environmental objectives contained in the SDZ Planning Scheme will not normally be permitted, and if permitted, not without the appropriate site and development specific mitigation measures.

There were also a number of proposals associated with the draft SDZ Planning Scheme that were identified as potentially generating significant adverse impacts on the environment, and suggested rewording of these proposals were put forward for consideration and recommended for inclusion in the draft SDZ Planning Scheme.

This chapter is structured as follows:

- 8.2 Environmental Protection Measures in the South Dublin County Development Plan 2016-2022
- 8.3 Mitigation measures –amendment of text in the SDZ Planning Scheme
- 8.4 Specific mitigation measures developed through the SEA and associated assessments and surveys.

8.2 Environmental Protection Measures in the South Dublin CDP 2016- 2022.

The Draft Planning Scheme has been prepared having regard to the policies and objectives outlined within the South Dublin County Development Plan 2016-2022. The environmental protection measures for the CDP 2016-2022 are as follows:

Table 16 Environmental Protection Measures in South Dublin CDP 2016-2022

CDP Policy/Objective	Text
Population and Human health	
CS2 objective 1	To promote and facilitate urban expansion on designated Strategic Development Zone sites at Adamstown and Clonburris, in tandem with the delivery of high capacity public transport services and subject to an approved Planning Scheme.
Housing policy 12	(h) Public Open Space It is the policy of the Council to ensure that all residential development is served by a clear hierarchy and network of high quality public open spaces that provides for active and passive recreation and enhances the visual character, identity and amenity of the area.
Policy C1	It is the policy of the Council to ensure that all communities have access to multifunctional community centres that provide a focal point for community activities.
Policy C8 (a)	It is the policy of the Council to support and facilitate the provision of good quality and accessible childcare facilities at suitable locations in the County
Policy C8 (b)	It is the policy of the Council to require the provision of new childcare facilities in tandem with the delivery of new communities.
Policy 13	It is the policy of the Council to promote the highest levels of universal accessibility in all community facilities
Policy 12.	It is the policy of the Council that a hierarchical network of high quality open space is available to those who live, work and visit the County, providing for both passive and active recreation, and that the resource offered by public open spaces, parks and playing fields is maximised through effective management
Biodiversity, Flora and Fauna	
Heritage,	It is the policy of the Council to support the conservation and improvement of Natura 2000 Sites and to protect the Natura

CDP Policy/Objective	Text
conservation and landscapes (HCL) policy 12 natura 2000 sites	2000 network from any plans and projects that are likely to have a significant effect on the coherence or integrity of a Natura 2000 Site
Heritage, conservation and landscapes (HCL) policy 13	Natural Heritage Areas It is the policy of the Council to protect the ecological, visual, recreational, environmental and amenity value of the County's proposed Natural Heritage Areas and associated habitats.
Hcl13 objective 1:	To ensure that any proposal for development within or adjacent to a proposed Natural Heritage Area (pNHA) is designed and sited to minimise its impact on the biodiversity, ecological, geological and landscape value of the pNHA particularly plant and animal species listed under the Wildlife Acts and the Habitats and Birds Directive including their habitats.
HCL13 objective 2:	To restrict development within a proposed Natural Heritage Area to development that is directly related to the area's amenity potential subject to the protection and enhancement of natural heritage and visual amenities including biodiversity and landscapes
Heritage, conservation and landscapes (HCL) policy 15	Non-Designated Areas It is the policy of the Council to protect and promote the conservation of biodiversity outside of designated areas and to ensure that species and habitats that are protected under the Wildlife Acts 1976 and 2000, the Birds Directive 1979 and the Habitats Directive 1992 are adequately protected
HCL15 objective 1	To ensure that development does not have a significant adverse impact on rare and threatened species, including those protected under the Wildlife Acts 1976 and 2000, the Birds Directive 1979 and the Habitats Directive 1992.
HCL15 objective 2:	To ensure that, where evidence of species that are protected under the Wildlife Acts 1976 and 2000, the Birds Directive 1979 and the Habitats Directive 1992 exists, appropriate avoidance and mitigation measures are incorporated into development proposals as part of any ecological impact assessment.
HCL15 objective	To protect existing trees, hedgerows, and woodlands which are of amenity or biodiversity value and/ or contribute to

CDP Policy/Objective	Text
3	landscape character and ensure that proper provision is made for their protection and management in accordance with Living with Trees: South Dublin County Council's Tree Management Policy 2015-2020.
Material Assets -Transport	
Transport and mobility policy 1	and (tm) Overarching It is the policy of the Council to promote the sustainable development of the County through the creation of an integrated transport network that services the needs of communities and businesses
Transport and mobility policy 2	and (tm) Public Transport It is the policy of the Council to promote the sustainable development of the County by supporting and guiding national agencies in delivering major improvements to the public transport network and to ensure existing and planned public transport services provide an attractive and convenient alternative to the car.
Transport and Mobility Policy 3	and (TM) Walking and Cycling It is the policy of the Council to re-balance movement priorities towards more sustainable modes of transportation by prioritising the development of walking and cycling facilities within a safe and traffic calmed street environment.
Transport and mobility policy 6	and (tm) Road and Street Design It is the policy of Council to ensure that streets and roads within the County are designed to balance the needs of place and movement, to provide a safe traffic-calmed street environment, particularly in sensitive areas and where vulnerable users are present
Material Assets –Water and Wastewater	
Infrastructure & environmental quality policy 1 water & Wastewater	(IE) It is the policy of the Council to work in conjunction with Irish Water to protect existing water and drainage infrastructure and to promote investment in the water and drainage network to support environmental protection and facilitate the sustainable growth of the County.
IE1 objective 1	To work in conjunction with Irish Water to protect, manage and optimise water supply and foul drainage networks in the County.
IE1 objective 2:	To work in conjunction with Irish Water to facilitate the timely delivery of ongoing upgrades and the expansion of water

CDP Policy/Objective	Text
	supply and wastewater services to meet the future needs of the County and the Region
Water Resources including Flood Risk	
IE2 policy	It is the policy of the Council to manage surface water and to protect and enhance ground and surface water quality to meet the requirements of the EU Water Framework Directive
IE2 objective 1	To maintain, improve and enhance the environmental and ecological quality of our surface waters and groundwater by implementing the programme of measures set out in the Eastern River Basin District River Basin Management Plan
IE2 objective 2	To protect the regionally and locally important aquifers within the County from risk of pollution and ensure the satisfactory implementation of the South Dublin Groundwater Protection Scheme 2011, and groundwater source protection zones, where data has been made available by the Geological Survey of Ireland
IE2 objective 3	To maintain and enhance existing surface water drainage systems in the County and promote and facilitate the development of Sustainable Urban Drainage Systems (SUDS), including integrated constructed wetlands, at a local, district and County level, to control surface water outfall and protect water quality.
IE2 objective 4	To incorporate Sustainable Drainage at a site and/or district scale, including the potential for wetland facilities
IE2 objective 5	To limit surface water run-off from new developments through the use of Sustainable Urban Drainage Systems (SUDS) and avoid the use of underground attenuation and storage tanks
IE2 objective 6	To promote and support the retrofitting of Sustainable Urban Drainage Systems (SUDS) in established urban areas, including integrated constructed wetlands
Water Resources and Biodiversity, Flora and Fauna	
IE2 objective 8	To protect salmonid water courses, such as the Liffey and Dodder Rivers catchments (including Bohernabreena Reservoir), which are recognised to be exceptional in supporting salmonid fish species.
IE2 objective 9:	To protect water bodies and watercourses, including rivers, streams, associated undeveloped riparian strips, wetlands and natural floodplains, within the County from inappropriate development. This will include protection buffers in riverine and wetland areas as appropriate. (see also Objective G3 Objective 2 – Biodiversity Protection Zone
IE2 objective 11	To protect surface water quality by assessing the impact of domestic and industrial misconceptions to the drainage network in the County and the associated impact on surface water quality, and by implementing measures to address same.

CDP Policy/Objective	Text
Infrastructure & environmental quality (IE) policy 3	Flood Risk It is the policy of the Council to continue to incorporate Flood Risk Management into the spatial planning of the County, to meet the requirements of the EU Floods Directive and the EU Water Framework Directive
Material Assets –Waste Management	
Infrastructure & environmental quality (IE) policy 5	Waste Management It is the policy of the Council to implement European Union, National and Regional waste and related environmental policy, legislation, guidance and codes of practice to improve management of material resources and wastes
IE5 objective 1	To support the implementation of the Eastern–Midlands Region Waste Management Plan 2015-2021 by adhering to overarching performance targets, policies and policy actions
IE5 objective 2	To support waste prevention through behavioural change activities to de-couple economic growth and resource use.
IE5 objective 3	To encourage the transition from a waste management economy to a green circular economy to enhance employment and increase the value recovery and recirculation of resources
IE5 objective 4	To provide, promote and facilitate high quality sustainable waste recovery and disposal infrastructure/ technology in keeping with the EU waste hierarchy and to adequately cater for a growing residential population and business sector
IE5 objective 5	To provide for and maintain the network of bring infrastructure (e.g. civic amenity facilities, bring banks) in the County to facilitate the recycling and recovery of hazardous and non-hazardous municipal wastes
IE5 objective 6	To seek the provision of adequately sized public recycling facilities in association with new commercial developments and in tandem with significant change of use/extensions of existing commercial developments where appropriate
IE5 objective 7	To develop a countywide network of green waste centres in suitable locations to expand the collection system for compostable waste
IE5 objective 8:	To secure appropriate provision for the sustainable management of waste within developments, including the provision of facilities for the storage, separation and collection of such waste
Soil and Geology	

CDP Policy/Objective	Text
IE2 objective 10	To require adequate and appropriate investigations to be carried out into the nature and extent of any soil and groundwater contamination and the risks associated with site development work, in particular for brownfield development
Heritage, conservation and landscapes (HCL) policy 19	Geological Sites It is the policy of the Council to maintain the conservation value and seek the sustainable management of the County's geological heritage resource.
HCL19 Objective 1:	To protect designated County Geological Sites from inappropriate development and to promote the importance of such sites through the County's Heritage Plan.
Air Quality, Noise, Population and Human health	
Infrastructure & environmental quality (IE) policy 7	Environmental Quality It is the policy of the Council to have regard to European Union, National and Regional policy relating to air quality, light pollution and noise pollution and to seek to take appropriate steps to reduce the effects of air, noise and light pollution on environmental quality and residential amenity.
IE7 objective 1	To implement the provisions of EU and National legislation on air, light and noise control and other relevant legislative requirements, as appropriate, in conjunction with all relevant stakeholders
IE7 objective	To implement the recommendations of the Dublin Regional Air Quality Management Plan to protect people from the harmful health effects associated with air pollution, to preserve good air quality where it exists and to improve air quality where it is unsatisfactory
IE7 objective 3:	To implement the relevant spatial planning recommendations and actions of the Dublin Agglomeration Environmental Noise Action Plan 2013 – 2018
IE7 objective 4	To ensure that future developments are designed and constructed to minimise noise disturbance and take into account the multi functional uses of streets including movement and recreation as detailed in the Urban Design Manual (2009) and the Design Manual for Urban Roads and Streets (2013).
IE7 objective 5	To ensure external lighting schemes minimise light spillage or pollution in the immediate surrounding environment and do not adversely impact on residential or visual amenity and biodiversity in the surrounding areas.

CDP Policy/Objective	Text
IE7 SLO 1	To provide noise barriers along the uncovered parts of Moy Glas estate facing the Grangecastle Road and 100 metres along Griffeen Avenue
Green Infrastructure, Biodiversity, Flora and Fauna, Water, Landscape, Population and Human health	
Green infrastructure (g) policy 1	Overarching It is the policy of the Council to protect, enhance and further develop a multifunctional Green Infrastructure network by building an interconnected network of parks, open spaces, hedgerows, grasslands, protected areas, and rivers and streams that provide a shared space for amenity and recreation, biodiversity protection, flood management and adaptation to climate change.
G1 objective 1	To establish a coherent, integrated and evolving Green Infrastructure network across South Dublin County with parks, open spaces, hedgerows, grasslands, protected areas, and rivers and streams forming the strategic links and to integrate the objectives of the Green Infrastructure Strategy throughout all relevant Council plans, such as Local Area Plans and other approved plans
Green infrastructure (G) policy 2 green infrastructure network	It is the policy of the Council to promote and develop a coherent, integrated and evolving Green Infrastructure network in South Dublin County that can connect to the regional network, secure and enhance biodiversity, provide readily accessible parks, open spaces and recreational facilities
G2 objective 1	To reduce fragmentation of the Green Infrastructure network and strengthen ecological links between urban areas, Natura 2000 sites, proposed Natural Heritage Areas, parks and open spaces and the wider regional Green Infrastructure network
G2 objective 2	To protect and enhance the biodiversity value and ecological function of the Green Infrastructure network.
G2 objective 3	To restrict development that would fragment or prejudice the Green Infrastructure network.
G2 objective 4	To repair habitat fragmentation and provide for regeneration of flora and fauna where weaknesses are identified in the network
G2 objective 5:	To integrate Green Infrastructure as an essential component of all new developments
G2 objective 8	To provide for the incorporation of Eco-ducts and/or Green Bridges at ecologically sensitive locations on the County's road

CDP Policy/Objective	Text
	and rail corridors that will facilitate the free movement of people and species through the urban and rural environment.
G2 objective 9	To preserve, protect and augment trees, groups of trees, woodlands and hedgerows within the County by increasing tree canopy coverage using locally native species and by incorporating them within design proposals and supporting their integration into the Green Infrastructure network.
G2 objective 10	To promote a network of paths and cycle tracks to enhance accessibility to the Green Infrastructure network, while ensuring that the design and operation of the routes responds to the ecological needs of each site.
G2 objective 11	To incorporate appropriate elements of Green Infrastructure e.g. new tree planting, grass verges, planters etc. into existing areas of hard infrastructure wherever possible, thereby integrating these areas of existing urban environment into the overall Green Infrastructure network
Green infrastructure (g) policy 3	Watercourses Network It is the policy of the Council to promote the natural, historical and amenity value of the County's watercourses; to address the long term management and protection of these corridors and to strengthen links at a regional level
G3 objective 1	To promote the natural, historical and amenity value of the County's watercourses and address the long term management and protection of these corridors in the South Dublin Green Infrastructure Strategy.
G3 objective 3	To ensure the protection, improvement or restoration of riverine floodplains and to promote strategic measures to accommodate flooding at appropriate locations, to protect ground and surface water quality and build resilience to climate change.
G3 objective 4	To uncover existing culverts and restore the watercourse to acceptable ecological standards and for the passage of fish, where possible.
G3 objective 5	To restrict the encroachment of development on watercourses, and provide for protection measures to watercourses and their banks, including but not limited to: the prevention of pollution of the watercourse, the protection of the river bank from erosion, the retention and/or provision of wildlife corridors and the protection from light spill in sensitive locations, including during construction of permitted development.
G4 objective 1	To support and facilitate the provision of a network of high quality, well located and multifunctional public parks and open spaces throughout the County and to protect and enhance the environmental capacity and ecological function of these

CDP Policy/Objective	Text
	spaces
G4 objective 2	To connect parks and areas of open space with ecological and recreational corridors to aid the movement of biodiversity and people and to strengthen the overall Green Infrastructure network
G4 objective 3	To enhance and diversify the outdoor recreational potential of public open spaces and parks, subject to the protection of the natural environment
G4 objective 4	To minimise the environmental impact of external lighting at sensitive locations within the Green Infrastructure network to achieve a sustainable balance between the recreational needs of an area, the safety of walking and cycling routes and the protection of light sensitive species such as bats.
G4 objective 5	To promote the planting of woodlands, forestry, community gardens, allotments and parkland meadows within the County's open spaces and parks
G4 objective 6	To take steps, in conjunction with communities and businesses, to plant existing areas of grassed open space to promote the development of multifunctional amenity areas with enhanced biodiversity value
G4 objective	To avoid the cumulative fragmentation and loss of ecologically sensitive areas of the Green Infrastructure network to artificial surfaces and to position recreational facilities that incorporate artificial surfaces at appropriate community-based locations
Green infrastructure (G) policy 5	Sustainable Urban Drainage Systems It is the policy of the Council to promote and support the development of Sustainable Urban Drainage Systems (SUDS) in the County and to maximise the amenity and biodiversity value of these systems.
Green infrastructure (G) policy 6	New Development in Urban Areas It is the policy of the Council to support the protection and enhancement of Green Infrastructure in all new development in urban areas, to strengthen Green Infrastructure linkage across the wider urban network and to achieve the highest standards of living and working environments
G6 objective 1	To protect and enhance existing ecological features including tree stands, woodlands, hedgerows and watercourses in all new developments as an essential part of the design process
G6 objective 2	To require new development to provide links into the wider Green Infrastructure network, in particular where similar features exist on adjoining sites

CDP Policy/Objective	Text
G6 objective 3	To require multifunctional open space provision within all new developments that includes provision for ecology and sustainable water management
Biodiversity and Cultural Assets	
Heritage, conservation and landscapes (HCL) policy 1	Overarching It is the policy of the Council to protect, conserve and enhance natural, built and cultural heritage features, and to support the objectives and actions of the County Heritage Plan
HCL1 objective 1	To protect, conserve and enhance natural, built and cultural heritage features and restrict development that would have a significant negative impact on these assets
HCL1 objective 2	To support the objectives and actions of the County Heritage Plan, including the preparation of a County Biodiversity Plan
Cultural Assets	
Heritage, conservation and landscapes (HCL) policy 2	Archaeological Heritage It is the policy of the Council to manage development in a manner that protects and conserves the Archaeological Heritage of the County and avoids adverse impacts on sites, monuments, features or objects of significant historical or archaeological interest.
Heritage, conservation and landscapes (HCL) policy 3	Protected Structures It is the policy of the Council to conserve and protect buildings, structures and sites contained in the Record of Protected Structures and to carefully consider any proposals for development that would affect the special character or appearance of a Protected Structure including its historic curtilage, both directly and indirectly.
HCL2 Objective 2	: To ensure that development is designed to avoid impacting on archaeological heritage that is of significant interest including previously unknown sites, features and objects.
HCL3 objective 3	To address dereliction and encourage the rehabilitation, renovation, appropriate use and re-use of Protected Structures.
Heritage,	Older Buildings, Estates and Streetscapes It is the policy of the Council to encourage the preservation of older features,

CDP Policy/Objective	Text
conservation and landscapes (HCL) policy 5	buildings, and groups of structures that are of historic character including 19th Century and early to mid 20th Century houses, housing estates and streetscapes.
Heritage, conservation and landscapes (HCL) policy 6	Features of Interest It is the policy of the Council to secure the identification, protection and conservation of historic items and features of interest throughout the County including street furniture, surface finishes, roadside installations, items of industrial heritage and other stand alone features of interest.
Landscapes	
Heritage, conservation and landscapes (HCL) policy 7	Landscapes It is the policy of the Council to preserve and enhance the character of the County's landscapes particularly areas that have been deemed to have a medium to high Landscape Value or medium to high Landscape Sensitivity and to ensure that landscape considerations are an important factor in the management of development
HCL7 objective 1	To protect and enhance the landscape character of the County by ensuring that development retains, protects and, where necessary, enhances the appearance and character of the landscape, taking full cognisance of the Landscape Character Assessment of South Dublin County (2015).
Grand Canal: Biodiversity, Flora and Fauna, Landscape, Population and Human Health and Cultural Assets	
Heritage, conservation and landscapes (HCL) policy 11	Grand Canal It is the policy of the Council to promote the Grand Canal as a key component of the County's Green Infrastructure network and to protect and enhance the visual, recreational, environmental, ecological, industrial heritage and amenity value of the Grand Canal (pNHA) and its towpaths, adjacent wetlands and associated habitats
HCL11 objective 1	To protect and enhance the important biodiversity resource offered by the Grand Canal.
HCL11 objective 2	To facilitate the development of the Grand Canal as a recreational route for walking, cycling, nature study and water based activities including fishing, canal boating, rowing and canoeing/kayaking, subject to appropriate environmental safeguards and assessments

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HCL11 objective 3	To ensure that development along or adjacent to the Grand Canal contributes to the creation of an open and integrated network of walking and cycling routes that integrate with the Grand Canal Way Green Route.
HCL11 objective 4	To ensure that development along or adjacent to the Grand Canal protects, incorporates and enhances built and industrial heritage features, particularly historic canal and mill buildings, and also sets out to protect the setting of such built heritage features.
HCL11 objective 5	To ensure that development along and adjacent to the Grand Canal protects and incorporates high value natural heritage features including watercourses, wetlands, grasslands, woodlands, mature trees, hedgerows and ditches and includes for an appropriate set-back distance or buffer area from the pNHA boundary to facilitate protected species, biodiversity, and a fully functioning Green Infrastructure network.
HCL11 objective 6:	enhance the industrial heritage and the recreational and amenity potential of the 12th Lock and pursue the protection and conservation of the rich natural, built and cultural heritage of the area including natural habitats and ecological resources along the Grand Canal and Griffeen River
Cultural Assets	
Heritage, conservation and landscapes (HCL) policy 18	Cultural Heritage It is the policy of the Council to promote the County's cultural heritage.
HCL18 objective 1	To work towards establishing an environment for promoting cross cultural understanding, racial harmony, mutual understanding and appreciation of all religious and ethnic traditions through the County.
HCL18 objective 2	To promote the Irish Language and favour its use in the promotion of the Villages Initiative
HCL18 objective 3	To promote local heritage, the naming of any new residential development will reflect the local and historical context of its siting, and should include the use of the Irish language
Climate Change and energy	

CDP Policy/Objective	Text
Energy policy 1	(E) Responding to European and National Energy Policy & Legislation It is the policy of the Council to respond to the European and National Energy Programme through the County Development Plan – with policies and objectives that promote energy conservation, increased efficiency and the growth of locally based renewable energy alternatives, in an environmentally acceptable and sustainable manner.
Energy policy 2	(E) South Dublin Spatial Energy Demand Analysis It is the policy of the Council to implement the recommendations of the South Dublin Spatial Energy Demand Analysis (SEDA) in conjunction with all relevant stakeholders, promoting energy efficiency and renewable energy measures across the County
Energy policy 3	(E) Energy Performance in Existing Buildings It is the policy of the Council to promote high levels of energy conservation, energy efficiency and the use of renewable energy sources in existing buildings
E3 objective 1	To ensure that medium to large scale residential and commercial developments are designed to take account of the impacts of climate change, including the installation of rainwater harvesting systems and that energy efficiency and renewable energy measures are incorporated in accordance with national building regulations, policy and guidelines.
Energy policy 4	(E) Energy Performance in New Buildings It is the policy of the Council to ensure that new development is designed to take account of the impacts of climate change, and that energy efficiency and renewable energy measures are considered in accordance with national building regulations, policy and guidelines.
Energy policy 6	(E) Low Carbon District Heating Networks (a) It is the policy of the Council to support the development of low carbon district heating networks across the County based on technologies such as combined heat and power (CHP), large scale heat pumps, and renewable energy opportunities including geothermal energy, energy from waste, biomass and bio-gas. (b) It is the policy of the Council to support the development of both deep and shallow geothermal energy sources throughout the County. Deep geothermal projects are particularly suited to areas demonstrating high heat densities
Energy policy 7	(E) Solar It is the policy of the Council to promote the development of solar energy infrastructure in the County, in particular for on-site energy use, including solar PV, solar thermal and seasonal storage technologies. Such projects will be considered subject to environmental safeguards and the protection of natural or built heritage features, biodiversity and views and prospects.

CDP Policy/Objective	Text
Energy policy 10	(E) Small to Medium Scale Wind Energy Schemes It is the policy of the Council to encourage small to medium scale wind energy developments within industrial or business parks, and support small community-based proposals in urban areas provided they do not negatively impact upon the environmental quality, and visual or residential amenities of the area
11.8.1 Environmental Impact Assessment	The Planning and Development Regulations 2001 specify mandatory thresholds above which Environmental Impact Statements (EIS) are required, setting out the types and scale of development proposals that require EIS. Where it appears to the Planning Authority that a development proposal that falls below the thresholds set out in the Planning and Development Regulations would be likely to have a significant environmental effect, a subthreshold/discretionary EIS can be requested by the Planning Authority.
11.8.2 Appropriate Assessment	<p>Under Article 6 of the Habitats Directive there is a requirement to establish whether, in relation to plans and projects, Appropriate Assessment (AA) is required.</p> <p>If, following screening, it is considered that AA is required then the proponent of the plan or project must prepare a Natura Impact Statement. A plan or project will only be authorised after the competent authority has ascertained, based on scientific evidence, Screening for Appropriate Assessment, and a Stage 2 Appropriate Assessment where necessary, that:</p> <p>The plan or project will not give rise to significant adverse direct, indirect or secondary effects on the integrity of any Natura 2000 site (either individually or in combination with other plans or projects), or The plan or project will have significant adverse effects on the integrity of any Natura 2000 (that does not host a priority natural habitat type and/or a priority species) but there are no alternative solutions and the plan or project must nevertheless be carried out for imperative reasons of overriding public interest – including those of a social or economic nature. In this case, it will be a requirement to follow procedures set out in legislation and agree and undertake all compensatory measures necessary to ensure the protection of the overall coherence of a Natura 2000 site/network,</p> <p>or The plan or project will have a significant adverse effect on the integrity of any Natura 2000 site (that hosts a natural habitat type and/or a priority species) but there are no alternative solutions and the plan or project must nevertheless be carried out for imperative reasons for overriding public interest - restricted to reasons of human health or public safety, to</p>

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beneficial consequences of primary importance for the environment or, further to an opinion from the Commission, to other imperative reasons of overriding public interest.

In this case, it will be a requirement to follow procedures set out in legislation and agree and undertake all compensatory measures necessary to ensure the protection of the overall coherence of a Natura 2000 site/network

8.3 Reworded Mitigation Measures-

The following table presents mitigation measures recommended for the SDZ Planning Scheme through rewording or additional text. Where new text is proposed it is presented in **bold, green** font.

Table 17 Additional Text/reworded Mitigation Measures

SEA Recommendation

Included in SDZ
Planning
Scheme (Y/N).
Y

Chapter 1 Key Principles

Section 1.3 Overarching Principles of the Planning Scheme

To maximise **appropriate** access to and use of the Grand Canal, Griffeen Valley Park and other biodiversity assets in an **ecologically** sensitive way, thereby offering unique selling points to the SDZ Planning Scheme.

To ensure that measures to support the sustainable development of the SDZ Lands as detailed in the accompanying SEA Environmental Report, and associated environmental assessments are applied and adhered to in the Planning Scheme implementation.

Chapter 2.2 Movement and Transport

Y

2.2.5 Bridges

The barriers created by pre-existing strategic roads, the Grand Canal and the Kildare/Cork Railway Line form challenges to movement across the SDZ lands. Rather than being avoided or mitigated, these features will be integrated within the urban structure of Clonburris with important connections across them.

A number of bridges are required to enable north-south movement across the Canal and Railway for different modes of movement. Further to the existing bridges that cross the canal and railway line, a total of five new bridges are proposed with the upgrade of an existing pedestrian and cycle bridge to a Green Bridge at Hayden's Lane. Such bridges

shall be provided in accordance with the Phasing and Implementation Strategy detailed in Chapter 4.

In addition to the requirements set out under Section 2.11 (Biodiversity and Natural Heritage), **where new canal crossings i.e footbridges/cycle bridges are proposed, all canal crossings should be designed so as to avoid fragmentation of linear habitats associated with the Grand Canal Corridor.**

Chapter 2.3 Blue and Green Infrastructure

Y

The key principles for green and blue infrastructure for the Clonburris scheme are as follows

- To protect, enhance and develop an interconnected green and blue infrastructure network of parks, open spaces, hedgerows, grasslands, protected areas, rivers and streams for amenity and recreation, biodiversity protection, flood management and adaptation to climate change.
- To retain and improve key landscape and ecological features such as hedgerows, the Grand Canal and the Griffeen River.
- To incorporate new elements of Green and Blue Infrastructure such as tree planting, parks and natural open spaces and sustainable urban drainage systems.
- To reduce fragmentation and strengthen ecological links through the retrofitting and or upgrading of the pedestrian bridge over the railway line to a 'green bridge'
- **To connect parks and areas of open space with ecological and recreational corridors to aid the movement of biodiversity and people and to strengthen the overall Green Infrastructure network.**
- To seek **to retain** ~~prevent loss of~~ important hedgerows, aquatic habitats and established tree lines wherever possible.

To support native plant and animal species and encourage corridors for their movement.

2.3.2 Green Infrastructure Network

Y

Grand Canal

The Grand Canal (pNHA) is a man-made linear waterway that hosts a rich variety of plant and animal species including protected species and numerous mature tree species and is a key element in the existing Green Infrastructure Network. Associated canal structures and buildings contribute to the unique setting and historic character of the Grand

Canal and the southern tow-path provides an uninterrupted corridor for pedestrian and cyclist movement.

Development proposals on the SDZ lands close to the Grand Canal shall protect and incorporate high value natural heritage features including watercourses, wetlands, grasslands, woodlands, mature trees, hedgerows and ditches and include for a 50m set back for all buildings and a 30m set-back distance for development (with the exception of bridges and footpaths) from the pNHA boundary to facilitate the continuity of the Grand Canal as a corridor for protected species, biodiversity, and a fully functioning Green Infrastructure network. (See also Sections 2.10 and 2.11)

Where new canal crossings i.e footbridges/cycle bridges are proposed, they should be designed so as to avoid fragmentation of linear habitats associated with the Grand Canal Corridor.

2.3.2 Green Infrastructure Network

Y

Green Bridge

It is an objective of the scheme to retrofit or replace the existing pedestrian bridge over the railway line to provide a green bridge connecting the Griffeen Valley Park and the proposed extension of the park to the south.

The green bridge shall be integrated into the surrounding landscape and shall provide connections for pedestrians and cyclists, commuting routes for species and the park landscape as a whole.

The design of the green bridge shall be in accordance with the Landscape Institute (UK) Green Bridges Technical Guidance Note 09/2015 December 2015.

2.8 Built Form and Design Strategy

Y

External Finishes and Appearance

To aid in place making and way-finding, careful consideration should be paid to materials and design to ensure that each development makes a positive contribution to its locality and Development Area. Building finishes shall be durable and of a high quality and should adhere to the principles of sustainability and energy efficiency. **Consideration should be given where possible to reusing and recycling materials to promote the circular economy and reduce**

construction and demolition waste.

Traditional materials such as stone, brick, timber, metal and glass should be utilised throughout the SDZ lands.

2.10.2 Proposed Open Spaces

Y

Parks and Landscape Strategy

A Parks and Landscape Strategy shall be prepared by all the developers, for the entire SDZ lands and shall be submitted to and agreed in writing with the Planning Authority prior to the commencement of development on the lands. The Parks and Landscape Strategy shall be prepared by a suitably qualified Landscape Architect in conjunction with a suitably qualified Ecologist and shall include the following

- Overarching design details for the strategic open spaces, local parks and squares, urban spaces and squares, Strategic Amenity Routes and local links.
 - Details of Active and passive recreation provision on the lands
 - A Biodiversity Management Plan, prepared by a qualified ecologist **and be guided by relevant best practice guidelines and established techniques for habitats present on the SDZ lands.**
 - The Biodiversity Management Plan shall incorporate the following measures
 - The preservation of existing hedgerows, treelines, woodland, scrub and other semi-natural habitats **where possible**
 - **High value historical boundary hedgerows shall be retained and management details included; in particular the Barony hedgerows.**
 - **Where hedgerows, treelines woodland and other semi-natural habitats are to be retained within the SDZ Planning Scheme lands, details of their management and protection should be provided in a Habitat Management Plan.**
 - **Opportunities to enhance the biodiversity value of SUDs measures where relevant should be included in habitat management plans.**

2.10.3 Hierarchy of Open Spaces

Y

An extension to the Griffeen Valley Park

The Griffeen Valley Park shall be extended southwards to the Grand Canal to provide a high quality flagship park. A

Parks Strategy for the Griffeen Valley

The Griffeen Valley Park shall be extended southwards to the Grand Canal to provide a high quality flagship park. A plan for the Griffeen Valley Park extension shall be designed in accordance with the overall Parks and Landscape Strategy for the SDZ lands and shall be submitted to and agreed in writing with South Dublin County Council at planning application stage and may include:

- A mix of active recreational facilities in the core area of the park;
- Formal and informal children's play areas;
- Walkways and cycleways (wide enough to accommodate two people passing and be constructed using suitable surface material);
- Seating and passive recreation areas;
- Edges of the park shall be carefully designed and laid out, forming an interface between the park's open central character and adjacent development;
- Planting in drifts to enhance biodiversity, definition and functional areas;
- Habitat improvements to existing ecological resources including the Griffeen River and the Grand Canal;
- Support the creation of new habitats within the park to address changes to natural heritage elsewhere in the plan lands;
- Retention and enhancement of selected hedgerow;
- Surface-water attenuation ponds to the north-west, fed by the proposed SUDS system. These areas should form high quality, water based ecological landscapes; and
- Retrofit or replace the existing pedestrian bridge over the railway line to provide 'green bridge'. The green bridge shall be integrated into the surrounding landscape and shall provide connections for pedestrians and cyclists, commuting routes for species and the park landscape as a whole. **The detailed design of the bridge shall be in accordance with the Landscape Institute UK Green Bridges Technical Guidance Note 09/2015 December 2015**

Grand Canal Park

Y

The lands require appropriate new landscape interventions to enhance the existing character and ecological value of the canal. The Park would also strengthen the amenity and function of the Grand Canal as a strategic east-west link on

the southern side. This park should also form a landscape corridor that should connect the surrounding neighbourhoods. A plan for the Grand Canal Park shall be designed in accordance with the overall Parks and Landscape Strategy for the SDZ lands and shall be submitted to and agreed in writing with South Dublin County Council at planning application stage and may include:

- Ensure that the northern side of canal retains a more ecological character, to enhance the quality of the proposed Natural Heritage Area;
- Active and passive recreational facilities
- Children's Play facilities;
- Walking and cycling routes;
- Retention and enhancement of selected hedgerow;
- Ensure that the southern side of the canal provides a leisure function;
- **Appropriate access to the northern towpath will be based on ecological surveys to ensure the integrity of the Grand Canal ecological corridor is maintained, enhancement of existing hedgerow and treeline would assist in this i.e. planting of thorny species such as blackthorn and hawthorn and**
- Provide for the refurbishment of Omer's Lock house as a cultural asset, set within an appropriate landscape context.

Barony Park

This park shall comprise a new mixed character and function park that would connect the neighbourhoods away from the Canal, to the south of the railway. The hedgerows that form the historic barony boundaries, which gives the park its name, shall be retained to enhance the ecological character and identity of the lands. A pedestrian bridge over the railway shall connect the southern area and northern areas of the park. A plan for the Barony Park shall be designed in accordance with the overall Parks and Landscape Strategy for the Planning Scheme and shall be submitted to and agreed in writing with SDCC at planning application stage and may include:

- Retention and enhancement of hedgerow;
- The northern area should take the form of contemporary parkland, with SUDS attenuation pond, open spaces and tree planting;
- Active recreation facilities with ancillary lighting, and parking;
- Childrens Play facilities;
- Walking and cycling routes;
- New pedestrian/cycle bridge shall be designed to integrate into the park and to avoid fragmentation of linear habitats;
- The southern half of the park closer to the Grand Canal shall retain a more ecological character with appropriate access to the northern towpath. **Access to the northern towpath will be based on ecological surveys to ensure the integrity of the Grand Canal ecological corridor is maintained enhancement of existing hedgerow and treeline would assist in this i.e. planting of thorny species such as blackthorn and hawthorn;**
- Enhancing and protecting existing biodiversity;
- Canal bridges provide opportunities to form distinct landmark elements; and
- Some active uses, cafes and small pavilion buildings for community and educational use.

Grand Canal ecological corridor

The corridor will form a key element of the proposed Barony Park to the north and the Grand Canal Park to the south. It is an objective of the scheme to enhance the biodiversity and ecological character of the proposed Natural Heritage Area. Developments fronting onto the Canal shall facilitate the continuity of the ecological corridor through the planting of native tree and hedgerow species and the managed access to the northern towpath.

All buildings shall be set back 50m from the Canal and development (with the exception of footpaths and bridges which shall be set 30m from the Grand Canal). Development proposals along the Grand Canal Corridor shall be

Y

accompanied by ecological impact assessments undertaken by an appropriately qualified and experienced ecologist **and in line with CIEEM guidelines (2016).**

All development proposals along the Grand Canal shall be accompanied by a detailed landscaping plan, prepared by a suitably qualified landscape architect. The landscape plan shall address the varying topography of the site and shall have regard to the proposed Natural Heritage Area and the Protected Species using this corridor. The plan shall also include details of hard and soft landscaping, proposed species and sensitive lighting. **Where new canal crossings (i.e footbridges/cycle bridges) are proposed, they shall be designed so as to avoid fragmentation of linear habitats associated with the Grand Canal Corridor**

2.11.2 Biodiversity and Natural Features

Grand Canal

The Grand Canal is a proposed Natural Heritage Area (pNHA) and comprises the canal channel and the banks on either side of it. It is considered to be the most valuable natural, built and cultural heritage asset on the lands. The ecological value of the canal lies in the diversity of species it supports along its linear habitats including Annex II of the EU Habitats Directive species Otter and White-clawed Crayfish, Bats species (Common Pipistrelle, Soprano Pipistrelle, Leisler's Bat, Daubenton's Bat and Brown Long-eared Bat), and also flora and fauna of local importance.

Any development within the SDZ lands shall assist with safeguarding and improving the quality, character and continuity of the Grand Canal (pNHA) and facilitating the protected species, biodiversity, and its contribution to a fully functioning Green Infrastructure network. The Planning Scheme provides for a 50m set-back for all buildings from the northern side of the Grand Canal, to afford the optimal degree of protection to the Grand Canal ecological corridor.

In order to ensure the continuity of the character of the northern tow path as an ecological corridor, access to the northern tow path of the Grand Canal shall be carefully designed, in particular, access to areas of greatest sensitivity shall be avoided. Points of access to the northern towpath of the Canal shall be detailed in the Landscape and Parks strategy for the lands (see Section 2.10.Landscape and Open Space).

Appropriate access to the northern towpath shall be carefully designed based on site specific characterises and sensitivities (including lighting design, new planting of hawthorn and blackthorn species) and shall be set out in the Landscape and Parks Strategy. (See also Sections 2.10)

Where new canal crossings i.e footbridges/cycle bridges are proposed, they shall be designed so as to avoid fragmentation of linear habitats associated with the Grand Canal Corridor.

All external lighting should be downlighting and should be time limited where possible. Lighting should be avoided in sensitive wildlife areas and light pollution, in general, should be avoided. Any additional nocturnal illumination of the canal corridor resulting from the development of the planning Scheme should be kept to a minimum. Further lighting along the northern bank shall be restricted and shall be based on the sensitivities of bat species using the northern bank.

2.11.2 Biodiversity and Natural Heritage Features

Ecological corridors

There are three primary ecological corridors on the lands comprising the Grand Canal and associated towpath, Griffeen stream and along the railway line.

The Griffeen stream is used by species such as Trout and white-clawed Crayfish, and also the Otter for both hunting and commuting. The Griffeen stream corridor also links the Grand Canal to several habitats, including the River Liffey and as such is of importance to these species.

The Kildare rail line essentially provides an uninterrupted corridor through countryside, through an array of habitats and could be used by a large number of species for commuting between various habitats.

All development proposals within 50m of the Grand Canal and feeder streams and 30m meters from the top of the bank of all watercourses shall be accompanied by an Ecological **Impact** Assessment. **This shall be prepared by a qualified Ecologist and in line with *Guidelines for Ecological Impact Assessment in the UK and Ireland, Terrestrial, Freshwater and Coastal* (CIEEM 2nd ed 2016)**

All development proposals should seek to enhance biodiversity and avoid or minimise loss of existing habitats and wildlife corridors.

In order to inform the Strategic Environmental Assessment and the Planning Scheme, ecological surveys were carried out in 2015, 2016 and 2017. Given the biodiversity value of the SDZ lands, a Biodiversity Management Plan shall be prepared by a qualified Ecologist and be guided by relevant best practice guidelines and established techniques for habitats present on the SDZ lands. The Biodiversity Management Plan shall form part of the Parks and Landscape Strategy. (See Section 2.10 Parks and Landscape Strategy)

Y

2.11.2

Protected Species:

In order to comply with European and National legislation on nature conservation, and to ensure that areas of biodiversity value are adequately protected, an Ecological Assessment **prepared by a qualified ecologist and in line with Guidelines for ecological impact assessment in the UK and Ireland Terrestrial, freshwater and coastal (CIEEM 2nd ed 2016)** will be required for development proposals that have the potential to impact on environmentally sensitive sites in particular within ~~30m~~ **50m** of the Grand Canal, and 30m the Griffeen River and the Kilmahuddrick stream.

Environmentally sensitive sites that are protected under EU and National Legislation; sites that may be in use by, or contain protected species or habitats; or sites that are in proximity to watercourses. All development proposals should seek to enhance biodiversity and avoid or minimise loss of existing local habitats and wildlife corridors.

2.11.2

Invasive Species

Three invasive species occur within the SDZ lands; Japanese Knotweed (*Fallopia japonica*); Himalayan Balsam (*Impatiens glandulifera*); and Canadian Waterweed (*Elodea canadensis*). No development shall take place on the lands until an Invasive Species Management and Control Plan has been prepared and implemented to prevent the introduction of any new species, prevent the movement and spread of any existing species and eradicate any existing species from the lands. **The intent of an Invasive Species Management and Control Plan is that all equipment and material must arrive at the site free of any invasive plant species propagules and that all equipment and material leaving the site must be free of any invasive plant species propagules. The Invasive Species Management and Control Plan shall be prepared by a suitably qualified person and shall include the following objectives:**

- To prevent the introduction of any new species of alien invasive plant to the site;

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- To prevent the movement and spread of any existing alien invasive plant species on site;
- To eradicate any populations of invasive alien plant species on site;

1. The Invasive Species Management and Control Plan shall Identify and map existing alien invasive plant species present within the SDZ lands and immediate area
2. Eradicate any populations of invasive species in accordance with best practice principles and guidelines issued by Invasive Species Ireland and National Parks and Wildlife Service.
3. Annual monitoring of the site for 5 years post eradication to ensure that any populations of alien invasive plant species have been eradicated; and
4. Traceability of all imported material and the imposition of requirement for certification of all imported material as being free of propagules of any Third Schedule-listed alien invasive plant species.

Chapter 2.12 Archaeological and Architectural Heritage

Y

Key Principle

To retain and enhance architectural heritage and archaeological heritage features, sites and structures within the SDZ lands by encouraging conservation, **adaptive re-use** and incorporation, where appropriate, within the built fabric and landscape of the SDZ Lands

Y

Chapter 3 Development and Character Areas

Key Principles

The three character areas will be developed in accordance with the following key principles

- Ensure that each character area is developed with open ended and integrated pedestrian and cycle routes that link with the main centres and adjacent neighbourhoods.
- Ensure that each character area is developed with regard to the required prescriptive statistical parameters in particular; identify densities, social and affordable housing, community and childcare facilities, retail and services and which identify the gross and net extent of each development area.

- Ensure that each character area is developed with regard to the physical parameters in particular; identify the main road layout, road type, parking conditions, principal access points, appropriate levels of vehicular and pedestrian permeability as well as key building frontages and public spaces and should generally be regarded as fixed.
- Ensure that key building frontages be provided to achieve the same degree of preservation of the amenities of adjoining properties or passive supervision of public space, as appropriate.
- **Ensure that each character area integrates green and blue infrastructure features as identified on the masterplan and supports ecological connectivity and enhancement where identified.**

Y

Chapter 4

4.9 Monitoring and Review

A review of the Phasing shall be undertaken by the Development Agency as part of Phase 2, i.e. before phase three can commence, to ensure that the required infrastructure and facilities detailed in Phases 1-2 of the Planning Scheme have been provided and are operational and that the overall Scheme is progressing and continues to progress in a satisfactory manner. The review shall include a Strategic Environmental Assessment monitoring report. **South Dublin County Council shall collate the existing relevant monitored data and is responsible for the preparation of the monitoring and publication of the report.**

8.4 Specific Mitigation Measures for SDZ Planning Scheme

Table 18 Specific Mitigation Measures

Mitigation measure	Text
MM1	Preparation of a Biodiversity Management Plan as part of the Parks and landscape Strategy
MM2	Construction Environmental Management Plans- please see below.
<p>MM2: Construction Environmental Management Plans (CEMPs)</p> <p>A CEMPS shall be prepared in advance of the physical elements proposed as part of this SDZ Planning Scheme and will be implemented throughout. Such plans shall incorporate relevant mitigation measures indicated below.</p> <p>South Dublin County Council will be informed in advance of construction activities in sensitive environmental areas.</p> <p>SDCC will be informed of all construction or maintenance works located within the vicinity of pNHAs (Grand Canal) or in the vicinity of watercourses linked to these designated conservation areas. Monitoring of works in these locations will be undertaken and the results of monitoring will be provided to SDCC.</p> <p>Where works are undertaken in/adjacent to sensitive environmental receptors all construction/maintenance staff will be inducted by means of a “Tool-box Talk” which will inform them of environmental sensitivities and the best practice to be implemented to avoid disturbance to these receptors</p> <p>All construction and maintenance works will be undertaken in accordance with the following guidance documents:</p> <ul style="list-style-type: none"> o Inland Fisheries Ireland’s Requirements for the Protection of Fisheries Habitat during Construction and Development Works. o CIRIA (Construction Industry Research and Information Association) Guidance Documents o Control of water pollution from construction sites (C532) o Control of water pollution from linear construction projects: Technical Guidance (C648) o Control of water pollution from linear construction projects: Site Guide (C649) o Environmental Good Practice on Site (C692) o NRA Guidance Documents o Guidelines for the Crossing of Watercourses during the Construction of National Road Schemes o Guidelines for the Management of Noxious Weeds and Non-Native Invasive Plant Species on National Roads o Guidelines for the Protection and Preservation of Trees, Hedgerows and Scrub Prior 	

to, during and Post Construction of National Road Schemes

Any excavations and/or vegetation removal will be minimised during construction and/or maintenance works.

Excavated material will not be stored immediately adjacent to watercourses.

Disturbance to natural drainage features should be avoided during the construction and/or maintenance of routes.

Construction machinery should be restricted to public and or site roads. As a general rule machinery should not be allowed to access, park or travel over areas outside the footprint of proposed walking/cycling routes.

During route maintenance no construction activities should be undertaken at watercourse crossing in wet weather conditions.

Suitable prevention measures should be put in place at all times to prevent the release of sediment to drainage waters associated with construction areas and migration to adjacent watercourses. To reduce erosion and silt-laden runoff, create, where possible, natural vegetation buffers and divert runoff from exposed areas, control the volume and velocity of runoff, and convey that runoff away from.

Where necessary drainage waters from construction areas should be managed through a series of treatment stages that may include swales, check dams and detention ponds along with other pollution control measures such as silt fences and silt mats.

Where vegetation removal associated with treelines, hedgerows, individual mature trees, scrub or woodland is required, this shall only be undertaken outside the breeding bird season, between March and August inclusive.

Where extensive areas of ground are to be exposed during route construction or maintenance dust suppression should be undertaken during periods of dry weather.

All chemical substances required during construction and/or maintenance works will be stored in sealed containers.

Any refuelling or lubrication of machinery will not be undertaken within 50m of a watercourse.

Spill kits will be required on site during construction and/or maintenance works.

Ensure non-native, invasive species do not occur at construction/maintenance areas, or if occurring, are not spread as a result of works. The NRA Guidance on invasive species, outlined above will be adhered to as well as the Invasive Species Management and Control Plan (See Section 2.11 of the SDZ Planning Scheme).

Disseminate information on sensitive ecological receptors, such as sensitive habitats,

breeding birds etc. occurring adjacent to or in the wider area. This information will aim to educate recreational users on the conservation status and sensitivities of such receptors to encourage responsible usage of routes.

CEMPs typically provide details of intended construction practice for the proposed development, including:

- a) location of the sites and materials compound(s) including area(s) identified for the storage of construction refuse
- b) location of areas for construction site offices and staff facilities
- c) details of site security fencing and hoardings
- d) details of on-site car parking facilities for site workers during the course of construction
- e) details of the timing and routing of construction traffic to and from the construction site and associated directional signage
- f) measures to obviate queuing of construction traffic on the adjoining road network
- g) measures to prevent the spillage or deposit of clay, rubble or other debris
- h) alternative arrangements to be put in place for pedestrians and vehicles in the case of the closure of any public right of way during the course of site development works
- i) details of appropriate mitigation measures for noise, dust and vibration, and monitoring of such levels
- j) containment of all construction-related fuel and oil within specially constructed bunds to ensure that fuel spillages are fully contained; such bunds shall be roofed to exclude rainwater
- k) disposal of construction/demolition waste and details of how it is proposed to manage excavated soil
- l) a water and sediment management plan, providing for means to ensure that surface water runoff is controlled such that no silt or other pollutants enter local water courses or drains
- m) details of a water quality monitoring and sampling plan
- n) if peat is encountered - a peat storage, handling and reinstatement management plan
- o) measures adopted during construction to prevent the spread of invasive species (such as Japanese Knotweed)
- p) Appointment of an ecological clerk of works at site investigation, preparation and construction phases.

8.5 Summary of Mitigation Measures and Environmental Effects for SDZ Planning Scheme

This table summarises the key environmental effects identified for the SDZ Planning scheme and indicates the specific measures that will apply for the Planning Scheme.

Table 19 Summary of Key Environmental Effects and Mitigation Measures to address same

SEA Theme:	Comment	Mitigation Measures
Water Resources including Flooding	Water and Flooding: Surface water movement – relatively flat topography of some of the SDZ lands. Drainage and flow of surface water. Design considerations around blue infrastructure, open space, green infrastructure and populations.	Surface Water Strategy and specific objectives therein. Green and Blue Infrastructure measures Parks and Landscape Strategy.
	Soil and Geology	Soil sealing and water flows Potential Soil contamination-historical dumping Invasive species-risk of introduction and spread particularly around the water courses. Carbon sinks and flooding
Biodiversity, Flora and Fauna	Further consideration of hedgerows	Surface Water Strategy.
	Balance between biodiversity and open space	MM 2 CEMPs (Section 2.9 Infrastructure) Requirement to prepare Invasive Species Management and Control Plan (Section 2.11 the SDZ Planning Scheme), MM 2 CEMPs (Section 2.9 Infrastructure)
	Canal setback to be further considered.	Retention of Barony hedgerows and priority of north-south aligned hedgerows within the overall Scheme Provisions in Chapters 2.3 and 2.11 regarding hedgerows and treelines. MM1 Preparation of Biodiversity Management Plan as part of Parks and Landscaping Strategy. Green and Blue Infrastructure provisions (Section 2.3). 50m set -back for buildings and 30m for development. Requirement for Ecological Impact Assessments See Section 2.11 ecological

SEA Theme:	Comment	Mitigation Measures
		corridors.
Appropriate Assessment Screening	<p>The following issues have been noted as being pertinent to the assessment of the overall Scheme</p> <ul style="list-style-type: none"> Potential pollution associated with surface water run off with potential hydrological links to European Sites Provision of adequate wastewater treatment with regards to any additional loading which may result with proposed development 	<p>Surface Water Strategy and Section 2.3 Green infrastructure and Blue infrastructure</p> <p>Chapter 4 Phasing</p>
Population and human health	<p>Cross cutting but key issues include impacts associated with railway and transport and design considerations.</p> <p>Design is key for roads, and railways and potential human health impacts</p> <p>Blue infrastructure, green infrastructure, open space and designing for user friendly and non user friendly blue infrastructure (eg ponds).</p>	<p>Railway Ecological Corridor (Section 2.11)</p> <p>Section 2.2. addresses pedestrian and cycle movement as well as the Street Network and Vehicular Movement</p> <p>Surface Water Strategy and Section 2.3 Green infrastructure and Blue infrastructure provides considerable detail and provisions for this issue.</p>
Material Assets including transport	<p>External providers for public transport provision</p> <p>Phasing of surface water –will have to be managed and be upfront about same.</p> <p>Existing water infrastructure capacity</p>	<p>Section 2.2 addresses railway and bus transportation.</p> <p>Surface Water Strategy as well as Chapter 4 Phasing addresses the phasing of surface water and water infrastructure capacity.</p>
Cultural heritage	<p>Unknown/undiscovered archaeological resources</p>	<p>Section 2.12 of the SDZ Planning Scheme addresses potential archaeological resources.</p> <p>In addition Heritage, conservation and landscapes (HCL) Policy 2 Archaeological Heritage and HLC Objective 2</p>
Green	<p>Enhancing green infrastructure and</p>	<p>Section 2.3 of the SDZ Planning</p>

SEA Theme:	Comment	Mitigation Measures
infrastructure	compensating between loss of habitats such as hedgerows and new habitats	Scheme.

9 Monitoring Measures

9.1 Introduction

It is proposed, in accordance with Article 10 of the SEA Directive, to base monitoring on a series of indicators which measure changes in the environment, especially changes which are critical in terms of environmental quality, for example water pollution levels. Monitoring will focus on the aspects of the environment that are likely to be significantly impacted upon by the implementation of the SDZ Planning Scheme.

The targets and indicators are derived from the Strategic Environmental Objectives (SEOs) discussed in Chapter Five. The target underpins the objective whilst the indicators are used to track the progress of the objective and targets in terms of monitoring of impacts.

The monitoring programme will consist of an assessment of the relevant indicators and targets against the data relating to each environmental component. Similarly, monitoring will be carried out frequently to ensure that any changes to the environment can be identified. This monitoring programme will guide one of the key mitigation measures contained within the Environmental Management Plan presented in Chapter Eight.

9.2 Frequency of Monitoring and Reporting

Should new data or the following occur, additional monitoring will be required:

- disturbance to sensitive habitats particularly along the western riparian zone of the Grand Canal
- pollution events associated with construction;
- boil notices on drinking water;
- fish kills;
- court cases taken by the DEHLG regarding impacts upon archaeological heritage including entries to the Record of Monuments and Places; and,
- complaints received from statutory consultees regarding avoidable impacts resulting from development which is granted permission under the Planning Scheme.

In turn the list below is subject to review at each reporting stage to reflect new data. Should the monitoring regime identify significant impacts (such as impacts on designated sites) early on in the plan implementation, this should trigger a review of the SDZ Planning Scheme and monitoring regime. In addition, the identification of positive impacts from monitoring should also be reported as this will assist in determining successful environmental actions.

South Dublin County Council are responsible for the implementation of the SEA Monitoring Programme including

- Linking SEA monitoring output with the mid-term review of the Planning Scheme;

- Monitoring specific indicators and identifying any significant effects, including cumulative effects;
- Collating the Phased Environmental Reports submitted by developers in the SDZ Planning Scheme
- Reviewing the effectiveness of monitoring/mitigation measures during the lifetime of the Planning Scheme; and
- Identifying any cumulative effects.

It is recommended that the monitoring report be made available to the public upon its completion. Table 17 below presents the SEA Monitoring Table. This table sets out the strategic environmental objectives, indicators and targets to be applied in monitoring the significant environmental effects of the implementation of the SDZ Planning Scheme, in accordance with Section 13J(2) of the Planning and Development (SEA) Regulations 2004, as amended. It is proposed that the SEA monitoring reporting should go parallel with the reviewing of the Planning Scheme.

Table 20 Monitoring Measures

SEA Topic	Strategic Environmental Objectives	Indicator	Target	Data Source
Biodiversity Flora and Fauna	B1: To avoid loss of habitats, geological features, species or their sustaining resources in and outside ¹⁷ designated and ecological sites	B1: Percentage of relevant habitats lost as a result of implementation of the Planning Scheme	B1: No losses of relevant habitats, species or their sustaining resources in designated ecological sites as a result of implementation of the SDZ Planning Scheme	Designated ecological sites mapping, CORINE Mapping, National Parks and Wildlife Service Records & Development Management Process in SDCC.
	B2: To avoid significant adverse impacts, including direct, cumulative and indirect impacts, to habitats, geological features, species or their sustaining resources in designated ecological sites by development within	B2: Number of significant adverse impacts, including direct, cumulative and indirect impacts, to relevant habitats, geological features, species or their sustaining resources in	B2: No significant adverse impacts, including direct, cumulative and indirect impacts, to relevant habitats, geological features, species or their sustaining resources in designated	Designated ecological sites mapping, Development Management Process in SDCC Council & Consultation with the National Parks and Wildlife Service Primary ecological

¹⁷ Amended on foot of submission by NPWS at SEA Scoping Stage.

SEA Topic	Strategic Environmental Objectives	Indicator	Target	Data Source
	or adjacent to these sites.	designated ecological sites by development within or adjacent to these sites as a result of implementation of the SDZ Planning Scheme.	ecological sites by development within or adjacent to these sites as a result of implementation of the SDZ Planning Scheme.	corridors mapping, CORINE mapping and Development Management Process in SDCC.
	B3:To sustain, enhance or - where relevant - prevent the loss of ecological networks or parts thereof which provide significant connectivity between areas of local biodiversity.	B3: Area of Biodiversity Network (County's primary ecological corridors which has been lost without mitigation.	B3: No ecological connectivity provided by the County's primary ecological corridors to be lost without mitigation as a result of implementation of the Planning Scheme	
		Percentage loss of functional connectivity without remediation resulting from development provided for in the Planning Scheme.	No significant ecological networks or parts thereof which provide functional connectivity to be lost without remediation resulting from development provided for in the Planning Scheme	
Population and human health Noise	To protect human health from hazards or nuisances arising from traffic and incompatible landuses <i>in particular noise and light pollution.</i>	Number of occasions that PM10 limits have been exceeded in at Air Monitoring stations closest to SDZ Planning Scheme ¹⁸ .	Reduce number of people exposed to traffic noise and air quality levels which endanger health and quality of life.	South Dublin County Council, EPA

¹⁸ Currently air quality monitoring closest station is at Tallaght.

SEA Topic	Strategic Environmental Objectives	Indicator	Target	Data Source
		<i>Number of complaints from SDZ Planning Scheme re; noise, light and air quality.</i>		
Air Quality and Noise	<i>To minimise air, noise and light pollution where possible.</i>	<i>Number of air, noise and light pollution measures including in each phase (may be in conjunction with green infrastructure measures)</i>	<i>Air, noise and light pollution measures designed into SDZ Planning Scheme.</i>	South Dublin County Council
Water	To maintain and improve, where possible, the quality of rivers, lakes and surface water including Grand Canal, Griffeen River and streams within the Clonburris SDZ Planning Scheme.	Biotic Quality Rating (Q Value) and risk assessment.	To maintain a biotic quality rating of Q4, in line with the requirement to achieve good water status under the Water Framework Directive, by 2027. To improve biotic quality ratings, where possible, to Q5.	Environmental Protection Agency. Environmental Protection Agency As noted under Section 2.3.1, data may not be available for this indicator when the monitoring evaluation is being prepared.
	To prevent pollution and contamination of ground water.	Groundwater Quality Standards and Threshold Values under Directive 2006/118/EC.	Compliance with Groundwater Quality Standards and Threshold Values under Directive	SDCC Irish Water EPA

SEA Topic	Strategic Environmental Objectives	Indicator	Target	Data Source
			2006/118/EC.	
	To prevent development on lands which pose - or are likely to pose in the future – a significant flood risk	Implementation and monitoring of Surface Water Strategy for SDZ Planning Scheme	No significant flood events associated with development activities on SDZ Planning Scheme.	Development Management Process in South Dublin County Council
Soil and Geology	To conserve soil resources where possible.	Area of greenfield land developed. Number of contaminated sites identified and remediated. Volume of waste recycled and volume of waste sent to landfill.	S1ii: To reduce the amount of Greenfield lands developed subject to SDZ Planning Scheme Objectives To meet national and EU targets on the recycling of municipal waste and its diversion from landfill	Development Management Process in SDCC As above Environmental Services Dept. SDCC Annual Waste Arisings Report from Environmental Services Dept. SDCC
Material Assets	To maintain and improve the quality of drinking water supplies.	Drinking water quality standards, (Microbiological, Chemical and Indicator parameters)	To maintain and improve drinking water quality in South Dublin County to comply with requirements of the European Communities (Drinking Water) Regulations 2000	SDCC Irish Water EPA
	To serve new development under the Planning Scheme with appropriate waste water treatment.	Phasing Programme of Planning Scheme	All new developments to require appropriate waste water systems.	SDCC Irish Water EPA
	To reduce car dependency within the SDZ Planning Scheme by way of, inter alia, encouraging modal change from car to more sustainable	Extent of developments built within SDZ Planning Scheme of high quality public transport accessibility.	An increase in the percentage of the population within the County travelling to work or school by public transport or non-	SDCC CSO Census

SEA Topic	Strategic Environmental Objectives	Indicator	Target	Data Source
	forms of public transport and encouraging development which will not be dependent on private transport.	Percentage of population within the SDZ Planning Scheme travelling to work or school by public transport or non-mechanical means as set out in Transport Study for SDZ Planning Scheme.	mechanical means. A decrease in the average distance travelled to work or school by the population of the County.	
	To minimise waste production and reduce the volume of waste to landfill and to operate sustainable waste management practices including promotion of circular economy	Volume of waste recycled and volume of waste sent to landfill Recycling facilities provided on phased basis of Planning Scheme	To meet national and EU targets on the recycling of municipal waste and its diversion from landfill	Development Management Process in SDCC As above Environmental Services Dept. SDCC Annual Waste Arisings Report from Environmental Services Dept. SDCC
Cultural Heritage	To protect the archaeological heritage of Clonburris SDZ Planning Scheme with regard to entries to the Record of Monuments and Places - including Zones of Archaeological Potential - and the context of the above within the surrounding landscape where relevant.	Percentage of entries to the Record of Monuments and Places - including Zones of Archaeological Potential (and the context of the above within the surrounding landscape where relevant) - Number of archaeological surveys required as part of planning	Protect entries to the Record of Monuments and Places - including Zones of Archaeological Potential (and their context of the above within the surrounding landscape where relevant) Protect unknown archaeological resources on SDZ Lands.	SDCC Development Control

SEA Topic	Strategic Environmental Objectives	Indicator	Target	Data Source
		<i>applications</i>		
		<i>Conditions attached to permissions on archaeological monitoring during excavations.</i>		
	To preserve and protect the special interest and character of Clonburris SDZ Planning Scheme architectural heritage with regard to entries to the Record of Protected Structures, and their context within the surrounding landscape where relevant.	Percentage of entries to the Record of Protected Structures (and/or their context within the surrounding landscape where relevant) protected. Number of architectural condition surveys attached to planning applications.	Protect entries to the Record of Protected Structures (and/or their context within the surrounding landscape where relevant) Renovate and reuse architectural heritage structures and features	SDCC
Landscape	To protect and avoid significant adverse impacts on the landscape, landscape features and designated scenic routes; especially with regard to areas of high amenity and the Grand Canal	The creation of a sense of place and coherence/appreciation for the overall setting and context of SDZ Planning Scheme. The preparation and implementation of the Landscape Strategy in Phase 1.	Creation of sense of place with all phases of development associated with SDZ Planning Scheme.	SDCC

SEA Topic	Strategic Environmental Objectives	Indicator	Target	Data Source
		Number of development applications with landscape and habitat plans and Design Statements.		
		Amount of land allocated to temporary greening measures.		
Climate Change and energy	<i>To integrate climate change adaptation to the Clonburris SDZ Planning Scheme</i>	<i>Number of SUDs measures included and developed as part of SDZ Planning Scheme.</i>	<i>Integrated blue and green infrastructure through the SDZ Planning Scheme.</i>	SDCC
		<i>Number/extent of additional tree planting as part of applications.</i>		
	<i>To enhance energy efficiency through the Energy Masterplan</i>	<i>Number of buildings built to Nearly Zero Energy Standards</i>	<i>Highest energy efficiency associated with SDZ Planning Scheme.</i>	
		<i>Provision of local heat network</i>		
Green Infrastructure	<i>To support green infrastructure measures through the Planning Scheme where possible.</i>	<i>Preparation and implementation of Landscape Strategy in Phase 1</i> <i>Extent of new/replacement hedge and tree planting per development.</i>	<i>Integration of blue and green infrastructure measures throughout SDZ Planning Scheme.</i>	SDCC
		<i>Number of Blue infrastructure</i>		

SEA Topic	Strategic Environmental Objectives	Indicator	Target	Data Source
<i>features included in development.</i>				

9.3 Conclusion

This SEA Environmental Report demonstrates how environmental parameters have been addressed in the plan preparation process. Consultation has been undertaken for the Scoping of this Environmental Report and further opportunity to comment on the Draft Planning Scheme will be possible over the forthcoming weeks.

The preparation of a specific Environmental Management Plan to accompany the SDZ Planning Scheme is the key output of the SEA process and has been developed and refined through the SEA and associated environmental assessment processes to date.

The SEA has been undertaken in line with the Planning and Development (Strategic Environmental Assessment) Regulations 2004 to 2011 (as amended). The SDZ Planning Scheme was prepared in line with Article 6(3) of the EC Habitats Directive and the accompanying Appropriate Assessment Screening Report should be read in conjunction with this SEA ER and the Planning Scheme. Subject to the full and proper implementation of the mitigation measures outlined in this SEA Environmental Report and the SDZ Planning Scheme including detailed design at planning application stage, it is considered that significant adverse impacts on the environment will be avoided.

Appendix A Review of Plans, Policies and Programmes

Table A1: International Plans, Policies and Programmes

Title	Summary
Sustainable Development	
EU Environmental Action Programme to 2020	<p>The 7th EU Environmental Action Programme is more strategic in nature and identifies three main areas to guide EU environmental policy and research. The three thematic priority objectives are intended to:</p> <ul style="list-style-type: none"> • Protect nature and strengthen ecological resilience • Boost sustainable resource-efficient low-carbon growth, and • Effectively address environment-related threats to health.
Environmental Assessment	
SEA Directive - Assessment of the effects of certain plans and programmes on the Environment, (2001/42/EC) 2001	This Directive requires plan-makers to carry out an assessment of the likely significant environmental effects of implementing a plan or programme before the plan or programme is adopted.
Environmental Impact Assessment Directive (85/337/EEC).	The EIA Directive (85/337/EEC) came into force in 1985 and applies to a wide range of defined public and private projects, which are defined in Annexes I and II of the Directive. This has been amended with Directive 2011/92/EU and the 2014 Directive (see below).
Environmental Impact Assessment Directive (2014/52/EC)	It is necessary to amend Directive 2011/92/EU in order to strengthen the quality of the environmental impact assessment procedure, align that procedure with the principles of smart regulation and enhance coherence and synergies with other Union legislation and policies, as well as strategies and policies developed by Member States in areas of national competence. The Directive will apply for all EIS from 2017 but should be considered when preparing EIS currently.
Biodiversity, Flora and Fauna	
UN Convention of Biological Diversity, 1992	<p>The Convention on Biological Diversity (CBD) entered into force in December 1993. It has 3 main objectives:</p> <ol style="list-style-type: none"> 1. The conservation of biological diversity. 2. The sustainable use of the components of biological diversity. 3. The fair and equitable sharing of the benefits arising out of the utilisation of genetic resources.
The Convention on Wetlands of International	Protection and conservation of wetlands and habitats of importance to waterfowl

Title	Summary
Importance (The Ramsar Convention) 1971 and subsequent amendments	
EU Biodiversity Strategy to 2020	<p>In 2011 the European Commission adopted a new strategy to halt the loss of biodiversity and ecosystem services in the EU by 2020. There are six main targets, and 20 actions to help Europe reach its goal. The six targets cover:</p> <ul style="list-style-type: none"> · Full implementation of EU nature legislation to protect biodiversity. · Better protection for ecosystems, and more use of green infrastructure. · More sustainable agriculture and forestry. · Better management of fish stocks. · Tighter controls on invasive alien species. <p>A bigger EU contribution to averting global biodiversity loss.</p>
EU Directive on the Conservation of Wild Birds, (2009/147/EC) 1979. Known as the Birds Directive	<p>This Directive ensures far-reaching protection for all of Europe's wild birds, identifying 194 species and sub-species among them as particularly threatened and in need of special conservation measures. Member States are required to designate Special Protection Areas (SPAs) for 194 particularly threatened species and all migratory bird species. SPAs are scientifically identified areas critical for the survival of the targeted species, such as wetlands. They are part of the Natura 2000 ecological network established under the Habitats Directive 92/43/EEC.</p>
EU Directive on the Conservation of Natural Habitats and of Wild Flora and Fauna, (92/43/EEC), 1992 known as the Habitats Directive	<p>The main goal of the Directive is to promote the maintenance of biodiversity by requiring Member States to take measures to maintain, protect or restore natural habitats, animal and plant species to a favourable conservation status, introducing robust protection for those habitats and species of European importance. For Ireland, these habitats include raised bogs, active blanket bogs, turloughs, sand dunes, machair (flat sandy plains on the north and west coasts), heaths, lakes, rivers, woodlands, estuaries and sea inlets. The Directive provides for a network of protected sites known as The Natura 2000 network, which limits the extent and nature of development which may have a detrimental effect on the flora or fauna identified therein.</p>
European Communities (Birds and Natural Habitats) Regulations 2011	<p>These regulations consolidate the European Communities (Natural Habitats) Regulations 1997 to 2005 and the European Communities (Birds and Natural Habitats)(Control of Recreational Activities) Regulations 2010, as well as addressing transposition failures identified in the CJEU judgements. Articles 6(1) and (2) of the Regulations require Member States to take appropriate conservation measures to maintain and restore habitats and species, for which a site has been designated, to a favourable conservation status. Furthermore the Regulations require Member States to avoid</p>

Title	Summary
	damaging activities that could significantly disturb these species or deteriorate the habitats of the protected species or habitat types. Under these regulations any plan or project likely to have a significant effect on a Natura 2000 site, either individually or in combination with other plans or projects, shall undergo an Appropriate Assessment to determine its implications for the site. The competent authorities can only agree to the plan or project after having ascertained that it will not adversely affect the integrity of the site concerned. In exceptional circumstances, a plan or project may still be allowed to go ahead, in spite of a negative assessment, provided there are no alternative solutions and the plan or project is considered to be of overriding public interest.
Green Infrastructure Strategy 2013	The European Commission in May 2013 adopted a Green Infrastructure Strategy, ' <i>to promote the deployment of green infrastructure in the EU in urban and rural areas</i> '. This is a key step in implementing the EU 2020 Biodiversity Strategy and specifically Target 2 that requires that 'by 2020, ecosystems and their services are maintained and enhanced by establishing green infrastructure and restoring at least 15% of degraded ecosystems'. Green Infrastructure (GI) is contributing to all other targets of the EU Biodiversity strategy – in particular the full implementation of the Birds and Habitats Directive (target 1) – and to maintain and enhance biodiversity in the wider countryside and the marine environment (targets 3 and 4).
Population and Human Health	
The Stockholm Convention 2001	The Stockholm Convention on Persistent Organic Pollutants is a global treaty to protect human health and the environment from chemicals that remain intact in the environment for long periods, become widely distributed geographically, accumulate in the fatty tissue of humans and wildlife, and have adverse effects to human health or to the environment. It entered into force in 2004.
Several environmental parameters interact and impact on human health including water quality, infrastructure, air quality, soil, cultural heritage and landscape; the plans, policies and programmes associated with these are presented under thematic headings as appropriate.	
Geology and Soil	
EU Soil Thematic Strategy	In September 2006, the European Commission published the final Thematic Strategy for Soil Protection (COM(2006)231 final) and a proposal for a Directive establishing a framework for the protection of soil across the EU (COM (2006) 232). The objective of the strategy is to protect and ensure the sustainable use of soil, based on the guiding principles of preserving soil functions, preventing further degradation and restoring degraded soils to a level of functionality consistent with current and intended use. Once

Title	Summary
	adopted the European Soil Thematic Strategy will guide and frame Ireland's approach to developing its own soil protection strategy.
Water Resources	
Water Framework Directive (2000/60/EC) as amended	<p>The Water Framework Directive (WFD) was adopted in 2000 in an effort to establish a framework for the protection of waterbodies within the EU including:</p> <ul style="list-style-type: none"> inland surface waters; groundwater; transitional waters; and coastal waters. <p>The key aims of the WFD are:</p> <ul style="list-style-type: none"> expanding the scope of water protection to all waters, surface waters and groundwater; achieving "good status" for all waters by a set deadline water management based on river basins; "combined approach" of emission limit values and quality standards. getting the prices right; getting the citizen involved more closely, and streamlining legislation. <p>Its ultimate objective is to achieve "good ecological and chemical status" for all Community waters by 2015.</p>
Floods Directive (2007/60/EC)	The Directive aims to establish a common framework for assessing and reducing the risk that floods within the European Union pose to human health, the environment, property and economic activity.
The Drinking Water Directive (DWD), (98/83/EC) 1998	This Directive is intended to protect human health by laying down healthiness and purity requirements which must be met by drinking water within the Community.
Groundwater Directive, (2006/118/EC) 2006	This directive establishes a regime which sets underground water quality standards and introduces measures to prevent or limit inputs of pollutants into groundwater.
EC Bathing Water Quality Directive, (2006/7/EC) 2006	This Directive strengthens the rules guaranteeing bathing water quality It supplements Directive 2000/60/EC on water protection and management. Each year, the Member States are required to identify the bathing waters in their territory and define the length of the bathing season. They shall establish monitoring at the location most used by bathers or where the risk of pollution is greatest.
Climate and Air Quality	
Kyoto Protocol	The Protocol was initially adopted on 11 December 1997 in Kyoto, Japan, and entered into force on 16 February 2005. To date 191 states have signed and ratified the protocol. Following the Conference of Parties to the Climate Change Convention (COP) meeting in Copenhagen 2009, the EU revised its

Title	Summary
	commitment to reducing greenhouse gases by increasing the target to 20% reduction on 1990 levels by 2020. It is an international agreement linked to the United Nations Framework Convention on Climate Change.
The Ambient Air Quality and Cleaner Air for Europe (CAFE) Directive	The EU objective in relation to air quality is 'to achieve levels of air quality that do not result in unacceptable impacts on, and risks to, human health and the environment'.
Material Assets	
EU Directive on Waste, (2006/12/EC), 2006	This Directive requires EU States to publish waste management plans. It requires a system of permits and registrations to be put in place to authorise all waste management infrastructure, as well as setting down the basic requirements that need to be satisfied for these statutory authorisations to be issued.
EU Directive on Waste (2008/98/EC), 2008	This Directive establishes a legal framework for the treatment of waste within the Community. It aims at protecting the environment and human health through the prevention of the harmful effects of waste generation and waste management. The Directive requires Member States to take measures for the treatment of their waste in line with the following hierarchy which is listed in order of priority:· prevention;· preparing for reuse;· recycling;· other recovery, notably energy recovery;· disposal.
EU Urban Waste Water Treatment Directive (91/271/EEC), 1991	The aim of the Urban Waste Water Directive is to protect inland surface waters from the adverse effects of discharges of urban wastewater and discharge of certain biodegradable industrial waste water (particularly from the agro-food industry).
Directive 2009/28/EC on the promotion of the use of energy from renewable sources	Directive 2009/28/EC on the promotion of the use of energy from renewable sources establishes the basis for the achievement of the EU's 20% renewable energy target by 2020. Under the terms of the Directive, each Member State is set an individually binding renewable energy target, which will contribute to the achievement of the overall EU goal. Each Member State is required to adopt a national renewable energy action plan.
Cultural Heritage Archaeology and Built Heritage	
European Convention on the Protection of the Archaeological Heritage, 1992 (The Valletta Convention)	This Convention was ratified by Ireland in 1997 and as such the Planning Authority is legally bound by it. The aim of the Convention is to 'protect the archaeological heritage as a source of the European collective memory and as an instrument for historical and scientific study'. It requires that appropriate consideration be given to archaeological issues at all stages of the planning and development process.
Convention for the Protection of the Architectural Heritage of	Ratified by Ireland in 1997, the 1985 Convention for the Protection of the Architectural Heritage of Europe is intended to reinforce and promote policies for the conservation and enhancement of Europe's heritage. The

Title	Summary
Europe, 1985 (Granada Convention)	Convention is dual purpose, involving the promotion of architectural heritage policies while fostering European-wide co-operation measures. Covering monuments, groups of buildings and sites of importance, the Convention requires a national inventory of architectural heritage to be developed. Legal protection measures must be established, with a system of formal authorisation required for works affecting protected sites and structures. Architectural heritage conservation considerations are required to feature in the Convention signatories' town and Regional planning processes.
Landscape	
The European Landscape Convention 2000	The 2000 European Landscape Convention, adopted in Florence (and was ratified by Ireland in 2002), requires a commitment to introduce policies on landscape protection and management. It promotes the protection, management and planning of EU landscapes as a response to European-wide concerns that the quality and diversity of landscapes were deteriorating. The underlying purpose of the Convention is to encourage public authorities to adopt policies and measures at local, Regional, National and International level to protect and manage landscapes throughout Europe.
Other relevant conventions, plans, policies and programmes	
The Aarhus Convention	The Aarhus Convention establishes a number of rights of the public (individuals and their associations) with regard to the environment. The Parties to the Convention are required to make the necessary provisions so that public authorities (at national, regional or local level) will contribute to these rights to become effective.
Environmental Liability Directive 2004/35/EC	<p>The overall objective of the Directive and the Regulations is to prevent and remedy environmental damage by holding operators whose activities have caused environmental damage financially liable for remedying the damage. The Environmental Liability Regulations 2008 define environmental damage under three categories:</p> <p>Damage to natural habitats and protected species - any damage that has significant adverse effects on reaching or maintaining the favourable conservation status of European designated habitats or species (i.e. those covered by the Habitats Directive (92/43/EEC) and Birds Directive (79/409/EEC)).</p> <p>Water damage - damage which significantly adversely affects the ecological, chemical and/or quantitative status and/or ecological potential of waters covered in the Water Framework Directive (2000/60/EC).</p> <p>Land damage - any contamination that creates a significant risk of human health being adversely affected as a result of the direct or indirect introduction in or under the land of substances, preparations, organisms or</p>

Title	Summary
	micro-organisms.

Table A2: National Plans, Policies and Programmes

Title	Summary
Sustainable Development	
Our Sustainable Future A framework for sustainable development in Ireland	Our Sustainable Future timeframe is to 2020 to tie in with other national and international frameworks, but a longer-term horizon to 2050 is also taken where appropriate, to provide a framework for guiding and reporting on long-term broad development trends such as on climate change.
The National Spatial Strategy 2002 -2020	The National Spatial Strategy (NSS) 2002-2020 is the national strategic planning framework to achieve a better balance of social, economic and physical development across Ireland, supported by more effective planning. It recognises that regions of the country have different roles and seeks to organise and coordinate these roles in a complementary way making all regions more competitive according to their strengths. It seeks also to promote a high quality urban environment, as well as vibrant rural areas. A review of same was announced in 2012 but the current NSS remains in place for now.
Biodiversity, Flora and Fauna	
Actions for Biodiversity 2011 – 2016, Ireland’s 2nd National Biodiversity Plan	The National Biodiversity Plan is intended to play a central part in Ireland’s efforts to halt biodiversity loss and was developed as in line with the EU and International Biodiversity strategies and policies. It sets out the strategic objectives of the government in relation to biodiversity
The Wildlife Acts 1976 to 2012	The Wildlife Acts are Ireland’s primary national legislation for the protection of wildlife. It covers a broad range of issues, from the designation of nature reserves, the protection of species, regulation of hunting and controls in wildlife trading. It is implemented by a series of regulations. These Acts provides strict protection for nearly all birds, 22 other animal species, and 86 plant species. These species are protected from injury, or from disturbance / damage to their breeding or resting place wherever these occur.
National Heritage Plan (2002)	The Department of Arts Heritage Gaeltacht and the Islands published the National Heritage Plan in April 2002. The plan sets out a vision for the management of the heritage of Ireland. A key element of the process of formulating the National Heritage Plan is the requirement to prepare Local Heritage Plans at County and City level.
Population and Human Health	
Guidelines for Planning Authorities on Sustainable Residential Development	The aim of these guidelines is to set out the key planning principles which should be reflected in development plans and local area plans, and which should guide the preparation and assessment of planning applications for

Title	Summary
in Urban Areas (Cities, Towns & Villages) (2009)	residential development in urban areas.
Geology and Soil	
Geological Heritage Sites Designation (under the Wildlife Amendment Act 2000)	The Wildlife (Amendment) Act 2000 provides for designation of Natural Heritage Areas (NHAs) which will include geological sites. Until actually designated, there is no real protection for any important sites identified by GSI and recommended for NHA status. However, a number of geological features are protected because they are the underlying reason for a biological or ecological site protected as a National Nature Reserve, National Park or as a Special Area of Conservation (SAC). In addition many local authorities have scheduled County Geological Sites within their County Development Plans.
Water Resources	
Water Services Act (2007)	The Act sets down a comprehensive modern legislative code governing functions, standards, obligations and practice in relation to the planning, management, and delivery of water supply and waste water collection and treatment services. The Act focuses on management of water "in the pipe", as distinct from broader water resources issues such as river water quality, etc.
Water Services (Amendment) Act (2012)	The 2012 Act amends the 2007 Water Services Act in order to comply with a European Court of Justice ruling against Ireland in October 2009. The Court found that Ireland had failed to fulfil its obligations under the Waste Directive (75/442/EEC) regarding domestic waste waters disposed of through septic tanks and other individual waste water treatment systems. The new Part 4A requires each water services authority to establish and maintain a register of domestic waste water treatment systems situated within their functional area.
Irish Water Services Strategic Plan SEA and AA 2015	The 25 year plan for strategic delivery of water services was subject to full SEA and AA and was adopted in 2015. Six key themes are addressed in this plan: Customer service Clean safe drinking water Effective management of wastewater Protect and enhance the environment Supporting social and economic growth Investing in our future
The Planning System and Flood Risk Management Guidelines (and Technical Appendices) for Planning	In relation to planning at the County level the guidelines require planning authorities to: <ul style="list-style-type: none"> • Introduce flood risk assessment as an integral and leading element of their development planning functions at the earliest practicable

Title	Summary
Authorities (DoEHLG, OPW), 2009	<p>opportunity.</p> <ul style="list-style-type: none"> Align strategic flood risk assessment (SFRA) with the SEA process. Establish flood risk assessment requirements as part of the preparation of the County Development Plan. Assess planning applications against the guidance set out in the Guidelines. Ensure development is not permitted in areas of flood risk except where there are no suitable alternative sites.
Climate and Air Quality	
National Climate Change Strategy (2007-2012)	The National Climate Change Strategy 2007 - 2012 sets out a range of measures, building on those already in place under the first National Climate Change Strategy (2000) to ensure Ireland reaches its target under the Kyoto Protocol. The Strategy provides a framework for action to reduce Ireland's greenhouse gas emissions
Climate Action and Low Carbon Act 2015.	<p>The act provides for the making of:</p> <ul style="list-style-type: none"> five-yearly National Mitigation Plans to specify the policy measures to reduce greenhouse gas emissions a National Adaptation Framework to specify the national strategy for the application of adaptation measures in different sectors and by local authorities to reduce the vulnerability of the State to the negative effects of climate change. <p>The Act also establishes the Climate Change Advisory Council to advise ministers and the government on climate change matters.</p>
The National Mitigation Plan	The National Mitigation Plan, the primary objective of which will be to track implementation of measures already underway and identify additional measures in the longer term to reduce greenhouse gas emissions and progress the overall national low carbon transition agenda to 2050. The first iteration will focus on measures upto 2020 and thereafter to 2015. The Plan will incorporate sectoral mitigation measures to reduce greenhouse gases, to be adopted by relevant Ministers with responsibility for key sectors, including agriculture, transport, energy and the built environment.
Sectoral Climate Adaptation Plans (in preparation)	
National Climate Change Adaptation Framework (2012).	Ireland's first National Climate Change Adaptation Framework (NCCAF) , which was published in December 2012, aims to ensure that adaptation actions are taken across key sectors and also at local level to reduce Ireland's vulnerability to climate change.
Material Assets	
Smarter Travel, A Sustainable Transport Future, A New Transport	Smarter Travel is the transport policy for Ireland that sets out how the vision of a sustainable travel and transport system can be achieved.

Title	Summary
Policy for Ireland 2009-2020	
Irish Water Services Strategic Plan SEA and AA 2015	The Water Services Strategic Plan (WSSP) sets out the strategies to implement as a country in the short, medium and longer term to ensure the availability of safe drinking water, an environment that is protected from the impacts of wastewater discharges, and efficient modern systems that meet the needs of customers, contribute to economic growth and development, and provide value for money. The document addresses six key themes of customer service, clean safe drinking water, effective treatment of wastewater, a sustainable environment, supporting economic growth and investing for the future. The plan was subject to SEA and AA.
Irish Water Capital Investment Programme 2014	Irish Water priorities for delivery under the Capital Investment Plan include; <ol style="list-style-type: none"> 1. Eliminating Boil Water Notices in Roscommon 2. Providing more water and in particular reducing disruption to supply in the Dublin area 3. Improving Water Quality 4. Investing for economic development 5. Tackling leakage 6. Increasing wastewater treatment capacity and improving environmental compliance 7. Better Control and Monitoring 8. Improving existing plants Associated with this is the proposed upgrade to the Ringsend WTP that has been subject to EIS and NIS and aims to be submitted to An Bord Pleanála end 2016.
Cultural Heritage Archaeology and Built Heritage	
National Monuments Act 1930 with subsequent amendments	This is the primary legal protection to archaeology in Ireland and has been amended a number of times, most recently 2004.
Architectural Heritage Protection - Guidelines for Planning Authorities (2011)	The 2004 guidelines were reissued in 2011 following the transfer of architectural heritage protection functions to the Department of Arts, Heritage and the Gaeltacht. Part IV of the Planning and Development Acts 2000 – 2015 sets out the legislative provisions for the protection and conservation of our architectural heritage
National Inventory of Architectural Heritage (NIAH)	The National Inventory of Architectural Heritage (NIAH) is a state initiative under the administration of the Department of Arts, Heritage and the Gaeltacht. The purpose of the NIAH is to identify, record, and evaluate the post-1700 architectural heritage of Ireland, uniformly and consistently as an aid in the protection and conservation of the built heritage. NIAH surveys

Title	Summary
	provide the basis for the recommendations of the Minister to the planning authorities for the inclusion of particular structures in their Record of Protected Structures (RPS).
Waterways Ireland Heritage Plan 2014-2020	This plan provides, for the first time, a strategic framework for the integration of built, natural and cultural heritage into the future management of waterways that include the Grand and Royal Canals. The plan addresses natural and cultural heritage.
Landscape	
A National Landscape Strategy for Ireland –2015	The Department of Arts, Heritage and the Gaeltacht has issued a National Landscape Strategy for Ireland which sets out objectives and principles in the context of a proposed National Landscape Strategy for Ireland.
Draft Landscape and Landscape Assessment Guidelines, (2000)	These Guidelines attempt to approach landscape appraisal in a systematic manner and recommend Landscape Character Assessment (LCA) as the method for assessment. LCA involves the characterisation of landscape based primarily on landcover (trees, vegetation, water etc.) and secondly on the value (i.e. historical, cultural, etc.). LCA is intended to aid the development management process as it gives indicators of development types which would be suited to certain locations using certain design criteria and consequently the character of the landscape remains intact
<p>Planning and Development Act 2000 (as amended).</p> <p>This Act consolidated all planning legislation from 1963 to 1999 and remains the basis for the Irish planning code, setting out the detail of regional planning guidelines, development plans and local area plans as well as the basic framework of the development management and consent system. Among other things, it provides the statutory basis for protecting our natural and architectural heritage, the carrying out of Environmental Impact Statements and the provision of social and affordable housing. There have been a number of changes to the legislation since 2000, the most significant of which are set out in The Planning and Development (Amendment) Act 2002 and the Housing (Miscellaneous Provisions) Act 2004, which made substantial changes to Part V of the Act.</p> <p>The Act was amended further with the Planning and Development (Amendment) Act 2015. Section 2 amends section 28 of the Planning and Development Act, 2000, relating to the issuing of Ministerial planning guidelines to planning authorities. Section 28 provides that planning authorities shall have regard to Ministerial guidelines in the performance of their planning functions, such as in the adoption of development plans and the determination of planning applications. The amendment introduces a new power whereby the Minister may, within the Section 28 guidelines, expressly state specific planning policy requirements to be applied by planning authorities, or An Bord Pleanála, as appropriate, in the exercise of their planning functions. Therefore, the content of guidelines will distinguish between advisory or general commentary, on the one hand, and specific requirements that must be mandatorily applied by planning authorities.</p> <p>Planning and Development (Housing) and Residential Tenancies Act 2016 facilitates the implementation of</p>	

Title	Summary
	<p>'Rebuilding Ireland - Action Plan on Housing and Homelessness' (2016) which is designed to accelerate housing supply in this country, Rebuilding Ireland is tackling our country's housing shortage. A key element of the Rebuilding Ireland is the identification of Major Urban Housing Development Sites with the potential to deliver up to 30,000 additional homes, in key locations on existing zoned lands and close to the key areas of demand over the next 3-4 years with even more potential for another 30,000 homes on those lands or a total of 60,000 homes in the long term. Clonburris is an identified Major Urban Housing Development Site, reflecting the national importance of the SDZ lands.</p> <p>In addition, a suite of new planning policies are being prepared most notably the National Planning Framework due to be finalised in 2017 which will replace the National Spatial Strategy. Prior to this a non-statutory Planning Policy Statement was issued in 2015 establishing then key principles including the following:</p> <ul style="list-style-type: none"> - No. 8. Planning will conserve and enhance the rich qualities of natural and cultural heritage of Ireland – - No. 9. Planning will support the protection and enhancement of environmental quality.

Table A3: Regional and County Plans, Policies and Programmes

Title	Summary
Regional Planning Guidelines 2010-2020- to be replaced by Regional Economic and Spatial Strategies	<p>The aim of the Regional Planning Guidelines (RPGs) is to provide a framework for long term strategic development of the Greater Dublin Region for the period 2010 – 2022 which is consistent with the National Spatial Strategy (NSS) 2002 – 2020 and which ensures the successful implementation of the NSS at regional, county and local level.</p> <p>A key aspect of the RPGs is integrating sustainable economic development with the protection and enhancement of the environment. The RPGs are influenced by a wide range of international, national and regional level plans, programmes and legislation and also establish a framework for other lower level plans and programmes.</p> <p>Regional Planning Guidelines and Economic and Spatial Strategies Prior to the establishment of the Eastern and Midland Regional Assembly on 1st January 2015, the three previous Regional Authorities within Eastern and Midland Region produced individual Regional Planning Guidelines (RPG's).</p> <p>These planning guidelines set out a strategic planning framework for their respective three areas and will remain in force until at least 2016.</p> <p>The implementation of the RPGs are an integral part of the Government's programme to enable Ireland's planning system to play an important role in</p>

	<p>the national economic recovery by delivering a plan-led planning system where spatial plans are aligned to benefit the economy, environment and provide for an improved quality of life.</p> <p>This process has sought to prioritise future infrastructural investment at a regional and local level, whilst promoting the growth of designated settlements.</p> <p>It is proposed that the (RPG's) will be replaced by a Regional Spatial & Economic Strategy for the region.</p> <p>"The objective of regional spatial and economic strategies shall be to support the implementation of the National Spatial Strategy and the economic policies and objectives of the Government by providing a long-term strategic planning and economic framework for the development of the region for which the strategies are prepared which shall be consistent with the National Spatial Strategy and the economic policies or objectives of the Government." (sec23 Planning and Development Act 2000)</p>
<p>Eastern River Basin District Management Plan (2010)</p> <p>Second cycle of RBDMPs currently in preparation.</p>	<p>The key objectives of the Water Framework Directive for the Eastern River Basin District (IRBD) are aimed at:</p> <ul style="list-style-type: none"> • maintaining "high status" of waters where it exists; • preventing any deterioration in the existing status of waters and; • achieving at least "good status" in relation to all waters by 2015. <p>The Management Plan presents a series of measures to achieve these. The second cycle of these plans (2015 to 2021) are currently in preparation and will provide management measures to achieve WFD Objectives upto 2021. For the 2nd Cycle, the Eastern, South Eastern, South Western, Western and Shannon River Basin Districts will be merged to form one national River Basin District.</p>
<p>Eastern Catchment and Flood Risk Assessment and Management Plan (draft)</p>	<p>The Eastern CFRAM study has been commissioned in order to meet the requirements of the Floods Directive, as well as to deliver on core components of the 2004 National Flood Policy, in the Eastern district.</p> <p>With a land area of approximately 6,300 km², the Eastern district accounts for one tenth of the land area of Ireland. It is home to rich agricultural land, holiday coastline, the city of Dublin and the towns which form the Greater Dublin Area and its commuter belt. Around 1.6 million people, 40% of Ireland's population, live in the Eastern district with the majority living in the Greater Dublin Area.</p> <p>The main aims of the Eastern CFRAM Study are to:</p>

	<ul style="list-style-type: none"> • assess flood risk, through the identification of flood hazard areas and the associated impacts of flooding; • identify viable structural and non-structural measures and options for managing the flood risks for localised high-risk areas and within the catchment as a whole; • prepare a strategic Flood Risk Management Plan (FRMP) and associated Strategic Environmental Assessment (SEA) that sets out the measures and policies that should be pursued to achieve the most cost effective and sustainable management of flood risk; • ensure that full and thorough public and stakeholder consultation and engagement is achieved.
Eastern-Midlands Regional Waste Management Plan 2015	<p>WMP sets out three specific and measureable performance targets as follows:</p> <ul style="list-style-type: none"> • Achieve a recycling rate of 50% of managed municipal waste by 2020 • Reduce to 0% the direct disposal of unprocessed residential municipal waste to landfill (from 2016 onwards) in favour of higher value pre-treatment processes and indigenous recovery practices. • 1% reduction per annum in the quantity of household waste generated per capita over the period of the plan.
National Transport Authority Greater Dublin Area Transport Strategy 2016-2035	<p>The Transport Strategy for the Greater Dublin Area, 2016-2035 has been prepared and published by the National Transport Authority in accordance with Section 12 of the Dublin Transport Authority Act, 2008. It sets out how transport will be developed across the region, covering Dublin, Meath, Wicklow and Kildare, over the period of the strategy and was subject to SEA and AA.</p>
South Dublin County Development Plan 2016-2022	<p>This plan sets out on a statutory basis the development framework for South Dublin County. The main sections relate to core strategy, housing, community infrastructure, economic development, urban centres and retailing, transport and mobility, infrastructure and environmental quality, green infrastructure, heritage, conservation and landscapes, energy and implementation.</p>
South Dublin Local Economic and Community Plan 2016	<p>The socio-economic framework centres around 6 key themes and goals which underpin the LECF. These themes and goals contribute to realising the overall vision. They include</p> <ul style="list-style-type: none"> Infrastructure, Enterprise and Employment Health and Well being Environment Poverty and Inclusion Education and Training Citizenship and Participation
South Dublin Heritage	<p>South Dublin County Council intends to review and update the current County</p>

Plan 2010-2015

Heritage Plan 2010-2015.

In tandem with this review, SDCC is also in the process of preparing the County's first Biodiversity Action Plan.

A joint consultation process took place in April 2016 and two plans will be forthcoming: an Updated County Heritage Plan 2016-2022 and the first County Biodiversity Plan 2016-2022.

Annex B: Detailed Assessment of chapters of SDZ Planning Scheme

Additional text recommended through the SEA process is presented in **bold green font**.

No likely interaction with /insignificant impact with SEOs	0	Potential conflict with SEOs – likely to be mitigated	↕
Likely to improve status of SEOs	↑		
Probable conflict with SEOs – unlikely to be mitigated	↓		

Chapter One: Introduction

Chapter One Introduction	BFF	PHH	W	SG	Ma	AQ	CA	L	CC	GI	Commentary/recommendation
Key Principles <ul style="list-style-type: none"> To avail of a unique opportunity to create a multi-faceted new community in South Dublin County, promoting best practice in place making and sustainable development, cognisant of the existing centres and communities of Adamstown, Lucan, Clondalkin and Liffey Valley; To realise the optimum development of the SDZ area with a target of 8,437 new homes offering a choice of dwelling types, sizes and tenure options; To set out a masterplan for the SDZ lands which addresses the delivery of new community facilities and supporting infrastructure and to outline how they will be delivered; 											

Chapter One Introduction	BFF	PHH	W	SG	Ma	AQ	CA	L	CC	GI	Commentary/recommendation
<ul style="list-style-type: none"> To develop the SDZ in a manner that maximises existing and proposed public transport opportunities, including high quality rail and bus services, and supports these opportunities with an integrated network of streets and routes with a clear hierarchy that promote walking and cycling; To direct land-uses and densities across the SDZ lands in a manner that creates a sustainable urban district that is based on the integration of land-use and transport planning; To ensure that development across the SDZ lands is carried out in a design led manner that prioritises place making, choice and growth and accords with the core principles of urban design and the creation of integrated streets; To develop vibrant mixed use centres around Clonburris and Kishoge railway stations as part of a hierarchy of urban centres to serve Clonburris; To support the provision of attractive retail floorspace at Clonburris and Kishoge Urban Centres to contribute to the creation of active mixed use centres; To support and facilitate growth of the local economy and promote the Planning Scheme as a location for employment; To facilitate the balanced provision of community facilities and services for the residents of Clonburris to promote health and wellbeing, social inclusion and quality of life; To maximise appropriate access to and use of the Grand Canal, Griffeen Valley Park and other biodiversity assets in an ecologically sensitive way, thereby offering unique selling points to the SDZ Planning Scheme; To deliver a network of high quality green and blue infrastructure spaces and public parks while protecting, enhancing and upgrading the natural and cultural assets of the Clonburris lands; To retain and enhance architectural heritage and archaeological heritage features, sites and structures within the SDZ lands by encouraging conservation and incorporation including adaptive re-use, where appropriate, within the built fabric and landscape of the SDZ Lands; To prioritise the delivery of high quality services, utilities infrastructure, and sustainable urban surface water drainage; To pioneer the development of energy networks at the Clonburris and Kishogue urban centres, and explore potential for other low carbon energy opportunities at Clonburris; To ensure that the phasing and implementation of the SDZ occurs at a pace whereby it is supported by all necessary supporting community facilities, services, infrastructure and amenities, in order to ensure that place making is prioritised; and To ensure that measures to support the sustainable development of the SDZ lands as detailed in the accompanying Strategic Environmental Assessment (SEA) Environmental Report, and associated environmental assessments are applied and adhered to in the Planning Scheme implementation. 											

Chapter One Introduction	BFF	PHH	W	SG	Ma	AQ	CA	L	CC	GI	Commentary/recommendation
	↕	↑	↑	↕	↑	↑	↑	↑	↑	↕↑	
<p>Generally these principles will generate positive effects in relation to the SEOs and the Draft Planning Scheme has been prepared having regard to the policies and objectives outlined within the South Dublin County Development Plan 2016-2022. Through the iterative process of preparation of the SDZ planning scheme, layout and design principles have been developed and particularly sensitive areas avoided for new homes.</p> <p>The planned coordination of high quality transport and integrated landuse planning reflects national policy and generates positive effects with several of the SEOs including long term direct positive effects on population and human health, transport, green infrastructure and landscape as well as adaption to climate change.</p> <p>These principles promote the two urban centres and reflect the preferred alternative scenario and supports high density close to existing railway infrastructure. It supports efficient use of land.</p> <p>The integration of blue and green infrastructure to the overall planning scheme creates positive effects with the SEOs across all environmental topics as it is underpinned by technical studies including the ecology surveys as well as the surface water strategy</p> <p>This principle gives rise to direct positive effects for material assets and population and human health SEOS. Indirect positive effects for water resources associated with the surface water drainage as well as indirect effects from utilities infrastructure and water services and quality.</p> <p>This approach to phasing allows a measured approach to the overall development and provision of infrastructure in a timely manner in particular gives rise to positive effects across a number of parameters.</p> <p>However, mitigation measures are recommended to ensure additional protection for biodiversity, and soil and water resources that reflect particular areas and sensitivities on the SDZ planning scheme lands. In particular, whilst enhancing access to these resources such as the Grand Canal may give rise to positive effects around population and human health, landscape and material asset SEOS, mitigation measures are recommended to protect the integrity of these areas and their continued function as ecological corridors and suitable habitats for protected species.</p> <p>Finally, an additional mitigation measure is recommended to commit to compliance with the SEA ER and associated environmental assessments.</p>											

Chapter One Introduction	BFF	PHH	W	SG	Ma	AQ	CA	L	CC	GI	Commentary/recommendation
Section 1.5 Policy Context: This approach ensures that the Scheme takes account of a hierarchy of plans and local level strategy, which when combined facilitate the following key objectives:- <ul style="list-style-type: none"> To align with Government policy including ‘Rebuilding Ireland – Action Plan for Housing and Homelessness’ (July 2016), to facilitate the expedient delivery of affordable new housing in the Dublin Region, catering for high quality design and a range of dwelling type, size and residential tenure; To facilitate the delivery of a Planning Scheme that supports the development of a new residential led community at Clonburris, together with accessible supporting community facilities and mixed use services, whilst maximising the potential of the sites strategic location and accessibility by public transport; To maximise the potential of the sites key natural, built heritage and biodiversity assets, whilst protecting and mitigating against adverse environmental and climate change impacts; To engage collaboratively with all stakeholders with an interest in Clonburris to ensure the highest quality outcome in the delivery of a new sustainable community in South Dublin County; and To set out how the policies and objectives of the South Dublin County Council Development Plan 2016-2022 and other local plans and strategies can be achieved with regard to the implementation of SDZs. 											
	↑	↑	↑	↑	↑	↑	↑	↑	↑	↑	Section 1.5 establishes and references key policies and plans including national and county development plan policies and objectives. The Planning and Development of Large-Scale, Rail Focused Residential Areas in Dublin report (NTA, 2013) identifies Clonburris as a strategic residential development area.

2.1 Landuse and Density

2.1 Landuse and Density	BFF	PHH	W	SG	Ma	AQ	CA	L	CC	GI	Commentary/recommendation	
	Overarching Principle To direct land-uses and densities across the SDZ lands in a manner that creates a sustainable urban district that is based on the integration of land-use and transport planning.											
		↕/↑	↑	↑	↑	/↑	/↑	/↑	↑	↑	↑	The overarching principle has been informed through a series of technical studies and iterative processes including the SEA; the principles will contribute to positive effects on some biodiversity SEOS, Air Quality, Landscape, Material Assets (flood risk, transport). Given the nature of the SDZ Planning scheme and considerable conversion from greenfield to built lands, potential effects arise across all parameters, however these are minimised through the integration of specific mitigation measures identified through the SEA and AA processes.
	The key guiding principles in relation to land use and residential density are as follows: <ul style="list-style-type: none">To co-ordinate residential, educational, employment and community uses and integrate such with transportation infrastructure in a											

2.1 Landuse and Density	BFF	PHH	W	SG	Ma	AQ	CA	L	CC	GI	Commentary/recommendation												
	<p>manner that maximises and makes efficient use of existing and planned public transport services and local facilities;</p> <ul style="list-style-type: none">• To promote increased residential densities within walking distance of public transport nodes and urban centres;• To promote a mix of uses around the public transport nodes in a manner than creates viable and active urban centres ;• To establish two mixed use development areas/urban centres around both public transport nodes and distribute local community, retail and employment uses amongst surrounding residential Development Areas in the form of local nodes together with parklands; and• To support the development of sustainable communities and to ensure that new residential development is carried out in accordance with Government policy in relation to the development of housing and residential communities, catering for a range of dwelling types, sizes and tenure options.																						
		⇅/↑	⇅/↑	⇅/↑	↑	↑	↑	↑	↑	↑	As above – SDZ Planning scheme has been prepared to maximise the linkages between public transport and landuse as well as integrated blue and green infrastructure through the masterplan.												
	<p>The overall area of the SDZ lands is 281 Hectares and the Gross Development Area (excluding strategic infrastructure such as the railway line, arterial streets and the canal) is 258 Hectares. The net development area of each of the 12 Development Areas within this Planning Scheme are set out in Table 2.1.4 and total 151 hectares below.</p> <p>Table 2.1.4 Development Areas</p> <table><tr><th>Development Area</th><th>Net Area (Ha.)</th></tr><tr><td>Adamstown Extension</td><td>9.19</td></tr><tr><td>Kishoge Urban Centre</td><td>10.94</td></tr><tr><td>Kishoge North West</td><td>11.16</td></tr><tr><td>Kishoge North East</td><td>14.36</td></tr><tr><td>Kishoge South West</td><td>21.55</td></tr></table>											Development Area	Net Area (Ha.)	Adamstown Extension	9.19	Kishoge Urban Centre	10.94	Kishoge North West	11.16	Kishoge North East	14.36	Kishoge South West	21.55
Development Area	Net Area (Ha.)																						
Adamstown Extension	9.19																						
Kishoge Urban Centre	10.94																						
Kishoge North West	11.16																						
Kishoge North East	14.36																						
Kishoge South West	21.55																						

2.1 Landuse and Density	BFF	PHH	W	SG	Ma	AQ	CA	L	CC	GI	Commentary/recommendation
			Kishoge South East				12.50				
			Clonburris Urban Centre				17.90				
			Clonburris North West				14.37				
			Clonburris North East				7.50				
			Clonburris South West				25.98				
			Clonburris South East				3.30				
			Canal Extension				71.32				
			Total				151.02				
	The minimum and maximum achievable number of residential units in Clonburris together with target dwelling numbers are set out in Table 2.1.5. Residential unit numbers are based off an allowable margin within a prescribed density target for each Development Area (see Section 2.1.5 – Residential Density). For clarity, the maximum achievable number of residential units incorporates flexibility for landmark buildings.										
	Table 2.1.5 Extent of Residential Development According to Development Area										
Development Area			Total Dwelling Units (number)								
			Min		Target		Max				
Adamstown Extension			396		442		488				
Kishoge Urban Centre			680		734		789				
Kishoge North West			510		566		621				
Kishoge North East			666		738		809				
Kishoge South West			951		1059		1167				
Kishoge South East			615		678		740				
Clonburris Urban Centre			1176		1265		1355				
Clonburris North West			711		783		854				
Clonburris North East			372		410		447				
Clonburris South West			1311		1441		1571				
Clonburris South East			184		201		217				
Canal Extension			110		121		133				
Total			7,682		8,437		9,192				

2.1 Landuse and Density	BFF		PHH	W	SG	Ma	AQ	CA	L	CC	GI	Commentary/recommendation
		↑	↑	↑	↑	↑	↑	↑	↑	↑	↑	
Comment:	The net development areas (Table 2.1.5) have been developed and informed through the iterative plan preparation process; in particular the consideration of appropriate set backs from water courses and the surface water strategy, as well as retention of the Barony hedgerow boundary and north south hedgerows where possible have influenced the masterplan design and net development areas subsequently.											
	The balance of environmental considerations in line with achieving the objectives of the Planning Scheme has been key considerations in the plan preparation process.											
	Given the nature of the SDZ Planning scheme and considerable conversion from greenfield to built lands, potential effects arise across all parameters, however these are minimised through the integration of specific mitigation measures identified through the SEA and AA processes. Therefore in line with achieving the Planning scheme objectives, positive effects across all parameters are identified given the existing mitigation measures identified in the Planning Scheme.											
Non Residential Floorspace												
This Planning Scheme seeks to ensure that non-residential floorspace is appropriately distributed across the SDZ lands in a manner that can integrate with residential development, create sustainable communities and also make efficient use of transport infrastructure and services.												
The two planned urban centres at Kishoge and Clonburris will be the key focal areas for employment, civic, community and retail uses within the SDZ lands with a series of local nodes providing the focus for community and small scale employment and retail uses within the surrounding Development Areas.												
Buildings in these mixed use areas should therefore be designed to accommodate flexibility in use (see Section 2.4 for details in relation to restriction on uses).												
Each of the two urban centres have been designated with a defined core retail area where retail floorspace will be concentrated. In terms of retail function, the Clonburris Retail Core will operate as a District Centre and the Kishoge Retail Core will operate as a Local Centre. To promote a balanced mix of uses and sustainable travel patterns, local nodes with small scale retail, community and employment functions are also identified at 4 sub sectors situated adjacent to planned parks and spaces.												
		↑	↑	↑	↑	↑	↑	↑	↑	↑	↑	Positive effects identified for

2.1 Landuse and Density	BFF	PHH	W	SG	Ma	AQ	CA	L	CC	GI	Commentary/recommendation
											Population and Human health and material assets in particular.
	The remainder of this section outlines Residential Densities and Residential Development Standards referencing relevant national guidance and policy including Guidelines for Planning Authorities on Sustainable Residential Development in Urban Areas (2009), the Regional Planning Guidelines for the Greater Dublin Area 2004-2016, the SDZ Order for Clonburris, The South Dublin County Council Traveller Accommodation Programme 2014-2018 and Social Housing under Part V of the Planning and Development Act. Project level compliance with the above will ensure consistency with the requirements of same and contribute to achieving the overall aims and principles of the SDZ Planning Scheme. Impacts are as above.										

2.2 Movement and Transport Strategy

2.2 Movement and Transport Strategy	BFF	PHH	W	SG	Ma	AQ	CA	L	CC	GI	Commentary/recommendation
	↕	↑	↕	↑	↑	↑	↕	↕	↑	↕	
Key Principles The key guiding principles of the Movement and Transportation Strategy are as follows: <ul style="list-style-type: none"> To link the Development Areas of Clonburris with each other and with surrounding communities through a permeable and clear hierarchy of integrated streets and dedicated pedestrian and cycle routes; To integrate appropriate pieces of infrastructure that overcome challenges to movement across the SDZ lands; To develop a transport framework that maximises route choice and access to residential, education, retail, service, community and leisure uses by means of walking, cycling and public transport while balancing the needs of the car; and To upgrade existing sections of strategic roads within the SDZ lands to integrated urban streets. 											
	↕	↑	↕	↕	↑	↑	O↕	O↕	↑	O↕	These principles generate positive direct effects on a number of SEOS including population and human health, material assets and air quality. Indirect positive effects are identified for climate change, soil and geology also. These principles provide a hierarchy of transport models with a focus on modal shifts and encouraging pedestrian and cycling accessibility. Positive impacts are identified as above and also where potential

2.2 Movement and Transport Strategy	BFF	PHH	W	SG	Ma	AQ	CA	L	CC	GI	Commentary/recommendation
											negative impacts are identified, mitigation measures shall apply. For example in relation to Biodiversity SEOs would be mitigated by the measures which have been integrated into the Scheme and are identified in Chapter 8 of this SEA ER.
Planning applications for residential, retail or employment development within the SDZ lands shall provide for and/or integrate with a choice of direct or indirect multi-modal routes to existing or planned public transport nodes. These developments shall therefore connect with and/or include pedestrian and cyclist routes, whether dedicated or street integrated, and vehicular routes to existing or planned public transport stops. Further to the requirements of Section 2.8.2 of this Planning Scheme, such connectivity should be communicated and demonstrated via a Design Statement.											
	⇅	↑	⇅	⇅	↑	↑	O⇅	O⇅	↑	O⇅	This measure further strengthens the support for non vehicular transport into the overall scheme and at project level.
<p>Cycling and walking shall be encouraged throughout the SDZ lands with the creation of a network of dedicated (through open spaces and green corridor's etc.) and street integrated pedestrian and cyclist routes. In accordance with the <i>Design Manual for Urban Roads and Streets</i> (DTTS & DECLG, 2013) (DMURS), and the street typologies illustrated in this Section, all streets within the SDZ lands shall be designed for pedestrian and cyclist movement. Streets will also connect with and be augmented by dedicated strategic pedestrian and cycle routes (see Section 2.3 – Green and Blue Infrastructure) that will permeate open spaces, parks, urban spaces and linear green spaces. This will ultimately create a linked network that maximises route choice for pedestrians and cyclists.</p> <p>Local pedestrian priority streets/routes shall also be provided in designated areas in and around the Kishoge and Clonburris Town Centres including high activity areas within retail cores, between urban spaces and between sectors located either side of Arterial Streets.</p>											

2.2 Movement and Transport Strategy	BFF	PHH	W	SG	Ma	AQ	CA	L	CC	GI	Commentary/recommendation
<p>All pedestrian and cycle routes shall be designed to be safe and accessible in accordance with DMURS and the National Cycle Manual (2011).</p> <p>This Planning Scheme is formulated to ensure that development within the SDZ lands will be afforded direct or indirect access to dedicated pedestrian and cycle routes (strategic and local), Link Streets and Arterial Streets (see Section 2.2.4 - Street Network and Vehicular Movement below). This Planning Scheme also seeks to ensure that all residential development will also be afforded direct or indirect access to dedicated pedestrian and cyclist routes to schools and local facilities especially parks, open spaces, public transport, retail and non-retail services.</p> <p>Further to the requirements of Section 2.8.2 of this Planning Scheme, such connectivity should be communicated and demonstrated via a Design Statement. There shall be no barriers to pedestrian or cyclist movement between residential developments. Barriers created by the canal and railway shall be overcome by overbridges detailed in Section 2.2.5- Bridges.</p>											
	↕	↑	↕	↕	↑	↑	O↕	O↕	↑	O↕	Promotion of pedestrian and cycling as well as requirements of a Design Statement regarding connectivity are all identified as creating positive effects on air quality, climate change (indirect local effect), material assets, population and human health and landscape.
<p>Arterial Streets</p> <p>With reference to DMURS, the main purpose of Arterial Streets is to connect major centres at a strategic level. Arterial Streets largely comprise major orbital and cross metropolitan routes such as the Grange Castle Road, Fonthill Road North, Adamstown Avenue and Thomas Omer Way, which traverse and bound the SDZ lands. These roads have therefore been designated as Arterial Streets under this Planning Scheme. No further Arterial Streets are proposed.</p>											

2.2 Movement and Transport Strategy	BFF	PHH	W	SG	Ma	AQ	CA	L	CC	GI	Commentary/recommendation
<p>In the interest of connectivity, place-making and the provision of safe and attractive routes for different modes of transport, it is proposed to upgrade the existing strategic roads as urban streets with reduced traffic speeds.</p> <p>To promote walking and cycling and create streets that are more attractive and urban in character, these streets should be upgraded and redefined through a combination of measures including signalised junctions, double planting, transition zones, on-street parking and frontage from development (see Section 2.8 – Built Form and Design Strategy for further details). Such streets will also continue to prioritise public transport and existing bus lanes will be retained and augmented.</p>											
	⇅	↑	⇅	⇅	↑	↑	O⇅	O⇅	↑	O⇅	The upgrading to urban streets and in line with DMURS generates positive effects particularly for biodiversity and green infrastructure depending on species selected for double planting; prioritising public transport and augmentation of bus lanes should give rise to long term positive effects in terms of modal shifts (material assets SEO), air quality, climate and population and human health.
<p>Link Streets</p> <p>The primary function of Link Streets is to stitch the SDZ lands together by connecting Arterial Streets, Urban Centres and Development Areas including local nodes and open spaces. Link Streets shall be designed to provide the main multi-modal spines for movement within the SDZ lands.</p> <p>Link Streets will therefore form a vital linking component between Arterial Streets and Local Streets and will be instrumental in creating a highly accessible</p>											

2.2 Movement and Transport Strategy	BFF	PHH	W	SG	Ma	AQ	CA	L	CC	GI	Commentary/recommendation
<p>and permeable street network.</p> <p>Link Streets will form the principle corridors for the movement of pedestrians, cyclists, public transport (local buses) and vehicles within and through the SDZ lands. In order to prevent the overuse of these movement corridors and to reduce traffic congestion, Link Streets shall be augmented with a choice of vehicular routes in each traffic cell via Local Streets (see below). Traffic speeds should be reduced along Link Streets accordingly in order to promote walking and cycling.</p> <p>Existing roads that are designated as Link Streets under this Planning Scheme (Lock Road, Griffeen Avenue and the Lucan-Newlands Road) shall be upgraded as traffic calmed streets. These upgraded streets will be augmented by a framework of new Link Streets that will traverse the SDZ lands in the form of east-west streets to the north and south of the rail line together with a connecting north-south Link Street.</p> <p>All Development Areas shall therefore be afforded direct and convenient vehicular, pedestrian and cyclist access to Link Streets.</p>											
	⇅	↑	⇅	⇅	↑	↑	O⇅	O⇅	↑	O⇅	As above
<p>Local Streets</p> <p>The purpose of Local Streets is to provide access within communities and to Arterial and Link Streets. Local Streets will act as quieter traffic calmed streets that are closely fronted and overlooked by development and will provide through access to neighbourhood blocks and local open spaces. These streets will ensure that all parts of the SDZ lands are accessible from a number of different directions.</p> <p>By virtue of their speed and function, Local Streets will be unlikely to carry high levels of vehicular traffic and a greater emphasis will be placed on pedestrian movement, activity and place making. The provision of public transport services on Local Streets should be avoided in order to ensure that their place function is not undermined. Existing streets designated as (part of Hayden's Lane and Lynch's Lane) shall be upgraded and improved accordingly. Some Local Streets will comprise Home Zones or Intimate Local Streets in the form of fully shared surfaces for the integrated movement of vehicles, pedestrians and cyclists in quieter residential areas. Further to Local Street that provides strategic pedestrian and cycle through</p>											

2.2 Movement and Transport Strategy	BFF	PHH	W	SG	Ma	AQ	CA	L	CC	GI	Commentary/recommendation
routes, junctions between Homezones and Link Streets should also be filtered to prioritise pedestrian and cyclist through access. Designated Pedestrian Priority Local Streets within the Clonburris and Kishoge Urban Centres shall also be designed to be fully pedestrianised outside of delivery hours (see Section 2.8 Built Form and Design).											
	⇅	↑	⇅	⇅	↑	↑	O⇅	O⇅	↑	O⇅	This measure further strengthens the support for non vehicular transport into the overall scheme and at project level.
2.2.5 Bridges <p>The barriers created by pre-existing strategic roads, the Grand Canal and the Kildare/Cork Railway Line form challenges to movement across the SDZ lands. Rather than being avoided or mitigated, these features will be integrated within the urban structure of Clonburris with important connections across them.</p> <p>A number of bridges are required to enable north-south movement across the Canal and Railway for different modes of movement. Further to the existing bridges that cross the canal and railway line, a total of five new bridges are proposed with the upgrade of an existing pedestrian and cycle bridge to a Green Bridge at Hayden's Lane. Such bridges shall be provided in accordance with the Phasing and Implementation Strategy detailed in Chapter 4.</p> <p>In addition to the requirements set out under Section 2.11 (Biodiversity and Natural Heritage), where new canal crossings i.e. footbridges/cycle bridges are proposed, they should be designed so as to avoid fragmentation of linear habitats associated with the Grand Canal Corridor.</p>											
	⇅	↑	⇅	⇅	↑	↑	O⇅	O⇅	↑	O⇅	The SDZ scheme needs to balance connectivity and movement within and around the lands and an approach to minimise the number of new bridge crossings has informed the design of the scheme. Notwithstanding the above, mitigation

2.2 Movement and Transport Strategy	BFF	PHH	W	SG	Ma	AQ	CA	L	CC	GI	Commentary/recommendation
											measures are recommended to reduce negative effects on the biodiversity, flora and fauna SEOS in particular the habitats and riparian vegetation along the northern towpath and the avifauna and bat species that utilise this ecological corridor. Cumulative negative effects on biodiversity could also arise in relation to enhanced access for pedestrians and cyclists along the northern towpath that would represent increased human presence and disturbances to this ecological corridor. Specific measures have been incorporated to the Planning Scheme to address this issue.
2.2.6 Parking In order to promote sustainable travel patterns, this Planning Scheme seeks to minimise the number of car spaces and maximise their use within the SDZ lands. A detailed car parking strategy and/or Workforce Travel Plan (also known as Mobility Management Plan – see section 2.2.7 and accompanying Transport Assessment and Strategy) that facilitates shared or reduced use of car parking by different uses (including residential and Park & Ride) should be submitted with applications for large scale mixed use development.											
	⇅	↑	⇅	⇅	↑	↑	O⇅	O⇅	↑	O⇅	This measure further strengthens the support for non vehicular transport into the overall scheme and at project level. Long

2.2 Movement and Transport Strategy	BFF	PHH	W	SG	Ma	AQ	CA	L	CC	GI	Commentary/recommendation
											term positive effects on achieving material assets, air quality, climate change and population and human health SEOS
To allow for more efficient turnover of spaces, on-street parking (where provided) should not be allocated to individual dwellings. The sharing of spaces for residential development with Park and Ride facilities is also particularly encouraged. The development of car free housing may be considered in the higher density areas of the SDZ lands adjacent to Public Transport interchanges and within the town centres planned around the Clondalkin-Fonthill and Kishoge rail stations.											
	⇅	↑	⇅	⇅	↑	↑	⇅	⇅	↑	⇅	As above
To facilitate the use of electrically operated cars and bicycles, all developments shall provide facilities for the charging of electric vehicles at a rate of up to 10% of the car parking provision. The remainder of parking spaces should be capable of accommodating future charging points.											
	○	↑	○	○	↑	↑	○	○	↑	○	As above
<p>Bicycle Parking Standards</p> <p>Secure bicycle parking shall be provided throughout Clonburris and shall be designed in accordance with the National Cycle Manual (2011). Every effort shall therefore be made to ensure that bicycle parking is sheltered, secure and designed in a manner that integrates appropriately into the public realm. The minimum parking standards for the SDZ lands are set out below. Reference should be made to the South Dublin County Development Plan 2016-2022 and the Transport Assessment and Strategy that accompanies this Planning Scheme.</p>											
	○	↑	○	○	↑	↑	○	○	↑	○	This measure further strengthens the support for non vehicular transport into the overall scheme and at project level. Impacts as outlined above.
Traffic and Transport Assessments											

2.2 Movement and Transport Strategy	BFF	PHH	W	SG	Ma	AQ	CA	L	CC	GI	Commentary/recommendation
<p>In addition to the Clonburris SDZ Transport Assessment Report (2017), the need for Transport and Traffic Assessments (TTAs) should be considered on a case by case basis for developments that have the potential to generate a significant increase in trips on the overall transport network. The thresholds for TTAs set out under the Traffic Management Guidelines (NTA, 2003) and, in the case of developments that could affect national roads, the Traffic and Transport Assessment Guidelines (NRA, 2014), should be utilised to help inform whether a TTA is necessary.</p> <p>TTAs will largely be required to address wider public transport, walking and cycling network issues, rather than singularly focusing on impacts on the local street network. Such assessments should demonstrate that there is sufficient public transport, pedestrian, cyclist and road capacity to serve the development and should also provide a clear rationale for the proposed level of car parking having regard to existing and planned public and active transport facilities.</p> <p>Mobility Management Plans</p> <p>A Workplace Travel Plan or Mobility Management Plan should be required for larger sized developments in accordance with the recommendations of Achieving Effective Workplace Travel Plans: Guidance for Local Authorities (NTA, 2012).</p> <p>Such plans should outline a series of measures to encourage sustainable travel modes and reduce car borne traffic within a development. These may include proposals to encourage cycling and walking, car sharing, car-pooling, flexible working hours and public transport use etcetera.</p>											
	O	↑	O	O	↑	↑	OO	O	↑	O	This measure further strengthens the support for non vehicular transport into the overall scheme and at project level. Positive impacts as these measures apply for wider transport and mobility management plans as required.

2.3 Green and Blue Infrastructure

2.3 Green and Blue Infrastructure	BFF	PHH	W	SG	Ma	AQ	CA	L	CC	GI	Commentary/recommendation
Overarching principle To deliver a network of high quality green and blue infrastructure spaces and public parks while protecting, enhancing and sensitively upgrading the natural, built and cultural assets of Clonburris-Balgaddy lands.											
	↕	↑	↑	↕	↕	↑	↑	↑	↑	↕	Generally this principle will generate positive effects in relation to the SEOs and for many of the environmental parameters provision in the Planning Scheme will provide robust safeguards. Indirect positive effects are identified for material assets around sustainable transport, and soil SEOS as well as water and biodiversity (subject to additional mitigation measures). Reduction of surface water run off and flood risk is a further positive effect associated with this principle. Mitigation measures are recommended to ensure additional protection for

2.3 Green and Blue Infrastructure	BFF	PHH	W	SG	Ma	AQ	CA	L	CC	GI	Commentary/recommendation
											biodiversity, soil and ecology and material asset that reflect particular areas and sensitivities on the SDZ planning scheme lands. See Chapter 8 of the SEA ER.
<p>The key principles for green and blue infrastructure for the Clonburris scheme are as follows</p> <ul style="list-style-type: none"> To protect, enhance and develop an interconnected green and blue infrastructure network of parks, open spaces, hedgerows, grasslands, protected areas, rivers and streams for amenity and recreation, biodiversity protection, flood management and adaptation to climate change. To retain and improve key landscape and ecological features such as hedgerows, the Grand Canal and the Griffeen River. To incorporate new elements of Green and Blue Infrastructure such as tree planting, parks and natural open spaces and sustainable urban drainage systems. To reduce fragmentation and strengthen ecological links through the retrofitting and or upgrading of the pedestrian bridge over the railway line to a 'green bridge' To connect parks and areas of open space with ecological and recreational corridors to aid the movement of biodiversity and people and to strengthen the overall Green Infrastructure network. To seek to retain prevent loss of important hedgerows, aquatic habitats and established tree lines wherever possible. To support native plant and animal species and encourage corridors for their movement 											
	↑↕/	↑	↑	↑	↑	↑	↑	↑	↑	↑	These principles contribute positively across all SEOS, direct long term positive impacts are identified for biodiversity, Flora and fauna, as well as water and soil and geology. Landscape SEOs and Population and Human health SEOs are also positive in this proposal. Indirect positive effects are also

2.3 Green and Blue Infrastructure	BFF	PHH	W	SG	Ma	AQ	CA	L	CC	GI	Commentary/recommendation
											identified for material assets through water quality, SUDs, flood reduction, soil resources, and encouraging sustainable transport opportunities between the parks. To further enhance these principles, mitigation through rewording of the final principle is recommended as well as additional mitigation measures to further clarify and guide design and operation of routes for ecological needs.
<p>It is an objective of the scheme to retrofit or replace the existing pedestrian bridge over the railway line to provide a green bridge connecting the Griffeen Valley Park and the proposed extension of the park to the south.</p> <p>The green bridge shall be integrated into the surrounding landscape and shall provide connections for pedestrians and cyclists, commuting routes for species and the park landscape as a whole.</p> <p>The design of the existing pedestrian bridge shall be in accordance with the Landscape Institute (UK) Green Bridges Technical Guidance Note 09/2015 December 2015.</p>											
	↑/↕	↑	↑	↑	↑	↑	↑	↑	↑	↑	Green bridges can enhance ecological connectivity at landscape level, and when designed properly can be accessible for pedestrians and wildlife. Mitigation in the form of referencing guidance and standards is recommended in relation to this proposal to ensure the new bridge or retrofitting of

2.3 Green and Blue Infrastructure	BFF	PHH	W	SG	Ma	AQ	CA	L	CC	GI	Commentary/recommendation
											existing is designed to function for all the listed users and benefit ecological connectivity.
Grand Canal: <p>The Grand Canal (pNHA) is a man-made linear waterway that hosts a rich variety of plant and animal species including protected species and numerous mature tree species and is a key element in the existing Green Infrastructure Network. Associated canal structures and buildings contribute to the unique setting and historic character of the Grand Canal and the southern tow-path provides an uninterrupted corridor for pedestrian and cyclist movement.</p> <p>Development proposals on the SDZ lands close to the Grand Canal shall protect and incorporate high value natural heritage features including watercourses, wetlands, grasslands, woodlands, mature trees, hedgerows and ditches and include for a 50m set back for all buildings and a 30m set-back distance for development (with the exception of bridges and footpaths) from the pNHA boundary to facilitate the continuity of the Grand Canal as a corridor for protected species, biodiversity, and a fully functioning Green Infrastructure network. (See also Sections 2.10 and 2.11)</p> <p>Where new canal crossings i.e footbridges/cycle bridges are proposed, they should be designed so as to avoid fragmentation of linear habitats associated with the Grand Canal Corridor.</p>											
	↑/↕	↑	↑	↑	↑	↑	↑	↑	↑	↑	50m buffer from the canal were identified as predraft stage and these have been incorporated to the SDZ Planning Scheme. Generally positive impacts identified as this principle aims to improve the quality, character and continuity of the canal. The function of the northern towpath as an ecological corridor is recommended for additional mitigation measures particularly

2.3 Green and Blue Infrastructure	BFF	PHH	W	SG	Ma	AQ	CA	L	CC	GI	Commentary/recommendation
											around managed access. Mitigation recommended.
<p>The key elements of the proposed SUDS System are as follows:</p> <ul style="list-style-type: none"> The SUDs system shall be designed into the street, public squares and open space network, as a series of ‘wet’ and ‘dry’ landscape elements. These should be of a high quality to achieve a multifunctional space for amenity, biodiversity and surface water management and should include include grasses and swales, and high quality, well designed attenuation ponds and constructed wetlands. A system of infiltration trenches, tree pits, permeable paving green roofs, and other elements shall be provided that should direct surface water to attenuation areas. Swales should be designed as linear landscape elements and used as elements to enhance streetscape and neighbourhood character and identity. Surface water should be captured and treated within the curtilage of each site using green roofs, rainwater gardens, filter trenches or bio retention units. <p>A detailed Surface Water Management Plan is required to be prepared by the landowners / developers and agreed with South Dublin County Council in advance of any development on the SDZ lands. All SUDS proposals within the SDZ shall comply with this Plan and also with the Greater Dublin Strategic Drainage Study and the Sustainable Urban Drainage Manual C753.</p>											
	↑	↑	↑	↑	↑	↑	○	↑	↑	↑	The integration of SUDS and reference to relevant SUDS Manual are identified as directly positive for material assets, soil and geology and Water SEOs in particular. Indirect positive effects on population and human health, biodiversity, green infrastructure, landscape and climate change SEOS are also identified.

2.3 Green and Blue Infrastructure	BFF	PHH	W	SG	Ma	AQ	CA	L	CC	GI	Commentary/recommendation
<p>Temporary Greening:</p> <p>It is an objective of the plan to support temporary greening proposals including those that involve community growing, allotments, sports and recreation, on the basis that it is not intended to develop these sites in the medium to long term for 5-10 years. Pedestrian and cycle paths could also be formed along proposed route networks.</p> <p>It is essential to fully convey to the public that these are temporary measures and landscape uses, and they will be replaced with re-development on the site in the future. These sites could provide links with schools, the Grand Canal and or the Griffeen Valley Park.</p> <p>It is also an objective of the scheme to promote advanced greening of lands. Green features including structural planting may be provided in advance of construction. This would ensure essential green infrastructure, trees and other planting can become established, mature and resilient prior to the completion of the development. Proposals for temporary greening shall be agreed with the planning authority at planning application stage.</p>											
	↑	↑	↑	↑	↑	↑	↑	↑	↑	↑	Positive medium to long term effects identified in particular for population and human health, landscape, biodiversity and green infrastructure for this proposal. Indirect positive effects should tree planting be established in advance particularly for air quality.

2.4 Urban Centres

2.4 Urban Centres	BFF	PHH	W	SG	Ma	AQ	CA	L	CC	GI	Commentary/recommendation
Key Principles of the Urban Centres <ul style="list-style-type: none"> To develop the Planning Scheme based on the following urban centres hierarchy: <ul style="list-style-type: none"> Clonburris as a vibrant and sustainable centres to serve a district catchment Kishoge as a vibrant and sustainable secondary urban centre to serve a large local catchment A network of 4 Local Nodes to serve a local catchment To promote Clonburris Urban Centre as the primary urban centre in the Planning Scheme by directing higher order retail, retail services, residential, cultural, leisure, financial, public administration, restaurants/bars, entertainment and civic uses into and adjoining the Core Retail Area of this centre. To promote Kishoge Urban Centre as a primary urban centre in the Planning Scheme by directing higher order retail, retail services, residential, cultural, leisure, financial, public administration, restaurants/bars, entertainment and civic uses within and adjoining the Core Retail Area of this centre. To direct retail, commercial, leisure, entertainment, civic, community and cultural uses into Clonburris and Kishoge Urban Centres and to achieve a critical mass of development and a mix of uses that is appropriate to each level in the urban hierarchy. To promote a high standard of urban design in urban centres that contributes to the creation of safe and attractive streets and spaces and creates desirable places to work, live and visit. To achieve an efficient use of land in centres, and to achieve development densities that can support vibrant, compact, walkable places that prioritise pedestrian movement. To protect the quality, ambiance, vibrancy and vitality of urban centres by promoting an appropriate mix of day and night-time uses, including commercial, recreational, civic, cultural, leisure and residential uses and to limit or control uses that might have a detrimental impact on the amenities of centres. 											
	↕/↑	↑	↑/↕	○	↑	↑	↑	↑	↑○	↕	These principles generate positive direct effects on population and human health, as well as contributing to achieving the Material Assets (Transport), Air Quality, and Climate Change SEOs.

2.4 Urban Centres	BFF	PHH	W	SG	Ma	AQ	CA	L	CC	GI	Commentary/recommendation
											<p>By promoting a mix of uses as well as creating vibrant urban centres with high quality public realm and pedestrian friendly, the centres will contribute to place making over time meeting the needs of the population as well as supporting non vehicular transport such SEOS are positively affected with positive effects on population and human health.</p> <p>For other SEOs mitigation measures the planning scheme provide robust protection</p>
<p>2.4.2 Place Making</p> <p>Place Making is the combination of spatial planning, urban design and public realm to create attractive, distinct and vibrant locations. The urban centres in the Planning Scheme will be critical in in the creation of distinctive new places in Clonburris and ensuring that there are discernable focal points in the scheme to provide identity, amenities and facilities for the community. The urban centres at Clonburris and Kishoge are key elements in achieving the vision of this Planning Scheme which sets out to create a vibrant community offering a new way of living.</p> <p>The delivery of the urban centres in tandem with population increase from residential construction is required in the phasing to provide place making and ensure a high quality of life for residents as the new community establishes. Please refer to Section 4.4 Place Making for the phasing requirements associated with place making.</p>											

2.4 Urban Centres	BFF	PHH	W	SG	Ma	AQ	CA	L	CC	GI	Commentary/recommendation
<p>Urban Grain</p> <p>Urban grain is a way of describing the degree of mixing of different physical elements in an urban area. It generally relates to the pattern of urban blocks and the pattern of the subdivision of urban blocks into plots. Urban grain is often described as being coarse when blocks and plots are mainly large in size, mixed where they are of different sizes and fine where they are small in size. Urban grain is a key factor in determining mix of uses and diversity in an area as greater mix of uses is associated with greater variety of blocks and plots.</p> <p>In the urban centre where coarser urban grain and larger buildings are proposed, a careful approach to the design of facades will be required. Designers will be required to clearly express the ground floor, the main façade, a strong parapet and the roof form. Individual buildings within blocks should express distinctive building design.</p> <p>At selected locations, a fine urban grain is required in the main squares of the urban centres at Clonburris and Kishoge to provide for physical, visual and land use diversity in contrast to the predominant coarse grain. Fine urban grain will provide for smaller commercial footprints, which are attractive to smaller, independent businesses and are important to the development and sustenance of a mixed, local and evening economy.</p> <p>At Clonburris Retail Core, three block frontages to the square shall be selected for fine grain frontage. Figure 2.4.2 shows an indicative Plan for the Clonburris Retail core, including indicative locations for fine urban grain that should be developed as terraces of individual and spatially-independent, mixed use buildings. This type of fine urban grain is has been shown to be an important component of successful masterplanned urban centres. The fine urban grain frontage should be between 6 and 8 metres and should not in any case exceed 10 metres (see indicative elevation and plan in Figure 2.4.3 and 2.4.4). Each plot shall have an individual distinctive design.</p> <p>The main entrances to buildings should be from the main street or space frontage. In general, these entrances should be frequent to ensure increased street activity and passive surveillance. Distances between entrances should not exceed 10m in the primary and secondary frontage. See Section 2.8.4 for general urban grain requirements.</p>											
	⇅/↑	↑	↑	○	↑	↑	↑	↑	↑○	⇅	Design considerations will contribute positively to place making with direct positive effects on population and human health, landscape and indirectly on material assets.

2.4 Urban Centres	BFF	PHH	W	SG	Ma	AQ	CA	L	CC	GI	Commentary/recommendation
2.4.4 Restrictions on Uses An over-concentration of certain uses will be discouraged in the urban centres, due to an overriding need to maintain the integrity, quality and vibrancy of centres. The Planning Scheme seeks to ensure that the quantum of off-licences, fast food/ takeaway outlets and betting offices is not disproportionate to the overall size and character of the area and that the development would not have a negative impact on the amenity of the area due to noise, general disturbance, hours of operation and litter. The provision of a small section of a convenience shop for an ancillary off-licence use is generally acceptable.											
	O	↑	O	O	↑	↑	O	O	OO	O	Positive long term effects in relation to Population and human health, indirect positive on waste management and noise.
Development proposals for fast food/takeaway outlets will be strictly controlled and all such proposals are required to address the following: <ul style="list-style-type: none"> The potential effect and the proximity of fast food outlets or take away outlets to vulnerable uses, such as schools or parks. The cumulative effect of fast food outlets on the amenities of an area. The effect of the proposed development on the existing mix of land uses and activities in an area. Opening/operational hours of the facility. The location of vents and other external services and their impact on adjoining amenities in terms of noise/smell/visual impact. 											
	O	↑	O	O	↑	↑	O	O	OO	O	As above.

2.5 Retail Development

2.5 Retail Development	BFF	PHH	W	SG	Ma	AQ	CA	L	CC	GI	Commentary/recommendation
Key Retail Principles of Planning Scheme <ul style="list-style-type: none"> To support new retail provision to meet the needs of the population and to direct significant new retail floor space into designated retail Core of Clonburris Urban Centre; To promote the provision of an appropriate mix, range and type of uses in Clonburris Urban Centre, including retail, community, recreational, medical and childcare uses, at a scale that caters predominantly for the population of the lands; To support and facilitate the development of a Clonburris Urban Centre of an appropriate urban scale, providing a sustainable retail mix, that facilitates walking, cycling and use of public transport; and In the Clonburris and Kishoge centres, the provision of non-retail uses that would preclude the provision of a more appropriate range of services may be restricted at ground floor level within the shopping streets, in addition to any uses that would seriously affect the amenities of the area and impinge on achieving the Planning scheme. 											
	↕/↑	↑	↑/↕	○	↑	↑	↑	↑	↑○	↕	<p>These principles generate positive direct effects on population and human health, as well as contributing to achieving the Material Assets (Transport), Air Quality, and Climate Change SEOs.</p> <p>By promoting a mix of retail on the SDZ lands that meet the needs of the population as well as supporting non vehicular transport such SEOS are positively affected.</p> <p>For other SEOs mitigation measures the Planning scheme provide robust protection.</p>

2.5 Retail Development	BFF	PHH	W	SG	Ma	AQ	CA	L	CC	GI	Commentary/recommendation
2.5.3 Clonburris Urban Centre – Core Retail Area The Scheme provides one major retail District Centre at Clonburris Urban Centre, focused on the transport interchange at Fonthill Train Station. For the purpose of retail policy, a Core Retail Area for the Clonburris Urban Centre and Kishoge Urban centres are defined in the Function Map for the Planning Scheme (see Figure 2.5.1).											
	↕	↑	↕	↕↑	↑	↑	↕	↑	↑	↕/ ↑	Impacts are similar to those identified above.
Kishoge Core Retail Area The Kishoge Centre should function as a Level 4 Local Centre in retail terms, generally comprising a small group of shops, newsagent, small-sized supermarket/general grocery store, sub-post office and other small shops of a local nature serving the local catchment. At a minimum, a small supermarket of c1,000 sqm net sales area must be provided. Retail provision should generally be provided in tandem with the provision and occupation of residential units (see the Place Making Requirements section of the Phasing Strategy).											
	↕	↑	↕	↕↑	↑	↑	↕	↑	↑	↕/ ↑	Impacts are similar to those identified above.
Local Nodes The Scheme identifies 4 Local Nodes at Grange, Cappaghmore, Clonburris Little and Gallanstown to accommodate a range of local uses, including local retail provision. These nodes are permitted to accommodate a convenience store up to a maximum of c300sqm net sales area. Modest increases in building scale will be allowed at Grange, Gallanstown, Clonburris Little and Cappagh. Local Shops Local Shops are defined in the Development Plan as convenience shops of less than 100sqm to primarily serve a local ‘walk in’ catchment in residential areas. The Planning Scheme provides for a hierarchy of retail locations and in general, it is considered that the provision of retail floorspace outside the District Centre (Clonburris), Local Centre (Kishoge) and the Local Nodes shall not be permitted, subject to exceptional circumstances.											
2.5.7 Applications for Retail Development Applications for new retail development shall accord with the requirements outlined in the Planning Scheme in addition to the following criteria:											

2.5 Retail Development	BFF	PHH	W	SG	Ma	AQ	CA	L	CC	GI	Commentary/recommendation
<ul style="list-style-type: none"> Retail development should be in accordance with the role and function of the retail centre and accord with the scale and type of retailing identified for that location. Retail development should be in accordance with the fundamental objective to support the vitality and viability of the retail centre and must demonstrate compliance with the sequential approach. Proposals to amalgamate retail units will be carefully considered. <p>Major retail proposals (exceeding 1,000 sq.metres) are required to provide a detailed Retail Impact Assessment (RIA) and Design Statement in accordance with Section 2.8 Built Form and Design.</p>											
	↕	↑	↕	↕↑	↑	↑	↕	↑	↑	↕/ ↑	Impacts are similar to those identified above.

2.6 Economic Development.-

2.6 Economic Development	BFF	PHH	W	SG	Ma	AQ	CA	L	CC	GI	Commentary/recommendation
Key Economic Principles of Planning Scheme <ul style="list-style-type: none"> To support the local economy and promote Clonburris and Kishoge as a location for employment and enterprise floorspace. To support and facilitate the provision of additional strategic infrastructure to enhance the attractiveness of Clonburris as a location for economic development. To promote enterprise and employment related development at locations in the Planning Scheme that are proximate to and integrated with transportation and other urban land uses, to promote compact urban development and sustainable transport. To ensure that employment floorspace and enterprise units are designed to the highest architectural and landscaping standards and that natural site features, such as watercourses, trees and hedgerows are retained and enhanced as an integral part of the scheme. To support and facilitate the provision of an enterprise centre and incubation hubs in accordance with actions identified by the Local Enterprise Office, through the Local Economic and Community Plan or by other enterprise support initiatives. <ul style="list-style-type: none"> To provide for a range of employment accommodation types, including units suitable for small business; and 											

2.6 Economic Development	BFF	PHH	W	SG	Ma	AQ	CA	L	CC	GI	Commentary/recommendation
<ul style="list-style-type: none"> To support the development of tourism infrastructure, attractions, activities and facilities at appropriate locations subject to sensitive design and environmental safeguards. 											
	↕/↑	↑	↑/↕	○	↑	↑	↑	↑	↑○	↑/ ↕	<p>These principles generates positive direct effects on population and human health, as well as contributing to achieving the Material Assets (Transport), Air Quality, Green Infrastructure and Climate Change SEOs.</p> <p>By promoting employment and enterprise on site and in line with strategic infrastructure integrated landuse and transport is being promoted as well as the opportunities for people to live and work locally.</p> <p>The principle that promotes the highest design standards as well as retention of natural features contribute to Biodiversity and Water SEOs in a cumulative effect over the longer term.</p> <p>For other SEOs mitigation measures the planning scheme provide robust protection</p>
<p>2.6.2 Location of the Employment Floorspace within the Scheme</p> <p>Predominantly, the employment floorspace will be provided to facilitate the development of a vibrant and mixed use centre at the new Clonburris Centre. The distribution of the employment floorspace in the Scheme shall be related to the accessibility offered by public transport across the lands. The</p>											

2.6 Economic Development	BFF	PHH	W	SG	Ma	AQ	CA	L	CC	GI	Commentary/recommendation
<p>main commercial areas are focused primarily around Fonthill Train Station and to a lesser extent Kishoge Train Station. The Planning Scheme shall accommodate a range of 30,000 sqm – 40,000 sqm of non-retail commercial floorspace.</p>											
	↕	↑	↕	↕↑	↑	↑	↕	↑	↑	↕/ ↑	Aligning the employment floorspace close to the Clonburris centre and accessibility to public transport gives rise to positive long term effects on Population and Human Health, transport and indirectly on air quality and climate also. Impacts are similar to those identified above.
<p>2.6.3 Employment Floorspace The following type of commercial development are the target sector for the Employment Floorspace in the Planning Scheme:</p> <ul style="list-style-type: none"> Office and business premises for local employers in financial, professional services, insurance, legal services, property services, software and service start-up. Small flexible business premises and Support services to the industries located in the technological crescent zone from Citywest to Grangecastle Castle Business Park 											
	↕	↑	↕	↕↑	↑	↑	↕	↑	↑	↕/ ↑	Impacts are similar to those identified above.
<p>The employment floorspace should be provided in the form of 10,000sqm of flexible floorspace to cater for small and medium sized expanding businesses and the balance to be provided for in buildings of a larger floor plate. As a minimum, 10% of the employment floorspace provided should be in the form of small-medium sized units/ incubation units of between 100 – 200sq.m.</p>											

2.6 Economic Development	BFF	PHH	W	SG	Ma	AQ	CA	L	CC	GI	Commentary/recommendation
	↕	↑	↕	↕↑	↑	↑	↕	↑	↑	↕/ ↑	Impacts as above.
<p>Any enterprise/training space should take the form of a purpose built facility located at Kishoge or Clonburris. The purpose of the enterprise/training facilities is to provide office, training, incubation and workshop accommodation backed up by support, catering for local business start-ups.</p> <p>Design and Land Use Mix</p> <p>The provision of employment floorspace within the scheme will generally be as part of mixed non retail and residential development. Non-retail uses encompasses commercial, office-based uses. Residential use should be mixed vertically or horizontally within individual urban blocks. Typically, residential use will be located above other uses where vertical mix is proposed.</p> <p>Home Working</p> <p>Planning Scheme supports and encourages the provision of ground floor purpose built live-work units as part of mixed use and residential developments in appropriate locations, as a means of enlivening streets and to provide flexible accommodation for small businesses. Any additional floorspace associated with home working shall be additional to the employment floorspace range of 30,000 sqm – 40,000 sqm total for the Planning Scheme.</p> <p>Additionally, the Planning Scheme will supports and facilitate the adaption of constructed units to accommodate home based economic activity that is subordinate to the main residential use of a dwelling and where, by virtue of their nature, location and scale, they can be accommodated without adversely impacting on the amenities of the area. Proposals will be assessed with respect to the suitability of the residential site to accommodate the proposed home based economic activity having regard to the size and scale of the site and dwelling, the prevailing density of the area, the availability of adequate safe car parking and the general compatibility of the nature of the use with the site context.</p>											
	↕	↑	↕	↕↑	↑	↑	↕	↑	↑	↕/ ↑	Impacts as above. Homeworking can reduce transport requirements and give rise to positive effects on material assets as well as population and human health.

2.7 Community Facilities

2.7 Community Facilities	BFF	PHH	W	SG	Ma	AQ	CA	L	CC	GI	Commentary/recommendation
Key Community Facilities Provision Principles of Planning Scheme <ul style="list-style-type: none"> To promote clusters of community facilities and services such as community centres, health care, childcare, schools, sports and leisure facilities and open spaces to create multi-purpose community hubs. To ensure that community facilities and services are provided on a phased basis in tandem with the provision of new residential development. To predominantly direct healthcare facilities, childcare facilities and community buildings into the urban centres and to locations that are accessible by public transport, walking and cycling. To implement a priority location principle for community facilities, based on the catchment scale for the proposal, the urban hierarchy of the Planning Scheme, the accessibility of the site and a sequential test in relation to site availability. <p>Social Inclusion and Accessibility</p> <p>This Planning Scheme has been prepared with social inclusion as an underpinning overarching consideration with an emphasis on creating socially and physically inclusive neighbourhoods. Additionally, the Planning Scheme promotes the highest levels of universal accessibility in the design of all community facilities.</p>											
	↕	↑	↕	↕↑	↑	↑	↕	↑	↑	↕/ ↑	<p>This principle generates positive direct effects on population and human health in particular.</p> <p>Indirect positive effects are identified for around quality of life and environmental quality. Impacts are similar to those identified above. However, more direct positive effects on Air Quality, Climate change, soil and geology (open space provision), public transport, walking and</p>

2.7 Community Facilities	BFF	PHH	W	SG	Ma	AQ	CA	L	CC	GI	Commentary/recommendation
											<p>cycling also contribute to achieving the transport SEO and indirectly to the climate change SEO.</p> <p>Where green /blue infrastructure is integrated to open space provision this contributes to the GI SEO.</p> <p>For other SEOs impacts are associated with the built development generally and would be mitigated through the provisions in Chapter 8 of this SEA ER.</p>
Table 2.7.1 Minimum Provision of Medium to Large Scale Community Buildings											
Hub Type		Provision				Location Criteria					
Urban hub		<p>This hub is located in the Urban Centre at Clonburris and should be the location for intensive community uses that do not require extensive outdoor space.</p> <p>A minimum of a 2,500 sqm building(s) with a multi-functional use, including a minimum of 600 sqm of dedicated community space shall be provided.</p> <p>The building(s) may provide for</p>				<p>Community uses in the urban hub should be clustered with other uses, and form part of the Clonburris Retail Core. The Planning Scheme identifies the urban hub location as a significant opportunity to develop a local landmark building.</p>					

2.7 Community Facilities	BFF	PHH	W	SG	Ma	AQ	CA	L	CC	GI	Commentary/recommendation
		uses such as civic, community offices, health centre, nurseries and creches.									
Park hubs (District Level at Clonburris Little and 3no. smaller park hubs at Grange, Cappagh and Gallanstown.		<p>Park hubs are designated to correspond to the local nodes at Grange, Clonburris Little, Cappagh and Gallanstown and are located adjacent to open space provision. The Park Hub designation facilities complementary floorspace required for the adjacent park such as changing rooms, meeting rooms etc.</p> <p>A district level provision of recreation facilities shall be located adjacent to Barony Park South as part of the Clonburris Little Local Node.</p> <p>This facility might be shared with schools and should accommodate meeting rooms, sports hall, changing rooms, playground & flexible</p>									

2.7 Community Facilities	BFF	PHH	W	SG	Ma	AQ	CA	L	CC	GI	Commentary/recommendation
	community space in a purpose built building(s) of a minimum gross floor space of 1,500 sqm.										
	↕	↑	↕	↕↑	↑	↑	↕	↑	↑	↕/	The provision of locational criteria for Urban and Park Hub create positive effects for Population and Human Health and Material assets in particular For other SEOs impacts are associated with the built development generally and would be mitigated through provisions included in Chapter 8 of this SEA ER.
There are a network of suitable locations in the Scheme to accommodate the diverse and changing community facilities, namely Clonburris Urban Centre, Kishoge Urban Centre and 4 Local Nodes at Clonburris Little, Cappaghmore, Grange and Gallanstown. These locations should accommodate a range of small-scale non-residential uses such as childcare facilities, community facilities, individual or small groups of local shops and/or local bus stops consistent with the urban form of the Planning Scheme. The priority location principle shall apply for all community facilities with site suitability assessed based on the catchment scale for the proposal, the urban centre hierarchy of the Planning Scheme, the accessibility of the site and the availability of alternative, more suitable sites.											
	↕	↑	↕	↕↑	↑	↑	↕	↑	↑	↕/	Impacts as above.
Childcare The Scheme requires a minimum of one purpose built facility in the Clonburris Urban Centre and one purpose built facility in Kishoge Urban Centre. The minimum requirements for childcare spaces across the lands shall be in accordance with Table 2.7.2. The phasing requires the developer to demonstrate available provision is provided in the catchment.											
	↕	↑	↕	↕↑	↑	↑	↕	↑	↑	↕/	Impacts are similar to those identified

2.7 Community Facilities	BFF	PHH	W	SG	Ma	AQ	CA	L	CC	GI	Commentary/recommendation
											above. For other SEOs impacts are associated with the built development generally and would be mitigated through those included in Chapter 8 of this SEA ER.
Health Services <p>Large medical centres and group practices will be favourably considered and accommodated in Clonburris Urban centre and Kishoge Urban centre. The phasing for the Scheme requires the provision of a primary health care centre. The centre should facilitate teams of multidisciplinary professionals (i.e. GPs, nurses, therapists, home care services, social workers) to serve the needs of the population.</p> <p>Small scale medical surgeries/practices (doctor/dentist/physiotherapist, etc) are also supported in the Scheme, subject to compliance with the urban hierarchy and priority location principles.</p>											
	↕	↑	↕	↕↑	↑	↑	↕	↑	↑	↕/	Impacts are similar to those identified above. For other SEOs impacts are associated with the built development generally and would be mitigated through provisions included in Chapter 8 of this SEA ER.
Places of Worship <p>The Scheme supports and facilitates the development of places of worship and multi-faith facilities at Clonburris District Urban Centre, Kishogue Local Urban Centre and at other suitable locations where they do not adversely impact on existing residential amenities and comply with the Planning Scheme.</p>											
	↕	↑	↕	↕↑	↑	↑	↕	↑	↑	↕	Impacts are similar to those identified above. For other SEOs impacts are associated with the built development generally and would be mitigated through

2.7 Community Facilities	BFF	PHH	W	SG	Ma	AQ	CA	L	CC	GI	Commentary/recommendation
											provisions included in Chapter 8 of this SEA ER.
Schools <p>The Department has identified a need for 3 new primary schools and 3 new post primary schools to service the projected demand associated with the development of the SDZ and complement the existing schools on the SDZ lands. The demographic of the emerging population in Clonburris will be monitored by the Department of Education and Skills on an ongoing basis and it is possible that further educational requirements may arise over the lifetime of this Scheme.</p> <p>The delivery of the school sites to the Department in tandem with the planning and construction of residential units is a phasing requirement of the Scheme</p>											
	↕	↑	↕	↕↑	↑	↑	↕	↑	↑	↕/ ↑	Impacts are similar to those identified above. For other SEOs impacts are associated with the built development generally and would be mitigated through provisions included in Chapter 8 of this SEA ER.
Garda Station and Fire Station <p>It is noted that the Adamstown SDZ Planning Scheme has identified a possible site for a Fire Station. Given the nature and scale of development proposed in Clonburris, provision has been made to reserve a site for a fire station. Following consultation with the Dublin Fire Brigade, the preferred site is identified adjacent to the Fonhill road and Thomas Omar Way to the north of Clonburris District Centre.</p> <p>At the implementation stage, if South Dublin County Council (as the Development Agency) is advised in writing that a formal determination has been made by the Dublin Fire Brigade that the site is not required for a fire station, the site may then be developed for residential or community uses in accordance with the guidance set out for the Clonburris North West Development Area.</p> <p>In the event of An Garda Siochana identifying the need for the provision of a Garda Station at Clonburris, the station can be accommodated within the</p>											

2.7 Community Facilities	BFF	PHH	W	SG	Ma	AQ	CA	L	CC	GI	Commentary/recommendation
Kishogue or Clonburris Urban Centres.											
	↕	↑	↕	↕	↕	↕	↕	↕	↕	↕/	Impacts are similar to those identified above. For other SEOs impacts are associated with the built development generally and would be mitigated through provisions included in Chapter 8 of this SEA ER.

2.8 Built Form and Design

2.8 Built Form and Design	BFF	PHH	W	SG	Ma	AQ	CA	L	CC	GI	Commentary/recommendation
Overarching Principle To ensure that development across the SDZ lands is carried out in a design led manner that prioritises place making and accords with the core principles of urban design and the creation of integrated streets.											
	↕	↑	↕	↕	↑	↑	↕	↑	↑	↕	<p>This principle generates positive direct effects on a number of SEOS including direct effects on population and human health and landscape.</p> <p>Indirect positive effects are identified for climate change (through integration of placemaking and reducing private transport); air quality and green infrastructure (through its integration to the overall scheme).</p> <p>Potential negative impacts associated with this principle for example in relation to Biodiversity SEOs would be mitigated by the measures which have been integrated into the Scheme and are identified in Chapter 8 of this SEA ER.</p>
Key Principles <ul style="list-style-type: none"> To ensure that development is designed in accordance with best practice and promotes identity and diversity between Development Areas; To ensure that development is laid out in a series of blocks and plots that are legible, permeable and human in scale with appropriate topography 											

2.8 Built Form and Design	BFF	PHH	W	SG	Ma	AQ	CA	L	CC	GI	Commentary/recommendation
<p>responses, building heights, street widths, urban grain and street frontages; and</p> <ul style="list-style-type: none"> To design streets using a more integrated approach to pedestrian, cyclist and vehicular movement and ensure that the movement function of each street is reflected by an appropriate design response and design speed; 											
	↕	↑	↕	↕	↑	↑	↕	↑	↑	↕	Impacts are similar to those identified above. However, more direct positive effects on Air Quality, and material assets are identified associated with the final bullet point.
<p>Design Criteria</p> <p>To aid in a coherent approach to the design of development across the SDZ lands, the external finishes of structures and the general appearance and design of development within Clonburris shall accord with the design led criteria set out under the Guidelines for Planning Authorities on Sustainable Residential Development in Urban Areas (2009) and the Retail Planning Guidelines for Planning Authorities (2012) including the design manuals that accompany said documents or any further guidance that supersedes such.</p> <p>Streets and junctions shall be designed in accordance with DMURS (2013), the National Cycle Manual (2011) and the Guidelines for Setting and Managing Speed Limits in Ireland (2015). The Urban Design Compendium (English Partnerships, 2000) should also be referenced in relation to the design of other aspects of development.</p> <p>Design Statements</p> <p>To ensure coherency and quality in design, all medium to large scale development proposals in Clonburris (Landmark Buildings, 10 dwellings or more in the case of residential development or development of over 1,000 sq.m in the case of employment or retail /non retail services development) shall be accompanied by a Design Statement that</p> <ul style="list-style-type: none"> Demonstrates compliance with SDZ Planning Scheme including its various requirements that relate to (inter alia) green infrastructure and blue infrastructure ; movement and transport; land use and density; and built form and design. 											

2.8 Built Form and Design	BFF	PHH	W	SG	Ma	AQ	CA	L	CC	GI	Commentary/recommendation
<ul style="list-style-type: none"> Includes a masterplan that demonstrates proposed and future integration with the development of surrounding sites and Development Areas including vehicular, pedestrian, cycle and public transport connections; Demonstrates compliance with the 12 design criteria contained within the <i>Urban Design Manual A best Practise Guide</i> (2009) in the case of residential development; Demonstrates a range of dwelling sizes to support a variety of household sizes and dwelling types; Demonstrates compliance with the 10 design criteria contained within the <i>Retail Design Manual</i> (2012) in the case of retail development; Includes street cross sections and plans that demonstrate compliance with <i>DMURS</i> (2013) in terms of Movement, Place and Speed; Streetscape; Pedestrian and Cyclist Environment; and Carriageway Conditions etc.; Includes cross sections that demonstrates appropriate design responses to existing and proposed changes in site level including those that relate to streets, spaces, building frontages and SUDS. Includes a Quality Audit addressing street design as outlined under <i>DMURS</i> (2013). Is accompanied by a detailed Landscape Plan that specifies and illustrates the proposed treatment of streets and spaces including parking, street furniture, lighting (street and dedicated pedestrian/cycle routes), planting, surface treatment and children's play facilities; and Is accompanied by details in relation to the identification and incorporation of any features and structures of architectural merit and/or any sites and features of archaeological interest. 											
	↕/↑	↑	↕	↑	↑	↑	↕/↑	↑	↑	↑	<p>The Design Statement requirement emphasise the compliance with a range of inter connected SEO parameters and generates positive impacts for GI SEOS, Material assets, climate change, population and human health, cultural assets and landscape.</p> <p>For other SEOS, mitigation measures which are recommended for the SDZ Planning</p>

2.8 Built Form and Design	BFF	PHH	W	SG	Ma	AQ	CA	L	CC	GI	Commentary/recommendation
											Scheme, would provide appropriate protection.
<p>External Finishes and Appearance</p> <p>To aid in place making and way-finding, careful consideration should be paid to materials and design to ensure that each development makes a positive contribution to its locality and Development Area. Building finishes shall be durable and of a high quality and should adhere to the principles of sustainability and energy efficiency. Consideration should be given where possible to reusing and recycling materials to promote the circular economy and reduce construction and demolition waste.</p> <p>Traditional materials such as stone, brick, timber, metal and glass should be utilised throughout the SDZ lands.</p>											
	↕	↑	↕	↕↑	↑	↑	↕	↕	↑	↕	<p>This contributes to achieving positive effects on landscape, population and human health, climate change and air quality SEOS in particular.</p> <p>Mitigation measure recommended to highlight potential to reuse/recycle existing materials to promote waste management SEO.</p> <p>Potential negative impacts associated with this principle for example in relation to Biodiversity SEOs would be mitigated by the measures which have been integrated into the Scheme and are identified in Chapter 8 of this SEA ER.</p>

2.8 Built Form and Design	BFF	PHH	W	SG	Ma	AQ	CA	L	CC	GI	Commentary/recommendation
<p>In regards to the general appearance and design of residential buildings, all such development shall also comply with the Positive Indicators outlined under the Urban Design Manual A Best Practise Guide (2009) particularly those that relate to 'Context', 'Distinctiveness', 'Public Realm' and 'Detailed Design'. All Retail development shall also be designed to comply with the Key Principles set out under the Retail Design Manual (2012) particularly those that relate to 'Design Quality', 'Context and Character', 'Public Realm' and 'Built Form'.</p> <p>All proposals for signage (advertisement, corporate and public information) shall be designed in accordance with the criteria set out under the South Dublin County Council Development Plan 2016 – 2022. Proposals for residential extension within the SDZ Lands shall be designed in accordance with the South Dublin County Council House Extension Design Guide (2010).</p>											
	O	↑	O	O	O	O	O	↑	O	O	This principle generates positive direct effects on a number of SEOS including population and human health and landscape.
<p>Block Size & Form</p> <p>Development across the SDZ lands shall be shaped and defined by the street network prescribed for the SDZ lands under the Movement and Transport section of this Planning Scheme (Section 2.2) and shall be divided into a series of blocks that present strong building frontages to surrounding streets especially at corners.</p> <p>Block Form</p> <p>Buildings shall be laid out in perimeter blocks across the SDZ lands. Such blocks shall be used to enclose private and semi-private open spaces and, depending on the context and demonstration of need larger blocks or irregular sized blocks may contain small scale mews development, homezones or an element of private parking (see Section 2.3.7 - Design of Parking and Loading).</p> <p>All perimeter blocks shall be designed according to the following principles:</p> <ul style="list-style-type: none"> • Building massing to the perimeter of the block; • Building frontage to all sides, including the shorter sides (secondary street frontage) of the block; • Proper design and attention to corners, avoiding dead or windowless gables; • A continuity of building frontage, which relates to the local or urban context, and avoidance of blank walls; 											

2.8 Built Form and Design	BFF	PHH	W	SG	Ma	AQ	CA	L	CC	GI	Commentary/recommendation
<ul style="list-style-type: none"> An appropriate scale of buildings to provide the appropriate level of enclosure of the streets and spaces; Adequate back-to-back distances within the block; Appropriate building set-backs from the street in line with the use of ground floors; Adequate arrangements for car parking and access around, within or below the block; and Carefully considered subdivision of the block into plots where fine urban grain or mixed use is proposed. 											
	O	↑	O	O	O	O	O	↑	O	O	Impacts as above; these relate primarily to appropriate scale of block size and form through the scheme. Potential negative impacts associated with this principle for example in relation to Biodiversity SEOs would be mitigated by the measures which have been integrated into the Scheme and are identified in Chapter 8 of this SEA ER.
<p>Block Size</p> <p>In order to encourage pedestrian permeability and ensure that streets and blocks are dimensioned to reflect their function and setting, reduced block lengths shall be utilised across the SDZ lands.</p> <p>Block sizes in the Clonburris and Kishoge Urban Centres should have dimensions of approximately 60 to 80 metres and shall be no more than 100 metres in length/depth. Block dimensions in the Development Areas that are contiguous to both urban centres should be no more than 100 metres. Blocks within Development Areas that are beyond the edge of both centres (Adamstown Extension and Ashwood/Canal Extension) shall not exceed 120 metres. Larger or irregular blocks of up to 120 metres should be broken up using mid-block penetration with short cul-de-sac/mews development to serve a small number of dwellings.</p>											
	O	↑	O	O	↑	↑	O	↑	↑	O	As above with direct effects on transport SEO in encouraging pedestrian permeability

2.8 Built Form and Design	BFF	PHH	W	SG	Ma	AQ	CA	L	CC	GI	Commentary/recommendation
											and indirect positive effects on air quality and climate over the longer term.
Topography Gradients on all Link Streets and Local Streets should be as gradual as possible with a gradient of between 1 in 33 (or 3%) and 1 in 20 (or 5%) targeted. In pedestrian streets and the urban squares a gradient change of between 1 in 33 (or 3%) shall be targeted and all surfaces should be smooth and continuous with a gentle slope while avoiding, where possible, steps in level.											
	O	↑	O	O	O	O	O	O	O	O	Primary positive effects relate to enhancing accessibility therefore positive effects on Population and human health SEO.
Urban Grain and Facade Treatment Plot widths should vary across Clonburris with a finer urban grain along park, canal and urban space frontages. Plot widths for houses and duplexes across the SDZ lands should generally be between 5 metres and 9 metres particularly along residential streets with canal and park frontages, which shall be developed with terraces of houses/townhouses or duplexes subdivided into plots of no more than 9 metres. Each plot along canal and park frontages shall be capable of development independently of other buildings/plots within the block with own door access to dwellings. Each plot along canal and park frontages shall be capable of development independently of other buildings/plots within the block with own door access to dwellings. In areas where coarser urban grain is proposed such as the urban centres, designers will be required to clearly express the ground floor, main façade, a strong parapet and roof form. Individual blocks should express distinctive building design. Plots should be vertically articulated into bays with good shopfront design and division with the use of different materials and colours. Building entrances should be designed as a key element of the facade, which may also be expressed vertically in the main façade.											

2.8 Built Form and Design	BFF	PHH	W	SG	Ma	AQ	CA	L	CC	GI	Commentary/recommendation
Balconies should be incorporated in residential development in coarser grain areas to improve the expression of the facade and the interface with the street. The treatment of ground floor corners must also be carefully considered in such areas in terms of design and interface. Corners also provide an opportunity for architectural diversity, with the inclusion of elements such as turrets and zero setbacks at the upper floors.											
	O	↑	O	O	O	O	⇅/↑	↑	O	O	Positive landscape, population and human health SEOS; indirect positive over long term for cultural assets. 50m buffer will be applied in relation to canal frontage.
Street Interface All streets and spaces shall benefit from passive surveillance especially at street corners. In the mixed use areas of the Kishoge and Clonburris Urban Centres, active street edges shall be provided and the dominant building typology in the retail cores should comprise apartments or office based space over retail, service, commercial, community or civic uses.											
	O	↑	O	O	O	O	O	⇅↑	O	O	This generates positive direct effects on population and human health and landscape SEOs.
Building Setback Development across the SDZ lands should present strong building frontages close to street edges. Setbacks from the street edge should therefore be minimised and on-street parking should be incorporated in line with the requirements of DMURS (2013), the street typologies illustrated under this Planning Scheme (Section 2.2 Transport & Movement) and the requirements set out under Section 2.8.10 in relation to the design of parking and loading. Buildings should not be set back from the street or space where commercial uses are proposed at ground floor particularly along primary and secondary retail frontages. In the urban centres a shallow building set-back will be permitted to residential ground floors to provide for a small privacy strip (typically 1 - 2 metres). Measures to reduce noise and air pollution along wider streets such as Arterial and Link Streets shall be incorporated in line with those recommended by											

2.8 Built Form and Design	BFF	PHH	W	SG	Ma	AQ	CA	L	CC	GI	Commentary/recommendation
DMURS (2013) in order to counteract reduced building setbacks.											
	↑	↑	○	↑	↑	↑	○	↑	↑	?	<p>This principle generates positive direct effects on a number of SEOS including population and human health, and landscape.</p> <p>Measures to address noise and air pollution are positive for Air Quality and Climate and indirectly positive for biodiversity, flora and fauna and soil SEOS. Depending the measures utilised, uncertain effects on green infrastructure SEOs ie; tree/hedge planting or physical interventions.</p>
<p>2.8.5 Street and Junction Design</p> <p>Streets including junctions shall be designed from the outset according to their function and as places that balance the needs of users and perform a number of functions including the safe movement of pedestrians and cyclists while catering for vehicular movement.</p> <p>Development proposals shall identify the movement function of each street, which shall be reflected by an appropriate design speed and series of design measures. This should be communicated via a Design Statement as prescribed under Section 2.8.2. Such Design Statement shall also be accompanied by a Quality Audit as prescribed under DMURS (2013).</p> <p>In order to calm vehicular traffic and promote pedestrian and cyclist activity and safety together with self-regulating integrated streets and junctions, a series of design measures in line with DMURS (2013) and the National Cycle Manual (2011) shall be incorporated including those that relate to movement,</p>											

2.8 Built Form and Design	BFF	PHH	W	SG	Ma	AQ	CA	L	CC	GI	Commentary/recommendation
<p>place and speed; streetscape; pedestrian and cyclist environment and carriageway conditions.</p> <p>Such measures shall include closer proximity of buildings, narrow carriageways, wide footpaths, carefully considered cycle lanes/tracks, reduced visibility splays, on-street parking, tighter corner radii, shared surfaces, frequent and carefully considered crossing points and horizontal and vertical elements etcetera. These measures shall be fully incorporated to negate the need for retrofitted traffic calming measures. Horizontal and vertical measures shall also be utilised at transition zones between Development Areas and gateway locations along Link Streets and Arterial Streets at the edges of the SDZ lands.</p> <p>Existing junctions including roundabout junctions along Arterial Streets within and along the edges of the SDZ lands shall be upgraded to signalised traffic junctions in accordance with the Movement and Transport requirements (Section 2.2) of this Planning Scheme. Signalised junctions shall be designed along Arterial and Link Streets for safe and convenient pedestrian and cyclist movement. Toucan crossings designed in accordance with DMURS (2013) shall also be incorporated where strategic and local pedestrian and cycle routes intersect with such higher order streets.</p> <p>Local streets designated as Home Zones shall incorporate carriageways and junctions designed for shared use by pedestrians, cyclists and motorised vehicles. Junctions designated for filtered permeability (pedestrian and cyclist movement only) shall prevent through vehicular traffic movement through the incorporation of appropriate design measures such as street furniture, horizontal and/or vertical measures and landscaping that avoids the use of barriers such as bollards. The use of boundary walls and railings that prevent clear sightlines and passive surveillance through filtered junctions shall be avoided.</p> <p>Pedestrianised streets and spaces designated within and around the Kishoge and Clonburris Urban Centres shall be designed to fully segregate pedestrians from motor vehicular movement.</p>											
	⇅	↑	⇅	⇅	↑	↑	⇅	⇅	↑	⇅	<p>This principle generates positive direct effects on a number of SEOS including population and human health, material assets and air quality.</p> <p>Indirect positive effects are identified for climate change.</p> <p>For other SEOS, mitigation measures which are recommended for the SDZ Planning</p>

2.8 Built Form and Design	BFF	PHH	W	SG	Ma	AQ	CA	L	CC	GI	Commentary/recommendation
											<p>Scheme.</p> <p>Potential negative impacts associated with this principle for example in relation to Biodiversity SEOs would be mitigated by the measures which have been integrated into the Scheme and are identified in Chapter 8 of this SEA ER.</p>
Building Heights and Street Widths General <p>In order to promote place making, urban legibility and visual diversity, varied building heights are supported across the SDZ lands. Appropriate building height to street width ratios shall be incorporated across the SDZ lands in a manner that promotes and maintains a sense of enclosure along streetscapes. This shall be carried out in accordance with the requirements of <i>DMURS</i> (2013), the example street cross sections contained in Section 2.2 (Movement & Transport), the general building heights outlined in Figure 2.8.10 and the detailed requirements set out under Section 3.0 (Development Areas).</p>											
	○	↑	○	○	○	○	○	↑	○	○	<p>This principle generates positive direct effects on a number of SEOS including population and human health, and landscape.</p>
<p>To ensure that building heights respect the surrounding context, new developments immediately adjoining existing one and two storey housing shall incorporate a gradual change in building height with no significant marked increase in close proximity to existing low-rise housing.</p> <p>Roofscapes</p> <p>A variety of roofscapes is encouraged to contribute to the architectural and visual diversity of the SDZ Lands and the quality of streets and spaces. An additional set-back floor above the maximum permissible storey height will be considered where it is shown to make a positive contribution to the streetscape via Design Statement and where there are no adverse effects on amenity, such as an unacceptable loss of daylight or sunlight.</p>											

2.8 Built Form and Design	BFF	PHH	W	SG	Ma	AQ	CA	L	CC	GI	Commentary/recommendation
<p>Landmark Buildings</p> <p>In the interest of place making and improving legibility, Local Landmark Buildings and Landmark Buildings are permissible at key locations that will punctuate both urban centres and designated local nodes.</p> <p>Buildings that exceed the prescribed general buildings heights shall only be provided at these designated landmark locations where an additional 1-2 storeys is permissible for Local Landmark Buildings and 6+ stories (in the case of commercial buildings) to 8+ stories (in the case of residential buildings) are permissible for Landmark Buildings subject to a maximum height of 42 metres in the case of the Clonburris Landmark Building and 34 metres in the case of the Kishoge Landmark Building.</p> <p>Landmark buildings shall be vertically proportioned as towers. Land uses that may be residential, commercial or mixed. Building design as opposed to building height is the key determinant in producing an acceptable Landmark Building and such buildings should be subject to architectural design competition prior to planning application.</p> <p>Landmark Buildings should therefore be designed in a manner that is distinctive from surrounding buildings both in terms of architectural treatment and use of materials. To further emphasise their place-making function, Landmark Buildings shall incorporate high quality public realm treatment in terms of surrounding street planting, furniture, lighting and materials.</p> <p>The design of such buildings shall therefore be based on a coherent design concept that is clearly communicated via a Design Statement and Landscape Plan. In addition to the above and the requirement of Section 2.5.2 of this Planning Scheme, Design Statements for Landmark Buildings shall also analyse and illustrate the impact of the proposed development in relation to its immediate and wider context including views/vistas within and beyond the SDZ lands and in terms of sunlight and daylight effects.</p>											
	O	↑	O	O	O	O	↑	↑	O	O	<p>This principle generates positive direct effects on a number of SEOS including population and human health, in particular. Indirect positive effects on cultural assets</p>

2.8 Built Form and Design	BFF	PHH	W	SG	Ma	AQ	CA	L	CC	GI	Commentary/recommendation
											through landmark buildings carefully designed over time.
2.8.7 Privacy and Overlooking Section 10 of the Urban Design Manual (2009) addresses issues in relation to privacy and overlooking. A separation distance of 22 metres should generally be provided between directly opposing above ground floor windows to maintain privacy between residential schemes.											
	O	↑	O	O	O	O	O	O	O	O	This principle generates positive indirect effects on population and human health SEO.
2.8.8 Sunlight and Daylight The planning scheme provides the broad framework where daylight and sunlight requirements can be met through appropriate block layout and building design. Adherence to the prescribed street proportions and building heights will help ensure that appropriate daylight and sunlight are achieved. On pedestrian streets with closer building front-to-front dimensions, designers will be required to provide all residential development in a dual aspect typology.											
	O	↑	O	O	O	O	O	↑	O	O	This principle generates positive direct effects on population and human health, and landscape.
2.8.9 Energy Efficiency & Resilience The energy efficiency and renewable energy requirements for the construction of new homes and non-residential buildings are primarily addressed in the current Building Regulations Part L (2008 and 2011). Further to these provisions, the Clonburris Energy Masterplan (2017X) appraises a range of options for energy provision (energy efficiency, heating, cooling and electricity etc.) in relation to reaching Nearly Zero Energy Buildings (NZEB) standards and includes a viability and economic analysis. Section 2.9 (Services, Infrastructure and Energy Framework) of this Planning Scheme also sets out measures in relation to optimising water management and waste management while mitigating the effects of flooding and climate change.											

2.8 Built Form and Design	BFF	PHH	W	SG	Ma	AQ	CA	L	CC	GI	Commentary/recommendation
<p>Section 2.9 together with the Clonburris Energy Masterplan should therefore be referenced in relation to ensuring that development adheres to the principles of sustainable development, Green Building and meeting NZEB standards into the future.</p> <p>Further to the Clonburris Surface Water Strategy that accompanies with this Planning Scheme, blue and green roofs will be required for all large scale development proposals in the Clonburris and Kishoge Urban Centres (10 dwellings or more in the case of residential development or development of over 1,000 sq.m in the case of employment or retail development).</p>											
	? ↑	↑	↕ ↑	↑	↑	↑	↕	↑	↑	↕	<p>This principle generates positive direct effects on a number of SEOS including population and human health, material assets, and landscape. Direct effects are also identified through green/blue roof provision in relation to adaptation to climate change and reducing surface run off. In addition, green building and standards increase energy efficiency and contribute to Air Quality SEO.</p> <p>Finally, subject to design, indirect positive effects may be associated with green/blue roofs and biodiversity, flora and fauna. Indirect positive effects are identified for climate change, soil and geology also.</p>
<p>Design of Parking and Loading</p> <p>Car Parking</p> <p>Parking shall not dominate streetscapes and should be carefully considered as part of the overall public realm in terms of layout, surface treatment and landscaping. External parking should primarily be provided on-street in accordance with the recommendations of DMURS (2013).</p>											

2.8 Built Form and Design	BFF	PHH	W	SG	Ma	AQ	CA	L	CC	GI	Commentary/recommendation
<p>All on-street parking shall be broken up, landscaped and designed according to street typology in line with the measures set out under DMURS (2013), the example street typologies contained within Section 2.2 of this Planning Scheme and (where provided adjacent to cycle paths/lanes) the National Cycle Manual (2011).</p> <p>To ensure that it does not dominate streetscapes, on-street parking shall be broken up into a series of bays separated by planted build outs. The number of parking spaces per bay should generally be limited to three parallel spaces (including loading areas) and six perpendicular spaces.</p> <p>Supplementary parking in the form of basement, semi-basement, or courtyard parking will generally be required in medium to higher density areas (50 – 80 dwellings per hectare) unless it can be demonstrated (via a car parking strategy, MMP, workforce travel plan and/or the consideration of reduced parking rates) that parking can be accommodated on-street in accordance with design parameters.</p> <p>Large areas of surface parking will not be permitted within the SDZ Lands. Parking courts should therefore be restricted in size to no more than 40 spaces and should also be well landscaped and subject to a landscape plan.</p> <p>A Park and Ride facility with associated disabled, bus, taxi and cycle parking facilities has been built at the Clondalkin-Fonthill Railway Station and a similar facility has been permitted at the Kishoge Railway Station under the Kildare Route Project Railway Order. In the interest of the vitality and viability of both urban centres and place making, both Park and Ride facilities may be incorporated into mixed use building forms.</p> <p>Multi storey communal parking blocks may be acceptable at the edges of both urban centres to serve residents, employees, shoppers, visitors as well as accommodating the designated Park and Ride Facilities particularly at the Clonburris Urban Centre where car free development is promoted. Any multi-storey communal and semi-basement car parking within the SDZ Lands should be wrapped by active uses and shielded from the public realm or placed over active uses and designed to make a positive contribution to the public realm. Basement car parks that protrudes above the ground level as a street interface will generally not be acceptable.</p>											
	○	↑	⇅	○	↑	↑	○	⇅↑	↑	⇅	This principle generates positive direct effects on a number of SEOS including

2.8 Built Form and Design	BFF	PHH	W	SG	Ma	AQ	CA	L	CC	GI	Commentary/recommendation
											population and human health, material assets and air quality. For other SEOS, mitigation measures which are recommended for the SDZ Planning Scheme.
Loading Loading and servicing facilities should be provided through a combination of on-street bays and in-curtilage docks designed in accordance with DMURS (2013). On-street loading bays should be spread along and immediately adjacent to all retail and commercial streets and balanced with on-street parking. These bays should be time limited, so that they revert to on-street parking bays or pedestrian paths outside of delivery hours. Loading docks should be provided within all major retail anchors. To mitigate the impact of loading docks on the street environment, loading docks should be: <ul style="list-style-type: none"> • Accessible from Link Streets; • Integrated with entrances to car parks; • No greater than 4 metres in width; • Designed for in-curtilage turning movements so that all larger vehicles enter and exit in a forward motion. 											
	O	↑	O	O	O	O	O	↑	O	O	Minor effects associated with this measure although they will enhance Landscape SEO and indirect positive effects for pedestrians also.
2.8.11 Street Planting, Furniture and Materials Further to the requirements of Section 2.8.2, a detailed Landscape Plan that specifies and illustrates proposed treatment of all streets and spaces including street furniture, lighting, planting and surface treatment etcetera shall be submitted with all medium to large scale development proposals in Clonburris. Street Planting											

2.8 Built Form and Design	BFF	PHH	W	SG	Ma	AQ	CA	L	CC	GI	Commentary/recommendation
<p>Street trees should be considered as an integral part of the street environment in accordance with <i>DMURS</i> (2013) with the size of species selected proportionate to the width of the street. Larger species should therefore be planted along Arterial and Link Streets and smaller species along Local Streets (see Fig. 2.8.13 for example).</p> <p>Streets should be generously planted at frequent intervals to soften the impact of parking and strong building frontages at intervals of 14 – 20 metres. Street trees should be planted in areas such as medians, verges and build outs. Street trees should also be augmented by planting within privacy strips along residential streets. In the interest of biodiversity and place making, reduced spacing between street trees should be considered where appropriate and achievable.</p> <p>In order to mitigate against noise and air pollution, double and triple planting of trees in medians and verges shall be incorporated along wide and busy streets such as Arterial and Link Streets.</p>											
	⇅	↑	⇅	↑	↑	↑	⇅	⇅	↑	⇅	<p>This principle generates positive direct effects on a number of SEOS including population and human health, material assets, landscape and air quality.</p> <p>Longer term positive effects associated with tree planting, noise and air pollution measures will contribute positively to biodiversity and green infrastructure.</p> <p>Mitigation measures are proposed in relation to the interval of tree planting as shown in green font above.</p>
<p>Materials and Finishes</p> <p>In line with the recommendations of <i>DMURS</i> (2013), a hierarchical approach to the application of materials and finishes should be taken in relation to the design of streets. The palette of finishes and materials should therefore be altered according to street hierarchy and importance of place.</p> <p>More robust and higher quality materials such as natural stone, concrete block paving or imprinted asphalt should be used within both urban centres.</p> <p>Robust surfaces and/or changes in colour should also be used at gateways into the SDZ lands and transitional zones between Development Areas.</p>											

2.8 Built Form and Design	BFF	PHH	W	SG	Ma	AQ	CA	L	CC	GI	Commentary/recommendation
<p>The use of standard materials such as macadam/asphalt should be confined to the carriageways of streets with moderate design speeds such as Link and Arterial Streets. Where lower design speeds are desirable along Local Streets and within Urban Centres, changes in the colour and/or texture of the carriageway should be used.</p> <p>For shared surface streets such as homezones, material and finishes such as paving or imprinted materials should be used to slow traffic and indicate that the carriageway is an extension of the pedestrian domain. Similar finishes shall also be utilised for pedestrianised streets</p>											
	↕	↑	↕	↑	↑	↑	↕	↕	↑	↕	<p>Minor effects associated with landscape and population and human health in relation to design measures.</p> <p>Potential negative impacts associated with this principle for example in relation to Biodiversity SEOs would be mitigated by the measures which have been integrated into the Scheme and are identified in Chapter 8 of this SEA ER.</p>
<p>Street Furniture</p> <p>Landscape Plans shall seek to limit clutter. The provision of street furniture such as public art, lighting, bollards, seating and cycle parking must therefore be considered as part of the overall design of the street and should be considered as part of a wider strategy.</p> <p>Street furniture should be placed within a designated zone such as a verge and items should be selected from a limited palette that promotes visual cohesion. Further details in relation to street furniture including the design of good quality street lighting is provided in DMURS (2013).</p> <p>Boundary Treatment</p> <p>Further to the requirements of Section 2.8.4 (Topography, Street Frontage and Urban Grain) of this Planning Scheme, boundary treatment to front gardens and privacy strips for residential schemes should be unobtrusive and should allow for good passive surveillance. Such boundary treatment may comprise low planting, low masonry walls, low timber fencing or low metal railings with heights of no more than 1.2 metres.</p>											

2.8 Built Form and Design	BFF	PHH	W	SG	Ma	AQ	CA	L	CC	GI	Commentary/recommendation
<p>Rear boundaries between gardens should be demarcated appropriately and robustly with maximum heights of 2 metres. Timber fencing is promoted between rear gardens with the exception of those that interface with the public realm (streets and public spaces) where boundary treatment shall comprise appropriately rendered masonry walls with a minimum height of 1.8 metres and maximum height of 2 metres.</p> <p>Rear boundaries to communal gardens/spaces should also be demarcated through appropriate hedging or fencing. The use of masonry walls as boundaries to these spaces is generally not promoted.</p>											
	O	↑	O	O	O	O	O	↑⇅	O	O	Cumulatively these measures will avoid visual clutter and promote an overall comprehensive design approach to street furniture and boundary treatment. Positive effects on Landscape and Population and Human Health SEOs.

2.9 Services, Infrastructure and Energy Framework

2.9 Services, Infrastructure and Energy Framework	BFF	PHH	W	SG	Ma	AQ	CA	L	CC	GI	Commentary/recommendation
<ul style="list-style-type: none"> To prioritise the delivery of high quality services, utilities infrastructure, and sustainable urban surface water drainage. To pioneer the development of energy networks at the Clonburris and Kishogue urban centres , and explore potential for other low carbon energy opportunities at Clonburris 											

2.9 Services, Infrastructure and Energy Framework	BFF	PHH	W	SG	Ma	AQ	CA	L	CC	GI	Commentary/recommendation
	↕/↑	↑	↑	↕/↑	↑	↑	↕	↑	↑	↑	<p>The surface water drainage strategy prepared as part of the SDZ Planning scheme contributes to material assets (flood risk) as well as protecting water quality through reducing and managing run off.</p> <p>In turn positive effects are identified for Green Infrastructure and some biodiversity SEOS through the identification of additional ponds around the scheme.</p> <p>High quality utilities infrastructure will contribute to material assets SEOS around water supply, wastewater and heat energy networks and low carbon energy contribute to positive effects on Air Quality, Climate change and population and human health; indirect positive effects on biodiversity, soil and geology also with this principles in relation to reduction of pollution (diffuse and point sources).</p> <p>For other SEOs mitigation measures, the planning scheme provide robust protection.</p>

2.9 Services, Infrastructure and Energy Framework	BFF	PHH	W	SG	Ma	AQ	CA	L	CC	GI	Commentary/recommendation
<p>The infrastructure, services and energy framework is based on a number of key principles:</p> <ul style="list-style-type: none"> To set out a comprehensive evidence based approach to services, infrastructure and energy requirements and opportunities at Clonburris; To ensure that Infrastructure and services optimise connection to existing on site water main, foul and surface water pipe networks and resources; To co-ordinate the delivery of infrastructure into key routes and corridors and the sharing of trenches to common infrastructure, to optimise road space, and to minimise potential impacts on the public realm arising from ongoing maintenance works; To mitigate the risk of flooding by integrating a comprehensive and high quality Sustainable Urban Drainage System (SUDs) into the design of new developments and maximising opportunities to incorporate rainwater attenuation measures into public realm, parks and open spaces; To promote demand management and sustainable supply systems for all services; To progress a range of low carbon and renewable energy opportunities at Clonburris and demonstrate leadership in their development and realisation, from strategic site options to individual block level technologies, in accordance with the recommendations of the Clonburris Energy Masterplan; To enable connection and high quality use of telecommunications infrastructure by a range of parties, promoting Clonburris as a connected place; To provide for gas infrastructure requirements in partnership with energy providers and other stakeholders; To maximise best practice for waste minimisation, reuse and recycling during demolition, excavation, construction and occupation of development; and To explore the use of pneumatic waste collection system for new developments, in particular higher density development areas at Fonthill and Kishogue. 											
	↕	↑	↕	↕↑	↑	↑	↕	↕	↑	↕/ ↑	<p>These principles contribute to positive direct effects across a range of SEOS in particular:</p> <p>Material assets (waste management); water (flood risk and water quality, climate change (adaptation) and energy. Other direct</p>

2.9 Services, Infrastructure and Energy Framework	BFF	PHH	W	SG	Ma	AQ	CA	L	CC	GI	Commentary/recommendation
											<p>positive effects relate to population and human health in the avoidance of hazards and nuisances as well as green infrastructure and surface water attenuation.</p> <p>The requirement for an evidence based approach to services should assist in maximising opportunities in an efficient manner.</p> <p>For other SEOs mitigation measures through the planning scheme provide protection.</p> <p>The provision of infrastructure to serve the SDZ Planning Scheme may require development activities outside these areas for example, wastewater or water infrastructure within the Greater Dublin Region; this could conflict with a number of SEOS such as soil and geology, water quality, biodiversity but should be sufficiently addressed through appropriate level consent procedures and those</p>

2.9 Services, Infrastructure and Energy Framework	BFF	PHH	W	SG	Ma	AQ	CA	L	CC	GI	Commentary/recommendation
											measures included in national/regional plans, policies and programmes such as Irish Water Services Strategic Plan SEA and AA.
2.9.2 Water Supply <p>Water infrastructure development within the SDZ must align with Irish Water’s Strategic Network Development Plans for the SDZ (refer to Figure 2.9.1 Indicative Strategic Water Development Plans. Note that these are subject to change based on finalisation of proposed finished ground levels etc). Prior to the commencement of any development within the SDZ, landowners / developers shall prepare detailed water services plans for the SDZ and agree these plans with Irish Water and South Dublin County Council. Such plans must align with Irish Water’s Strategic Network Development Plans. Such plans must also comply with Irish Water standard details and codes of practice. Connection of infrastructure to a public water services network is subject to a connection agreement with Irish Water.</p> <p>In demand management terms, district water monitoring will be promoted per 750 residential units. Furthermore, the specification of water efficient appliances is promoted and shall be identified as part of Demand Management Plans submitted as part of planning applications at Clonburris. The use of greywater as a non-potable water supply in domestic situations, although not a mandatory requirement, is promoted as best practice in non-residential uses. This shall be also be a requirement for all non-potable water consumption, particularly in commercial units. All non-residential proposals shall provide a method statement for the on-site storage, use and management of grey water. With regard to hydraulic pressure, buildings of thee storeys and higher will be required to provide balancing tanks and booster pumps as part of planning applications</p>											
	↕	↑	↕	↕↑	↑	○	↕	↕	↕	↕	Positive effects on water supply and quality arising from these measures in addition to indirect positives on population and human health. Measures from Irish Water Strategic Plan are of importance in relation to this and planning scheme mitigation measures.

2.9 Services, Infrastructure and Energy Framework	BFF	PHH	W	SG	Ma	AQ	CA	L	CC	GI	Commentary/recommendation
2.9.3 Foul Water Drainage Wastewater infrastructure development within the SDZ must align with Irish Water's Strategic Network Development Plans for the SDZ (refer to Figure 2.9.2 Indicative Strategic Wastewater Development Plans. Note that these are subject to change based on finalisation of proposed finished ground levels etc). Prior to the commencement of any development within the SDZ, landowners / developers shall prepare detailed wastewater services plans for the SDZ and agree these plans with Irish Water and South Dublin County Council. Such plans must align with Irish Water's Strategic Network Development Plans. Such plans must also comply with Irish Water standard details and codes of practice. Connection of infrastructure to a public wastewater services network is subject to a connection agreement with Irish Water.											
	↕	↑	↕	↕↑	↑	↑	↕	↑	↑	↕/ ↑	Impacts are similar to those identified above.
2.9.5 Surface Water and Sustainable Urban Drainage System (SUDS) The key principles of surface water management at Clonburris are set out as follows: <ul style="list-style-type: none"> • Manage surface water runoff at source in order to prevent or reduce surface water flows; • Manage water on the surface to intercept flows and direct them to areas designed to treat, store and discharge flows away from residential dwellings, businesses and transportation networks, where disruption and flooding could occur; • Develop a high quality Sustainable Urban Drainage System (SUDs) integrated with public realm and public open space where feasible, to provide high quality and attractive 'green and blue' corridors, features and focal points with the SDZ landscape, which can also enhance local ecology and biodiversity; • Effective operation and maintenance of SUDs measures, to ensure that such systems are operating to their designed capacity; • Account for climate change and any changes to the amount of impermeable areas over the design life of the development, in accordance with the Greater Dublin Strategic Drainage Study (and any future updates to this Study). 											
	↕/↑	↑	↑	↑	↑	↑	↕	↑	↑	↕/ ↑	These principles contribute to positive direct effects across a range of SEOS in

2.9 Services, Infrastructure and Energy Framework	BFF	PHH	W	SG	Ma	AQ	CA	L	CC	GI	Commentary/recommendation
											<p>particular:</p> <p>Material assets - water (flood risk and water quality and climate change (adaptation).</p> <p>Other direct positive effects relate to population and human health in the avoidance of hazards and nuisances as well as green infrastructure and surface water attenuation.</p> <p>Indirect positive effects in relation to biodiversity, soil and geology, air quality and water quality through SUDs provision and incorporation to wider green infrastructure network.</p>
<p><i>Character of the SUDS System</i></p> <p>It is an objective of this SDZ Planning Scheme to ensure that SUDS measures should be fully implemented on all sites to achieve two litre per second per hectare runoff rates, unless otherwise agreed with SDCC.</p> <p>A detailed Surface Water Management Plan (SWMP) is required to be prepared by the landowners/developers and agreed with SDCC in advance of any development on the SDZ lands. This is required to be prepared in accordance with the Surface Water Strategy, in order to achieve strategic surface water management objectives and ensure a high quality and viable Sustainable Urban Drainage System for the entire SDZ lands.</p> <p>All SUDS proposals within the SDZ should comply with the Greater Dublin Strategic Drainage Study and the Sustainable Urban Drainage Manual C753. A Surface Water Audit should also be submitted with each application for development within the SDZ, detailing measures to be carried out at both</p>											

2.9 Services, Infrastructure and Energy Framework	BFF	PHH	W	SG	Ma	AQ	CA	L	CC	GI	Commentary/recommendation
construction and operation stages of all development proposals.											
	↕/↑	↑	↕/↑	↕/↑	↑	↑	↕	↑	↑	↕/↑	Impacts are similar to those identified above.
2.9.6 Gas Future provision for infrastructure requirements for gas supply will be made in consultation with relevant energy providers and other stakeholders.											
	↕	↕	↕	↕	↕	↕	↕	↕	↕	↕↑	Impacts likely to be addressed through planning scheme measures as well as appropriate consent procedures.
2.9.7 Telecommunications Infrastructure The provision of IT, broadband internet and high speed telecommunications infrastructure to the SDZ area as a whole will enable activities such education uses, community facilities, home office working and commercial business to prosper. To enable these opportunities, it is proposed to develop a data infrastructure spine comprising a network of fibre optic and broadband capacity cables routed in accordance with the primary and secondary street hierarchy structure. It is proposed to locate the services infrastructure with the proposed street hierarchy structure. The ducting of all services should be located to the appropriate depth standards, and not preclude the opportunity of street tree planting and location of street furniture. Every opportunity should be taken to identify occasions when sharing of road space may be appropriate. This will include initiatives such as trench sharing. Trench sharing can be effective in reducing disruption from ongoing maintenance and street works, and optimise available space for services. Care should be taken to ensure that the balance is achieved between reducing the number of occasions that small works take place and increasing the scale of combined works.											
	↕	↑	↕	↕	↑	↑	↕	↑	↑	↕/↑	Positive impacts associated with population and human health and promotion of local economic activity can reduce demand for

2.9 Services, Infrastructure and Energy Framework	BFF	PHH	W	SG	Ma	AQ	CA	L	CC	GI	Commentary/recommendation
											<p>transport generally which can create positive indirect effects on material assets SEOS as well as climate change and air quality.</p> <p>Sharing of road space reduces visual clutter and interruption to public realm so direct positive effects on landscape SEOS.</p> <p>Other impacts would be addressed through mitigation measures in the planning scheme.</p>
<p>2.9.8 Energy and Climate change mitigation</p> <p>Energy Efficiency in New Buildings</p> <p>It is anticipated that by 2020 all new buildings in Clonburris will be required to be constructed to the Nearly Zero Energy Buildings (NZEB) standard, in accordance with the EU Energy Performance in Buildings Directive (EPBD). This standard will ensure that new buildings are constructed to a high level of thermal efficiency, with a significant contribution of renewable energy on site. Development proposals at Clonburris should have regard to the Towards nearly Zero Energy Buildings in Ireland – Planning for 2020 and Beyond, (DECLG), which promotes the increase of near Zero Energy Buildings in Ireland.</p> <p>An Energy Centre is required at the Clonburris and Kishogue hubs to accommodate infrastructure associated with the local heat network, such as a Gas or Biomass based CHP plant.</p> <p>All major developments within the Clonburris and Kishogue urban centres should be designed to be able to connect to a local heat network in the future. This means that such developments have the ability to be connected to a network if / when such a network becomes available in the future, rather than necessarily determining connection at the time of construction. The Development Agency will support the development of decentralised energy networks</p>											

2.9 Services, Infrastructure and Energy Framework	BFF	PHH	W	SG	Ma	AQ	CA	L	CC	GI	Commentary/recommendation
at Clonburris in principle, subject to meeting wider policy requirements, including Design.											
	↕	↑	↕	↕	↑	↑	↑	↕	↑	↕/ ↑	Positive direct impacts identified for climate change, population and human health, air quality in particular.
Electricity Infrastructure No development shall be carried out at this location until such time as the undergrounding of the overhead powerlines has been carried out. Having regard to that portion of the SDZ lands to the east of the Grange Castle Road, where planning permission has not currently been granted for the undergrounding of the existing 220Kv overhead powerlines, the Planning Scheme has been designed to assume the future undergrounding of these overhead powerlines. Until such time as the undergrounding of the overhead powerlines to the east of the Grange Castle Road has been permitted and has taken place, Having regard to development within proximity of these powerlines, all buildings, other than temporary buildings (such as site compounds) shall not be constructed within 30 metres either side of the 220Kv powerlines that traverse the SDZ site lands. No new development shall occur within the existing overhead powerline easement area until such time as the undergrounding of the powerlines has occurred. Provision for electricity infrastructure will be made in consultation with ESB Networks, South Dublin County Council and other stakeholders.											
	↕	↑	↕	↕	↕	↕	↕	↑	↕	↕/ ↑	Removal of powerlines create positive effects on landscape SEOs; other impacts would be addressed through standard mitigation measures as outlined in the Planning Scheme.
2.9.9 Waste Management and Recycling Facilities The development and occupation of the new community at Clonburris will result in significant quantities of waste. Accordingly, waste reduction and recycling needs to be fully considered and implemented in the design construction, and operational phases of the Planning Scheme. The design phase is a											

2.9 Services, Infrastructure and Energy Framework	BFF	PHH	W	SG	Ma	AQ	CA	L	CC	GI	Commentary/recommendation
<p>critical stage where waste can be designed out of proposed new developments, as well as on site processes. The recycling of waste shall be encouraged in accordance with the <i>Eastern Midlands Region Waste Management Plan 2015- 2021 (EMRWMP)</i>. With regard to new development at Clonburris, layouts should be designed to incorporate refuse collection points, bring centres and make provision for recycling and composting when required, at suitable locations. The following criteria will be considered in the assessment of the design and siting of waste facilities and bring facilities:</p> <ul style="list-style-type: none"> The location and design of any refuse storage or recycling facility should ensure that it is easily accessible both for residents and/or public and for bin collection, be insect and vermin proofed, will not present an odour problem, and will not significantly detract from the residential amenities of adjacent property or future occupants, Provision for the storage and collection of waste materials shall be in accordance with the guidelines for waste storage facilities in the relevant Regional Waste Management Plan and the design considerations contained in Section 4.8 and 4.9 of the DECLG Design Standards for New Apartments (2015). Refuse storage for houses should be externally located, concealed/covered and adequate to cater for the size and number of bins normally allocated to a household. For terraced houses the most appropriate area for bins to be stored is to the front of the house, which should be located in well-designed enclosures that do not detract from visual amenity, and Access to private waste storage in residential schemes should be restricted to residents only. <p>To facilitate a high level of recycling within the Clonburris SDZ, a network of facilities are required for recycling. The Scheme provides for a network of bring infrastructure (e.g. civic amenity facilities, bring banks). Bring bank facilities will generally be required at appropriate locations in the following developments:</p> <ul style="list-style-type: none"> In conjunction with large scale residential and mixed use developments, proposals should provide recycling facilities to serve residents and in some appropriate locations, the wider community In conjunction with significant new commercial developments. 											

2.9 Services, Infrastructure and Energy Framework	BFF	PHH	W	SG	Ma	AQ	CA	L	CC	GI	Commentary/recommendation
<p>Given the development at higher densities in certain parts of the site, in particular around the Fonthill and Kishogue urban centres, there is potential for innovative solutions to waste disposal and collection systems, such as pneumatic waste collection systems. These waste systems use vacuum technology to take waste and recyclable materials to a centralised storage point. Pneumatic waste systems also minimise the need for waste bins and maximise the potential for recycling by residents, businesses and other premises, whilst also increasing the general attractiveness of the street environment. The provision of pneumatic waste collection systems are encouraged at the Clonburris and Kishogue urban centres.</p>											
	○	↑	○	⇅↑	↑	↑	⇅	○	↑	○	Direct positive effects in relation to waste management SEOs and reduction in landfill from planning scheme creates positive indirect effects in greenhouse gas emission reductions.
2.9.10 Topography <p>Development on the SDZ lands will need to respond to level differences at certain locations due to local topography and the current road infrastructure. As per Section 2.8.3, gradients on all Link Streets and Local Streets should be as gradual as possible with a gradient of between 1 in 33 (or 3%) and 1 in 20 (or 5%) targeted. The raising of floor levels to correspond with finished street levels, utilising car parking, plant services or storage etc and the engineering requirements to raise the level of strategic services to implement the Surface Water Strategy (and subsequent Surface Water Management Plan), need to be clearly demonstrated by relevant planning applications. At locations where level differences need to be addressed, planning applications are required to submit detailed topographical information, drawings and cross sections and detail street, floor and service levels.</p>											
	○	↑	↑	⇅↑	↑	↑	⇅	○↑	↑	○	Detailed information at project level should address this issue and align more closely with SUDs provisions. Existing mitigation measures including addressing invasive

2.9 Services, Infrastructure and Energy Framework	BFF	PHH	W	SG	Ma	AQ	CA	L	CC	GI	Commentary/recommendation
											species control and management will apply where additional fill is brought onto the SDZ lands.
2.9.11 Aerodromes <p>The majority of the SDZ lands are located within the Inner Horizontal Surface of Casement Aerodrome and an eastern portion of the lands are located within the Outer Approach Area to the Aerodrome. Casement Aerodrome, being a military aerodrome, does not fall under the control of the Irish Aviation Authority, but the ICAO Standards and Recommended Practices are applied as policy by the Department of Defence at Casement Aerodrome.</p> <p>A large portion of the lands are located within the Dublin Airport Outer Safeguarding Boundary. All relevant applications for development within the Outer Safeguarding Boundary will be referred to the Dublin Airport licensee.</p>											
			○	○	○	○	○	○	○	○	Applications will assessed at project level. No interaction with SEOs at this point
2.9.12 Noise <p>Development proposals at Clonburris shall have regard to the Dublin Agglomeration Environmental Noise Action Plan 2013-2018, with particular regard to development adjacent to major road and rail transport corridors, with a view to reducing noise from new sources and to identify and protect areas of low sound levels. Development proposals with the potential to give rise to significant noise impacts may require a Noise Impact Assessment and mitigation plan to minimise noise disturbances and protect the amenities of the area.</p>											
	↑	↑	○	○	↑	○	○	○	○	○	Positive effects for Population and human health directly and long term; indirect positive effects on biodiversity, flora and fauna also.
2.9.13 Construction Environmental Management Plans <p>A Construction Environmental Management Plan (CEMP) shall be prepared in advance of the physical elements proposed as part of the Planning Scheme and will be implemented throughout. Such plans shall incorporate relevant mitigation measures indicated below.</p>											

2.9 Services, Infrastructure and Energy Framework	BFF	PHH	W	SG	Ma	AQ	CA	L	CC	GI	Commentary/recommendation
<ul style="list-style-type: none"> SDCC will be informed in advance of construction activities in sensitive environmental areas. SDCC will be informed of all construction or maintenance works located within the vicinity of pNHAs (Grand Canal) or in the vicinity of watercourses linked to these designated conservation areas. Monitoring of works in these locations will be undertaken and the results of monitoring will be provided to SDCC. Where works are undertaken in/adjacent to sensitive environmental receptors all construction/maintenance staff will be inducted by means of a “Tool-box Talk” which will inform them of environmental sensitivities and the best practice to be implemented to avoid disturbance to these receptors. All construction and maintenance works will be undertaken in accordance with the following guidance documents: <ul style="list-style-type: none"> Inland Fisheries Ireland’s Requirements for the Protection of Fisheries Habitat during Construction and Development Works. CIRIA (Construction Industry Research and Information Association) Guidance Documents. Control of water pollution from construction sites (C532). Control of water pollution from linear construction projects: Technical Guidance (C648). Control of water pollution from linear construction projects: Site Guide (C649). Environmental Good Practice on Site (C692). NRA Guidance Documents. Guidelines for the Crossing of Watercourses during the Construction of National Road Schemes. Guidelines for the Management of Noxious Weeds and Non-Native Invasive Plant Species on National Roads. Guidelines for the Protection and Preservation of Trees, Hedgerows and Scrub Prior to, during and Post Construction of National Road Schemes. Any excavations and/or vegetation removal shall be minimised during construction and/or maintenance works. 											

2.9 Services, Infrastructure and Energy Framework	BFF	PHH	W	SG	Ma	AQ	CA	L	CC	GI	Commentary/recommendation
<ul style="list-style-type: none"> Excavated material will not be stored immediately adjacent to watercourses. Disturbance to natural drainage features should be avoided during the construction and/or maintenance of routes. Construction machinery should be restricted to public and or site roads. As a general rule machinery should not be allowed to access, park or travel over areas outside the footprint of proposed walking/ cycling routes. During route maintenance no construction activities should be undertaken at watercourse crossing in wet weather conditions. Suitable prevention measures should be put in place at all times to prevent the release of sediment to drainage waters associated with construction areas and migration to adjacent watercourses, to reduce erosion and silt-laden runoff, create, where possible, natural vegetation buffers and divert runoff from exposed areas, control the volume and velocity of runoff, and convey that runoff away from. Where necessary drainage waters from construction areas should be managed through a series of treatment stages that may include swales, check dams and detention ponds along with other pollution control measures such as silt fences and silt mats. Where vegetation removal associated with treelines, hedgerows, individual mature trees, scrub or woodland is required, this shall only be undertaken outside the breeding bird season, between March and August inclusive Where extensive areas of ground are to be exposed during route construction or maintenance dust suppression should be undertaken during periods of dry weather. All chemical substances required during construction and/or maintenance works will be stored in sealed containers. Any refuelling or lubrication of machinery will not be undertaken within 50m of a watercourse Spill kits will be required on site during construction and/or maintenance works. Ensure non-native, invasive species do not occur at construction/ maintenance areas, or if occurring, are not spread as a result of works. The NRA Guidance on invasive species, outlined above will be adhered to as well as the Invasive Species Management and Control Plan (See Section 2.11 of the Planning Scheme). 											

2.9 Services, Infrastructure and Energy Framework	BFF	PHH	W	SG	Ma	AQ	CA	L	CC	GI	Commentary/recommendation
<ul style="list-style-type: none"> Disseminate information on sensitive ecological receptors, such as sensitive habitats, breeding birds etc. occurring adjacent to or in the wider area. This information will aim to educate recreational users on the conservation status and sensitivities of such receptors to encourage responsible usage of routes. <p>CEMPs typically provide details of intended construction practice for the proposed development, including:</p> <ul style="list-style-type: none"> location of the sites and materials compound(s) including area(s) identified for the storage of construction refuse. location of areas for construction site offices and staff facilities. details of site security fencing and hoardings. details of on-site car parking facilities for site workers during the course of construction. details of the timing and routing of construction traffic to and from the construction site and associated directional signage. measures to obviate queuing of construction traffic on the adjoining road network. measures to prevent the spillage or deposit of clay, rubble or other debris. alternative arrangements to be put in place for pedestrians and vehicles in the case of the closure of any public right of way during the course of site development works. details of appropriate mitigation measures for noise, dust and vibration, and monitoring of such levels. containment of all construction-related fuel and oil within specially constructed bunds to ensure that fuel spillages are fully contained; such bunds shall be roofed to exclude rainwater. disposal of construction/demolition waste and details of how it is proposed to manage excavated soil. a water and sediment management plan, providing for means to ensure that surface water runoff is controlled such that no silt or other pollutants enter local water courses or drains. details of a water quality monitoring and sampling plan. 											

2.9 Services, Infrastructure and Energy Framework	BFF	PHH	W	SG	Ma	AQ	CA	L	CC	GI	Commentary/recommendation
<ul style="list-style-type: none"> if peat is encountered - a peat storage, handling and reinstatement management plan. measures adopted during construction to prevent the spread of invasive species (such as Japanese Knotweed). appointment of an ecological clerk of works at site investigation, preparation and construction phases. 											
	↑	↑	○	○	↑	○	○	○	○	○	

2.10 Landscape and Open Space-

2.10 Landscape and Open Space	BFF	PHH	W	SG	Ma	AQ	CA	L	CC	GI	Commentary/recommendation
<p>Overarching principle</p> <p>To provide attractive, interesting and well used outdoor spaces using the latest place making and urban design principles, creating a pedestrian-centred environment with active, inviting public space, parks and private gardens</p> <p>The key principles for the Landscape, Parks and Open Space Section are as follows</p> <ul style="list-style-type: none"> • Provide a hierarchy of high quality and multi-functional open spaces including, strategic spaces, local parks, urban spaces and strategic amenity routes; • To allow the movement network to connect to and through open spaces by providing safe, well-overlooked and accessible routes; • To provide appropriate space for health and well-being, required to meet the recreational needs of the new population of Clonburris through the provision of adequate walking and cycling facilities and a diversity of green spaces for active and passive recreation; and • Provide recreation facilities and open spaces that are capable of accommodating a range of community sport and recreation needs and use by the community at varying times including after school hours. 											
	O	↑	O	↑	↑	↑	O	↑	O	O	These principles positively relate to the Population and Human health SEOs directly; indirect positive effects are also identified for material assets, soil and geology, air quality and landscape SEOs
<p>2.10.2 Proposed Open Spaces</p> <p>The proposed open spaces represent important interfaces between existing and proposed neighbourhoods. Key requirements for these open spaces shall include pedestrian and cyclist connectivity through and between the parks, adjacent neighbourhoods and public transport.</p>											

2.10 Landscape and Open Space	BFF	PHH	W	SG	Ma	AQ	CA	L	CC	GI	Commentary/recommendation
It is essential that the edge of the open spaces and central walkways are designed to be well lit, well overlooked, legible and accessible. In addition, it is a key requirement that the amenity of existing landscape assets within the proposed parks, including the Grand Canal, habitats and historic features are enhanced and where appropriate, integrated into the landscape structure.											
	↑	↑	↑	↑	↑	○	○	↑	○	↑	Positive effects across a range of SEOS as the key requirement to enhance habitats and historic features. Positive effects for Population and human health, biodiversity, material assets, soil and geology and landscape and green infrastructure. Mitigation measures identified previously for Grand Canal and ecological resources particularly in relation to lighting will apply also.
It is proposed to capitalise on the lands generous SDZ Canal frontage however it is noted that access to the Canal on the northern side is currently constrained. Pedestrian access to the northern tow path of the Grand Canal shall be carefully managed with a limited number of access points to ensure the continuity of the character of the northern towpath as an ecological corridor Appropriate access to the northern tow path of the Grand Canal shall be carefully designed, in particular, access to areas of greatest sensitivity shall be avoided. (See Section 2.11 Biodiversity & Natural Heritage also).											
	↕	○	○	○	○	○	○	○	○	○	Mitigation recommended as regards limited access point to the northern towpath as its function as a primary ecology corridor is significant.

2.10 Landscape and Open Space	BFF	PHH	W	SG	Ma	AQ	CA	L	CC	GI	Commentary/recommendation
<p>Parks and Landscape Strategy</p> <p>A Parks and Landscape Strategy shall be prepared by all the developers, for the entire SDZ lands and shall be submitted to and agreed in writing with the Planning Authority prior to the commencement of development on the lands. The Parks and Landscape Strategy shall be prepared by a suitably qualified Landscape Architect in conjunction with a suitably qualified Ecologist and shall include the following</p> <ul style="list-style-type: none"> Overarching design details for the strategic open spaces, local parks and squares, urban spaces and squares, Strategic Amenity Routes and local links. Details of Active and passive recreation provision on the lands A Biodiversity Management Plan, prepared by a qualified ecologist and be guided by relevant best practice guidelines and established techniques for habitats present on the SDZ Planning lands. The Biodiversity Management Plan shall incorporate the following measures The preservation of existing hedgerows, treelines, woodland, scrub and other semi-natural habitats where possible High value historical boundary hedgerows shall be retained and management details included; in particular the Barony hedgerows. Where hedgerows, treelines woodland and other semi-natural habitats are to be retained within the SDZ Planning Scheme lands, details of their management and protection should be provided in a Habitat Management Plan. Opportunities to enhance the biodiversity value of SUDs measures where relevant should be included in habitat management plans. 											
	↕	↑	↑	↑	↑	↑	↑	↑	↑	↑	The preparation of a landscape strategy at initial plan implementation stage will assist in providing a comprehensive, landscape level approach and assessment of landscape resources, design as well as integrating biodiversity considerations due to additional mitigation measures being recommended.

2.10 Landscape and Open Space	BFF	PHH	W	SG	Ma	AQ	CA	L	CC	GI	Commentary/recommendation
											Positive effects across a range of parameters both direct and indirect.
The hierarchy of open spaces is as follows: <ul style="list-style-type: none"> • Strategic open spaces; • Local parks and squares; and • Urban spaces. <p>These spaces shall be connected within an integrated network at strategic and local levels with Strategic amenity routes; and Local links between open spaces.</p>											
	↑	↑	O	O	↑	O	O	↑	O	↑	As above connectivity between open spaces will support ecological connectivity subject to adherence to elements of the Landscape Strategy.
Table 2.10.1 Design Criteria for open spaces											
Landscape element	Objective		Components								
Strategic open spaces	To incorporate major strategic corridors such as the Canal and Railway. To provides major parks with district-wide functions. To provide for larger scale active recreation To provide for a range of passive amenity. To include important SUDS		Sports fields. Amenity routes. SUDS features such as major detention ponds and swales. Controlled access areas for biodiversity enhancement and protection. Playgrounds and play areas. Mass planting in lines or drifts to enhance definition and								

2.10 Landscape and Open Space	BFF	PHH	W	SG	Ma	AQ	CA	L	CC	GI	Commentary/recommendation
		functions. To protect and enhance biodiversity hubs. To provide for a range of childrens play. To assist in area-wide legibility and placemaking.				functional areas. Retention and enhancement of selected hedgerow.					
	↑	↑	↑	↑	↑	↑	↑	↑	↑	↑	Objectives for strategy open spaces and components include a number of features which create positive long term effects on Biodiversity, Water, Green Infrastructure, Landscape, Cultural assets and Population and Human health SEOs; with positive indirect effects on soil and geology, climate change .
An extension to the Griffeen Valley Park The Griffeen Valley Park shall be extended southwards to the Grand Canal to provide a high quality flagship park. A Parks Strategy for the Griffeen Valley Park extension shall be agreed with South Dublin County Council. The park shall be subject to a planning application but may include <ul style="list-style-type: none"> • A mix of active recreational facilities in the core area of the park; • Formal and informal childrens play areas; • Walkways and cycleways (wide enough to accommodate two people passing and be constructed using suitable surface material; • Seating and passive recreation areas; • Edges of the park shall be carefully designed and laid out, forming an interface between the park's open central character and adjacent 											

2.10 Landscape and Open Space	BFF	PHH	W	SG	Ma	AQ	CA	L	CC	GI	Commentary/recommendation
<p>development;</p> <ul style="list-style-type: none"> Planting in drifts to enhance biodiversity, definition and functional areas; Habitat improvements to existing ecological resources including the Griffeen River and the Grand Canal; Support the creation of new habitats within the park to address changes to natural heritage elsewhere in the plan lands; Retention and enhancement of selected hedgerow; Surface-water attenuation ponds to the north-west, fed by the proposed SUDS system. These areas should form high quality, water based ecological landscapes; and Retrofit or replace the existing pedestrian bridge over the railway line to provide 'green bridge'. The green bridge shall be integrated into the surrounding landscape and shall provide connections for pedestrians and cyclists, commuting routes for species and the park landscape as a whole. The detailed design of the bridge shall be in accordance with the Landscape Institute UK Green Bridges Technical Guidance Note 09/2015 December 2015 											
	↕	↑	○	○	○	○	○	↑	○	○	<p>Parks strategy will be an opportunity to embed more detail for this area.</p> <p>Note that 30m buffer for Griffeen will apply.</p>
<p>Grand Canal Park</p> <p>This park shall comprise an existing large area of open space located on the southern side of the Grand Canal and incorporates the Green Way cycle and pedestrian route on the southern tow path, to the north of the existing residential areas of Ashwood and Lindisfarne. The lands require appropriate new landscape interventions to enhance the existing character and ecological value of the canal. The Park would also strengthen the amenity and function of the Grand Canal as a strategic east-west link on the southern side. This park should also form a landscape corridor that should connect the surrounding neighbourhoods. A plan for the Grand Canal Park shall be designed in accordance with the overall Parks and Landscape Strategy for the SDZ lands and shall be submitted to and agreed in writing with South Dublin County Council at planning application stage and may include his park shall comprise an existing large area of open space located on the southern side of the Grand Canal and incorporates the Green Way cycle and pedestrian route on the southern tow path, to the north of the existing residential areas of Ashwood and Lindisfarne.</p> <p>The design of the Grand Canal Park shall also</p>											

2.10 Landscape and Open Space	BFF	PHH	W	SG	Ma	AQ	CA	L	CC	GI	Commentary/recommendation
<ul style="list-style-type: none"> Ensure that the northern side of canal retains a more ecological character, to enhance the quality of the proposed Natural Heritage Area; Active and passive recreational facilities Children's Play facilities; Walking and cycling routes; Retention and enhancement of selected hedgerow; Ensure that the southern side of the canal provides a leisure function; Appropriate access to the northern towpath will be based on ecological surveys to ensure the integrity of the Grand Canal ecological corridor is maintained enhancement of existing hedgerow and treeline would assist in this i.e. planting of thorny species such as blackthorn and hawthorn and Provide for the refurbishment of Omer's Lock house as a cultural asset, set within an appropriate landscape context. 											
	↕	↑	↑	↑	↑	↑	↑	↑	↑	↑	Positive population and human health SEOs, landscape and cultural heritage; indirect positive on transport SEOs, as well as soil and geology Retaining the ecological corridor function of the northern towpath includes the riparian vegetation that creates indirect positive effects on Water resources and direct positive effects on Green Infrastructure.
Barony Park This park shall comprise a new mixed character and function park that would connect the neighbourhoods away from the Canal, to the south of the railway. The hedgerows that form the historic barony boundaries, which gives the park its name, shall be retained to enhance the ecological character and identity of the lands. A pedestrian bridge over the railway shall connect the southern area and northern areas of the park. A plan for the Barony Park shall											

2.10 Landscape and Open Space	BFF	PHH	W	SG	Ma	AQ	CA	L	CC	GI	Commentary/recommendation						
be designed in accordance with the overall Parks and Landscape Strategy for the SDZ lands and shall be submitted to and agreed in writing with South Dublin County Council at planning application stage and may include: <ul style="list-style-type: none">Retention and enhancement of selected hedgerow;The northern area should take the form of contemporary parkland, with SUDS attenuation pond, open spaces and tree planting;One cricket pitch with ancillary lighting, changing facilities and parking;The southern half of the park closer to the Grand Canal shall retain a more ecological character with appropriate access to the northern towpath. Access to the northern towpath will be based on ecological surveys to ensure the integrity of the Grand Canal ecological corridor is maintained enhancement of existing hedgerow and treeline would assist in this i.e. planting of thorny species such as blackthorn and hawthorn;Some active uses, cafes and small pavilion buildings for community and educational use;																	
	⬆️/⬆️	⬆️	⬆️	⬆️	⬆️	⬆️	⬆️	⬆️	⬆️	⬆️	Effects on SEOs as above; enhancing connectivity between the canal and the railway gives rise to broadly positive effects on SEOs- where SUDS attenuation pond can be enhanced for biodiversity in line with landscape strategy requirements, positive effects on these SEOs.						
Local Park and Squares <p>Each local park and square shall be connected through a circuit of greenways and waterways throughout the lands. 8no neighbourhood parks shall be provided in a range of configurations.</p> <table><tr><th>Landscape element</th><th>Objective</th><th>Components</th></tr><tr><td>Local parks and squares</td><td>To serve the needs of residential areas. To provide everyday, local level amenity needs. To include a mix of smamller</td><td>Smaller sports facilities, such as multi-use games areas. Sitting areas. Small swales and bio-retention areas.</td></tr></table>												Landscape element	Objective	Components	Local parks and squares	To serve the needs of residential areas. To provide everyday, local level amenity needs. To include a mix of smamller	Smaller sports facilities, such as multi-use games areas. Sitting areas. Small swales and bio-retention areas.
Landscape element	Objective	Components															
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2.10 Landscape and Open Space	BFF	PHH	W	SG	Ma	AQ	CA	L	CC	GI	Commentary/recommendation
		scale passive and active amenity facilities. To include local level SUDS function. To assist in local legibility and placemaking.				Playgrounds and play areas. Planting in lines to define edges and different functional areas. Retention and enhancement of selected hedgerow.					
	⇅/↑	↑	↑	↑	↑	↑	↑	↑	↑	↑	As above. The incorporation of waterways as part of SUDs benefits water resources and material assets (flooding) SEOs, hedgerow retention and enhancement as well as appropriate planting can contribute positive to Biodiversity SEOs over time.
Proposed Network of Urban Spaces and Squares The urban squares and spaces shall be designed to the highest quality and must take into account the quality of materials, the quality and variety of sub spaces within the squares, links into and across the squares and spaces and the maintenance and management of the spaces over time											
	○	↑	○	○	↑	↑	↑	↑	○	○	These urban squares give rise to positive effects on landscape and population and human health SEOs in particular. Longer term effects may arise in relation to cultural heritage in certain areas. Design criteria relate to public realm measures including design materials and high quality street planting.

2.10 Landscape and Open Space	BFF	PHH	W	SG	Ma	AQ	CA	L	CC	GI	Commentary/recommendation						
<p>Strategic amenity routes and local links</p> <p>Strategic Amenity Routes and local links provide opportunities to link a network of open spaces to all the neighbourhoods and opportunities for habitat conservation.</p> <p>Within both the existing and proposed amenity routes and local links, there are significant opportunities to develop Sustainable Urban Drainage Systems (SUDS). SUDS infrastructure provide an opportunity to create a series of blue and green spaces which could including riparian planting, wetlands, tree planting and ponds.</p> <p>The strategic amenity routes and local links shall be designed in accordance with the Design criteria for the landscape elements as set out in Table 2.10.4.</p> <table><tr><th>Landscape element</th><th>Objective</th><th>Components</th></tr><tr><td>Strategic amenity routes</td><td>To provide routes connecting strategic open spaces. To incorporate existing strategic corridors. To accommodate strategic amenity routes. To provide for strategic movement routes. To protect and enhance biodiversity.</td><td>Strategic cycle and pedestrian routes. Regular rest and amenity areas. Sensitive lighting. Protection and enhancement of hedgreow. New pedestrian and cycle bridges. Bridge at Griffeen Valley Park upgraded to a green bridge.</td></tr></table>												Landscape element	Objective	Components	Strategic amenity routes	To provide routes connecting strategic open spaces. To incorporate existing strategic corridors. To accommodate strategic amenity routes. To provide for strategic movement routes. To protect and enhance biodiversity.	Strategic cycle and pedestrian routes. Regular rest and amenity areas. Sensitive lighting. Protection and enhancement of hedgreow. New pedestrian and cycle bridges. Bridge at Griffeen Valley Park upgraded to a green bridge.
Landscape element	Objective	Components															
Strategic amenity routes	To provide routes connecting strategic open spaces. To incorporate existing strategic corridors. To accommodate strategic amenity routes. To provide for strategic movement routes. To protect and enhance biodiversity.	Strategic cycle and pedestrian routes. Regular rest and amenity areas. Sensitive lighting. Protection and enhancement of hedgreow. New pedestrian and cycle bridges. Bridge at Griffeen Valley Park upgraded to a green bridge.															
	↑/↕	↑	○↑	○	↑	↑	↑	↑	○	○	Enhancement measures including biodiversity, green bridge, protection of hedgerows and sensitive lighting, as well as opportunities for SUDS and linking of blue and green infrastructure generate positive						

2.10 Landscape and Open Space	BFF	PHH	W	SG	Ma	AQ	CA	L	CC	GI	Commentary/recommendation
											effects across a range of parameters. Detailed design at project level will provide more certainty in relation to same.
The following strategic amenity routes shall be provided. <i>Railway Ecological Corridor</i> This essentially provides an uninterrupted corridor throughout a vast swathe of countryside through an array of habitats and is used by a number of species for commuting between various habitats. This corridor will support the objective of the scheme to provide routes connecting strategic open spaces. The design of the railway ecological corridor shall be in accordance with the PLS and BHP for the Planning Scheme.											
	↕	↑	○	○	↑	↑	↑	↑	↑	↑	Mitigation measures are recommended in order to achieve further ecological enhancement and connectivity with this proposal. Direct and indirect long term positive effects are identified for this in relation to population and human health (noise and air quality), air quality and climate, green infrastructure, material assets and landscape.
<i>Grand Canal ecological corridor</i> The corridor will form a key element of the proposed Barony Park to the north and the Grand Canal Park to the south. It is an objective of the scheme to enhance the biodiversity and ecological character of the proposed Natural Heritage Area. Developments fronting onto the Canal shall facilitate the continuity of the ecological corridor through the planting of native tree and hedgerow species and with appropriate access to the northern towpath.											

2.10 Landscape and Open Space	BFF	PHH	W	SG	Ma	AQ	CA	L	CC	GI	Commentary/recommendation
<p>All buildings shall be set back 50m from the Canal and development (with the exception of footpaths and bridges) shall be set 30m from the Grand Canal. Development proposals along the Grand Canal Corridor shall be accompanied by ecological impact assessments undertaken by an appropriately qualified and experienced ecologist and in line with CIEEM guidelines (2016).</p> <p>All development proposals along the Grand Canal shall be accompanied by a detailed landscaping plan, prepared by a suitably qualified landscape architect. The landscape plan shall address the varying topography of the site and shall have regard to the proposed Natural Heritage Area and the Protected Species using this corridor. The plan shall also include details of hard and soft landscaping, proposed species and sensitive lighting. Where new canal crossings i.e footbridges/cycle bridges are proposed, they shall be designed so as to avoid fragmentation of linear habitats associated with the Grand Canal Corridor.</p>											
	↕	↑	O	O	↑	↑	↑	↑	↑	↑	<p>Mitigation measures are recommended in order to achieve further ecological enhancement and connectivity with this proposal.</p> <p>Direct and indirect long term positive effects are identified for this in relation to population and human health (noise and air quality), air quality and climate, green infrastructure, material assets and landscape.</p> <p>ER.</p>

2.10 Landscape and Open Space	BFF	PHH	W	SG	Ma	AQ	CA	L	CC	GI	Commentary/recommendation
Local links All development proposals for arterial and local link roads shall be accompanied by a detailed landscaping plan, prepared by a suitably qualified landscape architect and in accordance with Table 2.10.5 Design Criteria for local links. The landscape plan shall include details of hard and soft landscaping and planting schedule. Table 2.10.5 Design Criteria for Local Links											
Local links		To provide a fine network of local routes connecting local and strategic open spaces. To prioritise comfortable use by pedestrians and cyclists.				High quality pedestrian and cycle links. Tree lined streets and avenues. Incorporation of small scale SUDS features such as swales, where appropriate.					
	↑	↑						↑	↑	↑	At a smaller scale these provisions give rise to positive direct effects on landscape, climate change adaptation and green infrastructure. Positive effects on Population and Human health and material assets in prioritising walking and cycling also.

2.11 Biodiversity and Natural Heritage

2.11 Biodiversity and Natural heritage	BFF	PHH	W	SG	Ma	AQ	CA	L	CC	GI	Commentary/recommendation
<p>The key principles of the biodiversity and heritage strategy are as follows</p> <ul style="list-style-type: none"> To seek to protect and enhance natural, built and cultural heritage features, where appropriate, such as the Grand Canal, streams, Protected Structures and barony and townland boundary hedgerows; To improve the quality, character and continuity of the Grand Canal (pNHA); To avoid or minimise the impact on protected species and their habitats; To promote local heritage, the naming of any new residential development should reflect the local and historical context of its siting, and may include the use of the Irish language; and Incorporate biodiversity and heritage into new developments. 											
	↕	↑	↑	↕	↕	↑	↑	↑	↑	↕	<p>Generally these principles will generate positive effects in relation to the SEOs. Indirect positive effects are identified for material assets around sustainable transport, and soil SEOS as well as water and biodiversity (subject to additional mitigation measures).</p> <p>Mitigation measures already identified for the Grand Canal will apply here also.</p> <p>See Chapter 8 of the SEA ER, as well as Chapters 2.3 and 2.10 of the SDZ Planning scheme.</p>
<p>2.11.2 Biodiversity and Natural Features</p> <p>Grand Canal</p>											

2.11 Biodiversity and Natural heritage	BFF	PHH	W	SG	Ma	AQ	CA	L	CC	GI	Commentary/recommendation
<p>The Grand Canal is a proposed Natural Heritage Area (pNHA) and comprises the canal channel and the banks on either side of it. It is considered to be the most valuable natural, built and cultural heritage asset on the lands. The ecological value of the canal lies in the diversity of species it supports along its linear habitats including Annex II of the EU Habitats Directive species Otter and White-clawed Crayfish, Bats species (Common Pipistrelle, Soprano Pipistrelle, Leisler's Bat, Daubenton's Bat and Brown Long-eared Bat), and also flora and fauna of local importance.</p> <p>Any development within the SDZ lands shall assist with safeguarding and improving the quality, character and continuity of the Grand Canal (pNHA) and facilitating the protected species, biodiversity, and its contribution to a fully functioning Green Infrastructure network. The Planning Scheme provides for a 50m set-back for all buildings from the northern side of the Grand Canal, to afford the optimal degree of protection to the Grand Canal ecological corridor.</p> <p>In order to ensure the continuity of the character of the northern tow path as an ecological corridor, access to the northern tow path of the Grand Canal shall be carefully designed, in particular, access to areas of greatest sensitivity shall be avoided. Points of access to the northern towpath of the Canal shall be detailed in the Landscape and Parks strategy for the lands (see Section 2.3.5).</p> <p>Appropriate access to the northern towpath shall be carefully designed based on site specific characterises and sensitivities (including lighting design, new planting of hawthorn and blackthorn species) and shall be set out in the Landscape and Parks Strategy. (See also Sections 2.10)</p> <p>Where new canal crossings i.e footbridges/cycle bridges are proposed, they shall be designed so as to avoid fragmentation of linear habitats associated with the Grand Canal Corridor.</p> <p>All external lighting should be downlighting and should be time limited where possible. Lighting should be avoided in sensitive wildlife areas and light pollution, in general, should be avoided. Any additional nocturnal illumination of the canal corridor resulting from the development of the planning Scheme should be kept to a minimum. Further lighting along the northern bank shall be restricted and shall be based on the sensitivities of bat species using the northern bank.</p>											

2.11 Biodiversity and Natural heritage	BFF	PHH	W	SG	Ma	AQ	CA	L	CC	GI	Commentary/recommendation
	↕/	↑	↑	↑	↑	↑	↑	↑	↑	↑	<p>The 50m buffer from the canal were identified as predraft stage and these have been incorporated to the SDZ Planning Scheme. Recommendations regarding lighting were also identified at predraft stage and have been incorporated through the SEA process; Additional mitigation measures regarding lighting, access and integrity of the linear habitats associated with the Grand Canal.</p> <p>It is recognised that currently there is usage of the northern towpath and this approach aims to manage this inlight of the additional population that will be associated with the implementation of the Planning Scheme.</p> <p>Indirect positive effects for material assets through water quality, SUDs, flood reduction, soil resources/</p>
Ecological Corridors											

2.11 Biodiversity and Natural heritage	BFF	PHH	W	SG	Ma	AQ	CA	L	CC	GI	Commentary/recommendation
<p>There are three primary ecological corridors on the lands comprising the Grand Canal and associated towpath, Griffeen stream and along the railway line. The Griffeen stream is used by species such as Trout and white-clawed Crayfish, and also the Otter for both hunting and commuting. The Griffeen stream corridor also links the Grand Canal to several habitats, including the River Liffey and as such is of importance to these species.</p> <p>The Kildare rail line essentially provides an uninterrupted corridor through countryside, through an array of habitats and could be used by a large number of species for commuting between various habitats.</p> <p>All development proposals within 50m of the Grand Canal and feeder streams and 30m meters from the top of the bank of all watercourses shall be accompanied by an Ecological Impact Assessment. This shall be prepared by a qualified Ecologist and in line with <i>Guidelines for Ecological Impact Assessment in the UK and Ireland, Terrestrial, Freshwater and Coastal</i> (CIEEM 2nd ed 2016)</p> <p>All development proposals should seek to enhance biodiversity and avoid or minimise loss of existing habitats and wildlife corridors.</p> <p>In order to inform the Strategic Environmental Assessment and the Planning Scheme, ecological surveys were carried out in 2015, 2016 and 2017. Given the biodiversity value of the SDZ lands, a Biodiversity Management Plan shall be prepared by a qualified Ecologist and be guided by relevant best practice guidelines and established techniques for habitats present on the SDZ lands. The Biodiversity Management Plan shall form part of the Parks and Landscape Strategy. (See Section 2.10 Parks and Landscape Strategy)</p>											
	↑/↕	↑	↑	↑	↑	↑	↑	↑	↑	↑	Recognition of ecological corridors and their contribution and enhancement at landscape level gives rise to positive effects on biodiversity, soil and geology, water and landscape SEOs in particular; indirect longer term positive effects around climate change adaptation, and population and human health.

2.11 Biodiversity and Natural heritage	BFF	PHH	W	SG	Ma	AQ	CA	L	CC	GI	Commentary/recommendation
											Additional mitigation measures recommended to strengthen environmental protection particularly for biodiversity.
<p>In addition to the primary ecological corridors, there is in excess of 30 km of hedgerow/treeline habitat within the SDZ lands. The Hedgerow/treeline habitat linking the Grand Canal Corridor and the Kildare Rail corridor should be retained where possible, in order to maintain the continued ecological integrity of these habitats including for foraging and commuting bats. Where these hedgerows cannot be retained, a new hedgerow network composed of the same species shall be planted along roadways within the development.</p> <p>A Method Statement for the construction, planting regime and species selection of both 'dry' and 'wet' hedgerows shall be provided with all planning applications for developments within 10m of existing hedgerows along the barony boundary, the Grand Canal and the Griffeen and Kilmahuddrick streams.</p>											
	↑	↑	↑	↑	↑	↑	↑	↑	↑	↑	Positive long term effects for landscape, cultural heritage (historical hedgerows and Barony boundaries), and promotion of retention and replacement hedgerows mitigates against some of the losses of existing hedgerows that will occur with the SDZ Planning Scheme. Method statements are positive to allow for review and appropriate management level for hedgerows.
<p>Protected Species:</p> <p>In order to comply with European and National legislation on nature conservation, and to ensure that areas of biodiversity value are adequately protected, an Ecological Assessment prepared by a qualified ecologist and in line with Guidelines for ecological impact assessment in the UK and Ireland Terrestrial, freshwater and coastal (CIEEM 2nd ed 2016) will be required for development proposals that have the potential to impact on environmentally</p>											

2.11 Biodiversity and Natural heritage	BFF	PHH	W	SG	Ma	AQ	CA	L	CC	GI	Commentary/recommendation
sensitive sites in particular within 30m 50m of the Grand Canal, and 30m the Griffeen River and the Kilmahuddrick stream.											
This includes sites that are protected under EU and National Legislation; sites that may be in use by, or contain protected species or habitats; or sites that are in proximity to watercourses. All development proposals should seek to enhance biodiversity and avoid or minimise loss of existing local habitats and wildlife corridors.											
	↑/↕	↑	↑	↑	O	O	O	↑	O	↑	Reference to relevant professional institute guidelines to ensure appropriate ecological impact assessments are undertaken is a recommended mitigation measure for Biodiversity SEOS; indirect positive effects on water, soil, population and human health and water associated with ecological assessment of development proposals.
Invasive Species Three invasive species occur within the SDZ lands; Japanese Knotweed (<i>Fallopia japonica</i>); Himalayan Balsam (<i>Impatiens glandulifera</i>); and Canadian Waterweed (<i>Elodea canadensis</i>). No development shall take place on the lands until an Invasive Species Management and Control Plan has been prepared and implemented to prevent the introduction of any new species, prevent the movement and spread of any existing species and eradicate any existing species from the lands. The intent of an Invasive Species Management and Control Plan is that all equipment and material must arrive at the site free of any invasive plant species propagules and that all equipment and material leaving the site must be free of any invasive plant species propagules. The Invasive Species Management and Control Plan shall be prepared by a suitably qualified person and shall include the following objectives <ul style="list-style-type: none"> To prevent the introduction of any new species of alien invasive plant to the site; To prevent the movement and spread of any existing alien invasive plant species on site; To eradicate any populations of invasive alien plan species on site; 											

2.11 Biodiversity and Natural heritage	BFF	PHH	W	SG	Ma	AQ	CA	L	CC	GI	Commentary/recommendation
<p>1. The Invasive Species Management and Control Plan shall Identify and map existing alien invasive plant species present within the SDZ lands and immediate area</p> <p>2. Eradicate any populations of invasive species in accordance with best practice principles and guidelines issued by Invasive Species Ireland and National Parks and Wildlife Service.</p> <p>3. Annual monitoring of the site for 5 years post eradication to ensure that any populations of alien invasive plant species have been eradicated; and</p> <p>4. Traceability of all imported material and the imposition of requirement for certification of all imported material as being free of propagules of any Third Schedule-listed alien invasive plant species.</p>											
	↕	↑	↕	↕	O	↑	O	↑	O	↑	<p>Frontloading of invasive species prior to development will ensure spreading of such species around the site is minimised in advance of development; in addition to CEMP mitigation measures this will provide greater preventative measures to avoid spread of such species.</p> <p>Additional mitigation measures recommended in line with Ecology Survey Recommendations.</p>

2.12 Archaeological and Architectural Heritage

2.12 Archaeological and Architectural Heritage	BFF	PHH	W	SG	Ma	AQ	CA	L	CC	GI	Commentary/recommendation
Key Principle To retain and enhance architectural heritage and archaeological heritage features, sites and structures within the SDZ lands by encouraging conservation, adaptive reuse and incorporation, where appropriate, within the built fabric and landscape of the SDZ Lands.											
	O	↑	O	O	O	O	↑	↑	O	O	Positive effects on population and human health, landscape and cultural assets. In particular where renovation or adaption or reuse of heritage features are promoted, indirect positives on waste management also.
<ul style="list-style-type: none"> To incorporate Architectural Heritage structures and features throughout the SDZ lands in a manner that promotes place making and capitalises on the unique industrial heritage of the surrounding area. To ensure that the high archaeological potential of the SDZ Lands is fully considered and valued throughout the design and construction process. 											
	O	↑	O	O	O	O	↑	↑	O	O	Impacts as above.
2.12.2 Architectural Heritage Development within the SDZ lands should be designed and carried out in a manner that protects and conserves all Protected Structures within the SDZ lands and, where possible, retains and conserves additional structures of architectural merit identified under this Planning Scheme as well as any further features of interest.											
	O	↑	O	O	O	O	↑	↑	O	O	Positive effects on population and human health, landscape and cultural assets. In

2.12 Archaeological and Architectural Heritage	BFF	PHH	W	SG	Ma	AQ	CA	L	CC	GI	Commentary/recommendation
											particular where renovation or adaption or reuse of heritage features are promoted, indirect positives on waste management also.
<p>The rehabilitation, renovation, incorporation and appropriate use and re-use of structures of architectural merit including Protected Structures and the additional identified structures of architectural merit is therefore promoted by this Planning Scheme. Targeted requirements in relation to some of the structures are set out in Chapter 3 (Development Areas).</p> <p>Proposals to extend, alter or refurbish any of the structures identified in the appended inventory should be sympathetic to their special character and integrity (including historic curtilage and visual setting) and should be appropriate in terms of architectural treatment, character, scale and form. All such proposals shall be consistent with the <i>Architectural Heritage Guidelines for Planning Authorities</i> (2011) and in accordance with good conservation practice adhering to conservation principles.</p> <p>Development proposals for works to a structure that is considered to be of significant architectural merit (Protected Structures in particular) should therefore be accompanied by a Method Statement that describes the proposed works. In the case of works that have the potential to have a significant impact on the special interest of any such structure, an Architectural Heritage Impact Assessment may also be required. Such statements/assessments shall be prepared in accordance with the requirements of the <i>Architectural Heritage Guidelines for Planning Authorities</i> (2011).</p>											
	O	↑	O	O	O	O	↑	↑	O	O	Positive effects on population and human health, landscape and cultural assets. In particular where renovation or adaption or reuse of heritage features are promoted, indirect positives on waste management also.

2.12 Archaeological and Architectural Heritage	BFF	PHH	W	SG	Ma	AQ	CA	L	CC	GI	Commentary/recommendation
<p>Where possible and appropriate, any further local historic features that contribute to the character, interest or visual interest of the area (mill races, overflows, aqueducts, viaducts, tow paths and bridge features etc.) should also be identified, retained and refurbished as part of the development of the SDZ lands.</p> <p>Where relevant, the incorporation of features and structures of architectural merit should be detailed and described within design statements for all medium to large scale development proposals (see Section 2.3.2 – Design and Design Statements) on the SDZ lands.</p>											
	O	↑	O	O	O	O	↑	↑	O	O	Positive effects on population and human health, landscape and cultural assets. In particular where renovation or adaption or reuse of heritage features are promoted, indirect positives on waste management also.
<p>Development within the SDZ lands should be designed and carried out in a manner that protects and conserves all Protected Structures within the SDZ lands and, where possible, retains and conserves additional structures of architectural merit identified under this Planning Scheme as well as any further features of interest.</p>											
	O	↑	O	O	O	O	↑	↑	O	O	Positive effects on population and human health, landscape and cultural assets. In particular where renovation or adaption or reuse of heritage features are promoted, indirect positives on waste management also

2.12.3 Archaeological Heritage

The SDZ lands are therefore considered to have a relatively high archaeological potential. Development should therefore be designed and carried out in a manner that protects archaeological heritage and avoids adverse impacts on sites, objects or features of significant archaeological interest.

Applications for development within the SDZ lands should therefore be accompanied by desktop analysis and field survey work carried out by a licensed archaeologist. Such survey work should seek to identify known archaeological sites, previously unrecorded features and suspected sites together with any portable finds.

Development that has been pre-determined to have the potential to disturb archaeological sites, objects or features shall be supported by an Archaeological Impact Assessment and Mitigation Strategy particularly for development within the vicinity of known archaeological sites and previously unrecorded features identified through archaeological survey work.

Furthermore, development within the SDZ lands should be subject to archaeological monitoring by a licensed archaeologist during the stripping of topsoil together with any further specific requirements.

The decision to carry out Archaeological Impact Assessment (including Archaeological Testing) or Archaeological Monitoring should also be informed by advice from the Department of Arts, Heritage and the Gaeltacht (DAHG) together with the considerations of SDCC. Full Archaeological Excavation shall also be carried out where it is recommended by the DAHG.

Where appropriate, the incorporation of any known or discovered archaeological sites or features should be detailed and described within design statements for all medium to large scale development proposals (see Section 2.8.2 – Design Criteria) on the SDZ lands.

	O	↑	O	O	O	O	↑	↑	O	O	Positive effects on population and human health, landscape and cultural assets. These measures together provide for protection of potential archaeological resources that may be present on the SDZ lands.
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Chapter 3 Development Areas

Chapter Three	BFF	PHH	W	SG	Ma	AQ	CA	L	CC	GI	Commentary/recommendation
Key Principle The three character areas will be developed in accordance with the following key principles <ul style="list-style-type: none"> Ensure that each character area is developed with open ended and integrated pedestrian and cycle routes that link with the main centres and adjacent neighbourhoods. Ensure that each character area is developed with regard to the required prescriptive statistical parameters in particular; identify densities, social and affordable housing, community and childcare facilities, retail and services and which identify the gross and net extent of each development area. Ensure that each character area is developed with regard to the physical parameters in particular; identify the main road layout, road type, parking conditions, principal access points, appropriate levels of vehicular and pedestrian permeability as well as key building frontages and public spaces and should generally be regarded as fixed. Ensure that key building frontages be provided to achieve the same degree of preservation of the amenities of adjoining properties or passive supervision of public space, as appropriate. Ensure that each character area integrates green and blue infrastructure features as identified on the masterplan and supports ecological connectivity and enhancement where identified. 											
	⇅/↑	↑/⇅	⇅/↑	⇅/↑	⇅/↑	⇅/↑	⇅/↑	⇅/↑	⇅/↑	⇅/↑	<p>These principles and mapping have been informed through a series of technical studies and iterative processes including the SEA; the principles will contribute to positive effects on some biodiversity SEOS, Air Quality, Landscape, Material Assets (flood risk, transport) and population and human health.</p> <p>Given the nature of the SDZ Planning scheme and considerable conversion from greenfield to built lands, potential effects</p>

Chapter Three	BFF	PHH	W	SG	Ma	AQ	CA	L	CC	GI	Commentary/recommendation						
											arise across all parameters, however these are minimised through the integration of specific mitigation measures identified through the SEA and AA processes. SEA mitigation measure to strengthen integration of blue and green infrastructure and ecological connectivity is recommended.						
Development Area 1: Clonburris Urban Centre																	
Area character type			The area will contain a diverse, mixed use development, containing the main retail, commercial and civic uses for the new urban centre based around a public plaza and a transport interchange on Fonthill Road North. A major public plaza; Clonburris Square will be located in the north west section of the Urban Centre, to form a dynamic, vibrant place which will form part of the urban identity of the lands as a whole.														
Net Developable Area			17.90 ha														
No of units (Target)			1,265														
Average Net Density (Target)			<table><tr><th>Sub Sector</th><th>Average Net Density (Target)</th></tr><tr><td>CUC-S1</td><td>69</td></tr><tr><td>CUC-S2</td><td>78</td></tr></table>									Sub Sector	Average Net Density (Target)	CUC-S1	69	CUC-S2	78
Sub Sector	Average Net Density (Target)																
CUC-S1	69																
CUC-S2	78																

Chapter Three	BFF	PHH	W	SG	Ma	AQ	CA	L	CC	GI	Commentary/recommendation											
				CUC-S3	68																	
				CUC-S4	72																	
				* See also Table 2.1.5 for full range of density																		
Affordable/Social dwellings				To be negotiated in accordance with relevant legislation and SDCC Housing Policy																		
Non-retail commercial development				18,515 sqm min																		
Retail development				16,520 sqm max																		
Community				2,500 sqm min																		
Building height				<table><tr><th>Sub Sector</th><th>Building Height</th></tr><tr><td>CUC-S1</td><td>2-6 storey</td></tr><tr><td>CUC-S2</td><td>3-6 storey</td></tr><tr><td>CUC-S3</td><td>2-6 storey</td></tr><tr><td>CUC-S4</td><td>2-6 storey</td></tr></table> <p>See also Figure 3.3.2 Building Height Concept</p>								Sub Sector	Building Height	CUC-S1	2-6 storey	CUC-S2	3-6 storey	CUC-S3	2-6 storey	CUC-S4	2-6 storey	
Sub Sector	Building Height																					
CUC-S1	2-6 storey																					
CUC-S2	3-6 storey																					
CUC-S3	2-6 storey																					
CUC-S4	2-6 storey																					
Public open space				15,200 sqm																		

Key objectives

- To develop a high quality mixed use District Centre to serve the community of Clonburris and surrounding communities.
- To provide for significant commercial (non-retail) provision in areas of high accessibility to public transport.
- To provide for a District Centre level retail to support a range of needs within the district catchment.
- To develop a significant multi-purpose civic building for the entire SDZ area and surrounding communities.
- To ensure high levels of legibility and ease of orientation.
- To achieve high levels of permeability, particularly for pedestrians and cyclists.

Chapter Three	BFF	PHH	W	SG	Ma	AQ	CA	L	CC	GI	Commentary/recommendation
<ul style="list-style-type: none">To provide for transport interchange at the railway station, in particular, connecting rail, bus and cyclists.To provide a new civic space for Clonburris, which will serve as multi-functional business and social space focal space.To achieve good levels of continuity and enclosure along the arterial streets, Link Streets/avenues and the urban spaces.											
	🏠/📈	📈/🏠	🏠/📈	🏠/📈	🏠/📈	🏠/📈	🏠/📈	🏠/📈	🏠/📈	🏠/📈	Impacts as above. Mitigation measure recommended regarding lighting and wildlife effects.

Development Area 2: Clonburris South East

Area character type	Mixed development area with medium density residential development close to the main Urban Centre.						
Net development area	3.30 ha						
No of units (Target)	201						
Average Net Density Target	<table><tr><th>Sub Sector</th><th>Average Net Density (Target)</th></tr><tr><td>CSE-S1</td><td>56</td></tr><tr><td>CSE-S2</td><td>70</td></tr></table> <p>* See also Table 2.1.5 for full range of density</p>	Sub Sector	Average Net Density (Target)	CSE-S1	56	CSE-S2	70
Sub Sector	Average Net Density (Target)						
CSE-S1	56						
CSE-S2	70						
Affordable/Social dwellings	To be negotiated in accordance with relevant legislation and SDCC Housing Policy						
Building height							

Chapter Three	BFF	PHH	W	SG	Ma	AQ	CA	L	CC	GI	Commentary/recommendation
			Sub Sector		Building Height						
			CSE-S1		2-4 storey						
			CSE-S2		2-5 storey						
			* See also Figure 3.3.2 Building Height Concept								
Public open space			4,300 sqm								
Key objectives											
<ul style="list-style-type: none">To develop a high quality residential neighbourhood at Clonburris South East;To integrate with existing development at Cappaghmore;To provide locally accessible open spaces of local and strategic importance;To ensure high levels of legibility and ease of orientation;To provide a new Link Street/avenue between Clonburris urban centre and Lucan-Newlands Road;To prioritise pedestrian and cyclist movement and to provide for local bus services along the avenue;To provide for a range of housing along the new avenue and local streets including home zones;To provide a distinctive, diverse and quality frontage to the Canal corridor;To provide significant and integrated SUDS infrastructure, including a high amenity retention pond/lake within a new strategic open space at Cappaghmore; andTo retain the Cappamore Lodge Screen entrance wall as a gateway feature.											
	↕/↑	↑/↕	↕/↑	↕/↑	↕/↑	↕/↑	↕/↑	↕/↑	↕/↑	↕/↑	Impacts are similar to those identified above.
Development Area 3: Clonburris South West											
Area character type			Mixed development area with medium density								

Chapter Three	BFF	PHH	W	SG	Ma	AQ	CA	L	CC	GI	Commentary/recommendation										
				residential development and will contain local community facilities, including a primary and post primary school and small scale retail and commercial uses.																	
Net development area				25.98 ha																	
No of units (Target)				1,441																	
Average Net Density (Target)				<table><tr><th>Sub Sector</th><th>Average Net Density (Target)</th></tr><tr><td>CSW-S1</td><td>50</td></tr><tr><td>CSW-S2</td><td>50</td></tr><tr><td>CSW-S3</td><td>56</td></tr><tr><td>CSW-S4</td><td>64</td></tr></table> <p>* See also Table 2.1.5 for full range of density</p>								Sub Sector	Average Net Density (Target)	CSW-S1	50	CSW-S2	50	CSW-S3	56	CSW-S4	64
Sub Sector	Average Net Density (Target)																				
CSW-S1	50																				
CSW-S2	50																				
CSW-S3	56																				
CSW-S4	64																				
Affordable/Social dwellings				To be negotiated in accordance with relevant legislation and SDCC Housing Policy																	
Non-retail commercial development				200 sqm min																	
Retail development				400 sqm max																	
Community				600 sqm min																	
Building height				<table><tr><th>Sub Sector</th><th>Building Height</th></tr><tr><td>CSW-S1</td><td>2-5 storey</td></tr><tr><td>CSW-S2</td><td>2-4 storey</td></tr><tr><td>CSW-S3</td><td>2-5 storey</td></tr></table>				Sub Sector	Building Height	CSW-S1	2-5 storey	CSW-S2	2-4 storey	CSW-S3	2-5 storey						
Sub Sector	Building Height																				
CSW-S1	2-5 storey																				
CSW-S2	2-4 storey																				
CSW-S3	2-5 storey																				

Chapter Three	BFF	PHH	W	SG	Ma	AQ	CA	L	CC	GI	Commentary/recommendation
			CSW-S4		2-5 storey						
			* See also Figure 3.3.2 Building Height Concept								
Public open space			14,300 sqm								
Key objectives											
<ul style="list-style-type: none">To develop a high quality residential neighbourhood at Clonburris;To develop a new local node, Cappagh, comprising small-scale, local retail, service and community facilities, fronting the new Boundary Park;To develop new co-located primary and post-primary schools with direct access and frontage to the new Boundary Park;To provide locally accessible open spaces of local and strategic importance;To ensure high levels of legibility and ease of orientation;To provide a new north south avenue link connecting Clonburris North East, Clonburris South East and Deansrath/Bawnogue;To provide a new link route/avenue in the heart of the neighbourhood as part of the main connection between Kishoge and Clonburris urban centres;To prioritise pedestrian and cyclist movement and to provide for bus services along the avenue;To provide for a range of housing along the new avenue and local streets including home zones;To provide a distinctive, diverse and quality frontage to the Canal corridor.Sensitively designed pedestrian access points to the Grand Canal;To retain and refurbish the Cappagh Overflow bridge; andTo seek the refurbishment and re-use of Omer’s Lock House.											
	↕/↑	↑/↕	↕/↑	↕/↑	↕/↑	↕/↑	↕/↑	↕/↑	↕/↑	↕/↑	Impacts as above.
Development Area 4: Clonburris North East											
Area character type			Mixed development area with medium density residential development close to the Clonburris								

Chapter Three	BFF	PHH	W	SG	Ma	AQ	CA	L	CC	GI	Commentary/recommendation						
			Urban Centre.														
Net development area			7.50 ha														
No of units (Target)			410														
Average Net Density (Target)			<table><tr><th>Sub Sector</th><th>Average Net Density (Target)</th></tr><tr><td>CNE-S1</td><td>68</td></tr><tr><td>CNE-S2</td><td>44</td></tr></table> <p>* See also Table 2.1.5 for full range of density</p>									Sub Sector	Average Net Density (Target)	CNE-S1	68	CNE-S2	44
Sub Sector	Average Net Density (Target)																
CNE-S1	68																
CNE-S2	44																
Affordable/Social dwellings			To be negotiated in accordance with relevant legislation and SDCC Housing Policy														
Building height			<table><tr><th>Sub Sector</th><th>Building Height</th></tr><tr><td>CNE-S1</td><td>2-5 storey</td></tr><tr><td>CNE-S2</td><td>2-5 storey</td></tr></table> <p>* See also Figure 3.3.2 Building Height Concept</p>								Sub Sector	Building Height	CNE-S1	2-5 storey	CNE-S2	2-5 storey	
Sub Sector	Building Height																
CNE-S1	2-5 storey																
CNE-S2	2-5 storey																
Public open space			15,300 sqm														
Key objectives																	
<ul style="list-style-type: none">To develop a high quality residential neighbourhood at Clonburris;To provide locally accessible open spaces of local and strategic importance;To develop a new post-primary school with direct access and frontage to the improved Lucan- Newlands Road and a new focal space/local park;To ensure high levels of legibility and ease of orientation;To provide a new link street/avenue between Clonburris urban centre and Lucan-Newlands/Ronanstown;																	

Chapter Three	BFF	PHH	W	SG	Ma	AQ	CA	L	CC	GI	Commentary/recommendation										
<ul style="list-style-type: none">To prioritise pedestrian and cyclist movement and to provide for local bus services along the avenue;To provide for a range of housing along the new Link Street/avenue and including the local streets and home zones;To improve Lucan-Newlands Road as a quality Link Street/avenue, providing better alignment and frontage; andTo provide significant and integrated SUDS infrastructure, including a high amenity retention pond/lake within a new local park.																					
	↕/↑	↑/↕	↕/↑	↕/↑	↕/↑	↕/↑	↕/↑	↕/↑	↕/↑	↕/↑	Impacts are similar to those identified above.										
Development Area 5 Clonburris North West																					
Area character type		Mixed development area with medium density residential development close to the main Urban Centre with community uses and a post primary school.																			
Net development area		14.37 Ha																			
No of units (Target)		783																			
Average Net Density (Target)		<table><tr><th>Sub Sector</th><th>Average Net Density (Target)</th></tr><tr><td>CNW-S1</td><td>50</td></tr><tr><td>CNW-S2</td><td>50</td></tr><tr><td>CNW-S3</td><td>60</td></tr><tr><td>CNW-S4</td><td>55</td></tr></table> <p>* See also Table 2.1.5 for full range of density</p>										Sub Sector	Average Net Density (Target)	CNW-S1	50	CNW-S2	50	CNW-S3	60	CNW-S4	55
Sub Sector	Average Net Density (Target)																				
CNW-S1	50																				
CNW-S2	50																				
CNW-S3	60																				
CNW-S4	55																				
Affordable/Social dwellings		To be negotiated in accordance with relevant legislation and SDCC Housing Policy																			

Chapter Three	BFF	PHH	W	SG	Ma	AQ	CA	L	CC	GI	Commentary/recommendation
Community			600 sqm min								
Retail			400 sqm max								
Commercial			200 sqm min								
Building height			Sub Sector		Building Height						
			CNW-S1		2-5 storey						
			CNW-S2		2-5 storey						
			CNW-S3		2-5 storey						
			CNW-S4		3-6 storey						
			* See also Figure 3.3.2 Building Height Concept								
Public open space			9,700 sqm								

Key objectives

- To develop a high quality residential neighbourhood at Clonburris;
- To develop a new local node, Gallanstown, comprising small-scale, local retail, service and community facilities, fronting the new Barony Park;
- To provide locally accessible open spaces of local and strategic importance;
- To ensure high levels of legibility and ease of orientation;
- To provide a new north south avenue/ links connecting Thomas Omer Way, Clonburris North East and Clonburris South East;
- To provide a new link street/avenue in the heart of the neighbourhood as part of the main connection between Kishoge and Clonburris urban centres;
- To prioritise pedestrian and cyclist movement and to provide for bus services along the avenue/Link Street;
- To provide for a range of housing along the new avenue and local streets including homezones; and
- To provide a distinctive, diverse and quality frontages to Thomas Omer way, the Link Street/avenues and the strategic open spaces.

Chapter Three	BFF	PHH	W	SG	Ma	AQ	CA	L	CC	GI	Commentary/recommendation
	↕/↑	↑/↕	↕/↑	↕/↑	↕/↑	↕/↑	↕/↑	↕/↑	↕↑	↕/↑	Impacts are similar to those identified above.

Development Area 6: Kishogue Urban Centre

Area character type	The centre will contain a diverse, mixed use development, containing the main commercial and retail uses for the new Urban centre based around a public plaza and a transport interchange on the Outer Ring Road.										
Net development area	10.94ha										
No of units (Target)	734										
Average Net Density (Target)	<table><tr><th>Sub Sector</th><th>Average Net Density (Target)</th></tr><tr><td>KUC-S1</td><td>63</td></tr><tr><td>KUC-S2</td><td>70</td></tr><tr><td>KUC-S3</td><td>68</td></tr><tr><td>KUC-S4</td><td>66</td></tr></table> <p>* See also Table 2.1.5 for full range of density</p>	Sub Sector	Average Net Density (Target)	KUC-S1	63	KUC-S2	70	KUC-S3	68	KUC-S4	66
Sub Sector	Average Net Density (Target)										
KUC-S1	63										
KUC-S2	70										
KUC-S3	68										
KUC-S4	66										
Affordable/Social dwellings	To be negotiated in accordance with relevant legislation and SDCC Housing Policy										
Non-retail commercial development	11,800 sqm min										
Retail development	3,500 sqm max										
Community	1,500 sqm min										

Chapter Three	BFF	PHH	W	SG	Ma	AQ	CA	L	CC	GI	Commentary/recommendation
Building height		Sub Sector		Building Height							
		KUC-S1		3-6 storey							
		KUC-S2		2-6 storey							
		KUC-S3		2-6 storey							
		KUC-S4		2-6 storey							
		* See also Figure 3.3.2 Building Height Concept									
Public open space		3,700 sqm									
Key objectives											
<ul style="list-style-type: none">• To develop a high quality mixed use centre to support the community of Kishoge;• To provide for significant commercial (non-retail) provision at areas of high accessibility to public transport;• To provide for local level retail to support the regular service and retail needs of the community of Kishoge;• To develop a multi-purpose civic facility for the community at Kishoge;• To ensure high levels of legibility and ease of orientation;• To achieve high levels of permeability, particularly for pedestrians and cyclists;• To provide for transport interchange at the railway station, in particular, connecting rail, bus and cyclists;• To provide intimately scaled focal/activity spaces surrounding quadrants of the Urban centre; and• To achieve good levels of continuity and enclosure along the arterial routes, avenues and the urban spaces.											
	⇅/↑	↑/⇅	⇅/↑	⇅/↑	⇅/↑	⇅/↑	⇅/↑	⇅/↑	⇅/↑	⇅/↑	Impacts are similar to those identified above.
Development Area 7: Kishogue North West											

Chapter Three	BFF	PHH	W	SG	Ma	AQ	CA	L	CC	GI	Commentary/recommendation								
Area character type		Medium density residential development. The lands will also accommodate an existing primary school and a proposed post primary school																	
Net development area		11.16 ha																	
No of units (target)		566																	
Average Net Density (Target)		<table><tr><th>Sub Sector</th><th>Average Net Density (Target)</th></tr><tr><td>KNW-S1</td><td>47</td></tr><tr><td>KNW-S2</td><td>60</td></tr><tr><td>KNW-S3</td><td>60</td></tr></table> <p>* See also Table 2.1.5 for full range of density</p>										Sub Sector	Average Net Density (Target)	KNW-S1	47	KNW-S2	60	KNW-S3	60
Sub Sector	Average Net Density (Target)																		
KNW-S1	47																		
KNW-S2	60																		
KNW-S3	60																		
Affordable/Social dwellings		To be negotiated in accordance with relevant legislation and SDCC Housing Policy																	
Building height		<table><tr><th>Sub Sector</th><th>Building Height</th></tr><tr><td>KNW-S1</td><td>2-5 storey</td></tr><tr><td>KNW-S2</td><td>2-5 storey</td></tr><tr><td>KNW-S3</td><td>2-5 storey</td></tr></table> <p>* See also Figure 3.3.2 Building Height Concept</p>										Sub Sector	Building Height	KNW-S1	2-5 storey	KNW-S2	2-5 storey	KNW-S3	2-5 storey
Sub Sector	Building Height																		
KNW-S1	2-5 storey																		
KNW-S2	2-5 storey																		
KNW-S3	2-5 storey																		
Public open space		12,800 sqm																	
Key objectives																			
<ul style="list-style-type: none">To develop a high quality residential neighbourhood at Kishoge, with strong links with the existing community at Griffeen;																			

Chapter Three	BFF	PHH	W	SG	Ma	AQ	CA	L	CC	GI	Commentary/recommendation										
<ul style="list-style-type: none">• To reinforce the existing local node at Griffeen with new open space and education facilities;• To provide locally accessible open spaces and links to strategic open space;• To develop a new post-primary to complement the existing primary school;• To ensure high levels of legibility and ease of orientation;• To provide a new quality frontage along Adamstown Avenue; and• To provide for a range of housing of a scale that reflects the type of street and its role in the urban structure.																					
	↕/↑	↑/↕	↕/↑	↕/↑	↕/↑	↕/↑	↕/↑	↕/↑	↕↑	↕/↑	Impacts are similar to those identified above.										
Development Area 8: Kishogue South West																					
Area character type	Low to medium density residential development with community space and a primary school, that will capitalise on the extension of the Griffeen Valley Park.																				
Net development area	21.55ha																				
No of units (Target)	1,059																				
Average Net Density (Target)	<table><tr><th>Sub Sector</th><th>Average Net Density (Target)</th></tr><tr><td>KSW-S1</td><td>45</td></tr><tr><td>KSW-S2</td><td>45</td></tr><tr><td>KSW-S3</td><td>51</td></tr><tr><td>KSW-S4</td><td>54</td></tr></table> <p>* See also Table 2.1.5 for full range of density</p>											Sub Sector	Average Net Density (Target)	KSW-S1	45	KSW-S2	45	KSW-S3	51	KSW-S4	54
Sub Sector	Average Net Density (Target)																				
KSW-S1	45																				
KSW-S2	45																				
KSW-S3	51																				
KSW-S4	54																				
Affordable/Social dwellings	To be negotiated in accordance with relevant legislation and SDCC Housing Policy																				

Chapter Three	BFF	PHH	W	SG	Ma	AQ	CA	L	CC	GI	Commentary/recommendation										
Non-retail commercial development		200 sqm min																			
Retail development		300 sqm max																			
Community		600 sqm min																			
Building height		<table><tr><th>Sub Sector</th><th>Building Height</th></tr><tr><td>KSW-S1</td><td>2-4 storey</td></tr><tr><td>KSW-S2</td><td>2-4 storey</td></tr><tr><td>KSW-S3</td><td>2-5 storey</td></tr><tr><td>KSW-S4</td><td>2-5 storey</td></tr></table> <p>* See also Figure 3.3.2 Building Height Concept</p>										Sub Sector	Building Height	KSW-S1	2-4 storey	KSW-S2	2-4 storey	KSW-S3	2-5 storey	KSW-S4	2-5 storey
Sub Sector	Building Height																				
KSW-S1	2-4 storey																				
KSW-S2	2-4 storey																				
KSW-S3	2-5 storey																				
KSW-S4	2-5 storey																				
Public open space		3,800 sqm																			

Key objectives

- To develop a high quality residential neighbourhood at Kishoge South West integrating with existing housing;
- To develop a new local node, Grange, comprising small-scale, local retail, service and community facilities, fronting Griffeen Valley Park;
- To provide locally accessible open spaces of local and strategic importance;
- To develop a new primary school with direct access to the Griffeen Valley Park.
- To ensure high levels of legibility and ease of orientation;
- To provide a new Link Street/avenue to connect to the Kishoge Urban Centre and Adamstown extension;
- To prioritise pedestrian and cyclist movement and to provide for local bus services along the avenue;
- To provide for a range of housing along the new Link Street/avenue, and local streets including homezones;
- To provide a distinctive, diverse and quality frontage to the Canal corridor.
- To provide significant and integrated SUDS infrastructure, including a high amenity retention pond/lake;
- To promote the adaptive re-use of Grange House; and

Chapter Three	BFF	PHH	W	SG	Ma	AQ	CA	L	CC	GI	Commentary/recommendation
<ul style="list-style-type: none">Appropriate pedestrian access points to the Grand Canal to be sensitively designed in accordance with the Parks and Landscape Strategy and Biodiversity Management Plan.											
	⇅/↑	↑/⇅	⇅/↑	⇅/↑	⇅/↑	⇅/↑	⇅/↑	⇅/↑	⇅↑	⇅/↑	Impacts as above. Parks and Landscape Strategy and Biodiversity Management Plan will direct access and design considerations around the Grand Canal.
Development Area 9: Kishogue South East											
Area character type		Mixed development area with medium density residential development closer to the centre, with low density on the perimeters. This area will contain small scale retail and commercial spaces, with a large community space adjacent to the Barony Park.									
Net development area		12.50 ha									
No of units (Target)		678									
Average Net Density (Target)		Sub Sector	Average Net Density (Target)								
		KSE-S1									
KSE-S2		57									
		* See also Table 2.1.5 for full range of density									
Affordable/Social dwellings		To be negotiated in accordance with relevant legislation and SDCC Housing Policy									
Non-retail commercial development		200 sqm min									

Chapter Three	BFF	PHH	W	SG	Ma	AQ	CA	L	CC	GI	Commentary/recommendation						
Retail development			400 sqm max														
Community			1,500 sqm min														
Building height			<table><tr><th>Sub Sector</th><th>Building Height</th></tr><tr><td>KSE-S1</td><td>2-5 storey</td></tr><tr><td>KSE-S2</td><td>2-5 storey</td></tr></table> <p>* See also Figure 3.3.2 Building Height Concept</p>									Sub Sector	Building Height	KSE-S1	2-5 storey	KSE-S2	2-5 storey
												Sub Sector	Building Height				
												KSE-S1	2-5 storey				
											KSE-S2	2-5 storey					
Public open space			9,200 sqm														
Key objectives																	
<ul style="list-style-type: none">To develop a high quality residential neighbourhood at Kishoge South East;To develop a new local node, Clonburris Little, comprising small-scale, local retail, service and community facilities, fronting the new Barony Park;To provide locally accessible open spaces of local and strategic importance;To ensure high levels of legibility and ease of orientation;To provide a new Link Street/avenue as part of the main connection between Kishoge and Clonburris urban centres;To prioritise pedestrian and cyclist movement and to provide for bus services along the avenue;To provide for a range of housing along the new avenue and local streets including homezones;To provide a distinctive, diverse and quality frontage to the Canal corridor; andAppropriate pedestrian access points to the Grand Canal to be sensitively designed in accordance with the Parks and Landscape Strategy and Biodiversity Management Plan.																	
	⇄/↑	↑/⇄	⇄/↑	⇄/↑	⇄/↑	⇄/↑	⇄/↑	⇄/↑	⇄/↑	⇄/↑	Impacts as above.						
Development Area 10: Kishogue North East																	
Area character type			Mixed development area with medium density														

[illegible]

Chapter Three	BFF	PHH	W	SG	Ma	AQ	CA	L	CC	GI	Commentary/recommendation
Key objectives <ul style="list-style-type: none">To develop a high quality residential neighbourhood at Kishoge, integrating with existing housing;To provide locally accessible open spaces of local and strategic importance;To ensure high levels of legibility and ease of orientation;To provide a new Link Street/avenue as part of the main connection between Kishoge and Clonburris urban centres;To prioritise pedestrian and cyclist movement and to provide for local bus services along the avenue;To provide for a range of housing along the new avenue and local streets including homezones;To provide a distinctive, diverse and quality frontages to Thomas Omer Way, the avenues/Link Streets and the strategic open spaces; andTo provide significant and integrated SUDS infrastructure, including a high amenity retention pond/lake to enhance green and blue infrastructure and ecological connectivity.											
	↕/↑	↑/↕	↕/↑	↕/↑	↕/↑	↕/↑	↕/↑	↕/↑	↕/↑	↕/↑	Impacts as above. Parks and Landscape Strategy and Biodiversity Management Plan will direct access and design considerations around the Grand Canal.
Development Area 11: Adamstown Extension											
Area character type		Low to medium density development that will take the form of an extension of Adamstown.									
Net development area		9.19 ha									
No of units (Target)		442									
Average Net Density (Target)		AE- S1 48									

Chapter Three	BFF	PHH	W	SG	Ma	AQ	CA	L	CC	GI	Commentary/recommendation
				AE-S2	48						
Affordable/Social dwellings				To be negotiated in accordance with relevant legislation and SDCC Housing Policy							
Building height				AE- S1 2-5 storeys AE-S2 2-5 storeys							
Public open space				Adjacent to the Griffeen Valley Park Extension							
Key objectives											
<ul style="list-style-type: none">• To develop a high quality residential neighbourhood as an extension to Adamstown;• To provide locally accessible open spaces of local and strategic importance;• To ensure high levels of legibility and ease of orientation;• To provide a new Link Street/avenue in the heart of the neighbourhood as part of the main connection between Kishoge urban centre and Lock Road/Adamstown;• To prioritise pedestrian and cyclist movement and to provide for bus services along the avenue;• To provide for a range of housing along the new avenue and local streets including home zones;• To provide a distinctive, diverse and quality frontage to the Canal corridor;• To provide significant and integrated SUDS infrastructure, including a high amenity retention pond/lake within the Griffeen Valley Park;• To provide good public lighting to the edge of Griffeen Valley Park that is sensitively designed and operated to reduce disturbance to wildlife particularly bat species; and• Appropriate pedestrian access points to the Grand Canal to be sensitively designed in accordance with the Parks and Landscape Strategy and Biodiversity Management Plan.											

Chapter Three	BFF	PHH	W	SG	Ma	AQ	CA	L	CC	GI	Commentary/recommendation
	↕/↑	↑/↕	↕/↑	↕/↑	↕/↑	↕/↑	↕/↑	↕/↑	↕↑	↕/↑	Impacts as above. Parks and Landscape Strategy and Biodiversity Management Plan will direct access and design considerations around the Grand Canal.
Development Area 12: Canal Extension											
Area character type		Medium density residential infill development to the south of the Canal adjacent to existing Grand Canal Park.									
Net development area		2.27 ha									
No of units (Target)		121									
Average Net Density (Target)		CE-S1 53									
Affordable/Social dwellings		To be negotiated in accordance with relevant legislation and SDCC Housing Policy									
Building height		3-4 storey									
Public open space		2500 sqm									
Key objectives											
<ul style="list-style-type: none">To develop a high quality residential neighbourhood as an extension to the existing Ashwood development;To provide locally accessible open spaces of local and strategic importance;To ensure high levels of legibility and ease of orientation;To prioritise pedestrian and cyclist movement;To provide for a range of housing on the canal frontage and local streets;To provide a distinctive, diverse and quality frontage to the Canal corridor; andTo provide significant and integrated SUDS infrastructure, including a high amenity retention pond/lake within the Canal corridor.											

Chapter Three	BFF	PHH	W	SG	Ma	AQ	CA	L	CC	GI	Commentary/recommendation
	↕/↑	↑/↕	↕/↑	↕/↑	↕/↑	↕/↑	↕/↑	↕/↑	↕↑	↕/↑	Impacts as above. Parks and Landscape Strategy and Biodiversity Management Plan will direct access and design considerations around the Grand Canal. Pond as part of SUDS can offer additional biodiversity benefits when designed appropriately –this is already reflected in mitigation measures in Section 2.3 Blue and Green Infrastructure.

Chapter 4: Phasing and Implementation

Chapter Four	BFF	PHH	W	SG	Ma	AQ	CA	L	CC	GI	Commentary/recommendation
Key principles of the Phasing Programme: <ul style="list-style-type: none"> Balanced delivery of infrastructure, urban centres and community services in tandem with population increase in order to ensure sustainable communities and place making is prioritised. A logical flexible schedule for development that ensures the coordinated and incremental development of the lands. Identification of critical infrastructure with the delivery of such linked to the completion of individual phases. 											
	⇅/↑	↑	⇅/↑	⇅/↑	↑	⇅/↑	⇅/↑	⇅/↑ ↑	⇅/↑	⇅/↑	<p>These principles aim to ensure delivery and phasing of key services, and infrastructure in line with population increases and wider development; thus avoiding negative effects from ad hoc or delayed delivery of such services and infrastructure.</p> <p>By providing a phasing programme, the provision of key essential infrastructure results in positive direct effects on material assets (water, wastewater, waste management, transport, flood risk) and indirect positive effects water quality (surface water, groundwater), soil and geology and some biodiversity SEOs.</p> <p>The phasing represents the implementation and development of the SDZ Planning scheme and there are negative effects associated with this but mitigation</p>

Chapter Four	BFF	PHH	W	SG	Ma	AQ	CA	L	CC	GI	Commentary/recommendation
											<p>measures in the SDZ Planning Scheme aim to address the most significant of these and ameliorate impacts where possible.</p> <p>Existing mitigation measures notably the Landscape and Park Strategy that includes a biodiversity management plan will be required at preliminary stage, as well as an Invasive Species Control and Management Plan pre development, and the Surface Water Strategy are identified as provided sufficient environmental protection at this phasing stages of the Planning Scheme.</p>
Table 4.2 Infrastructure required to be linked to the delivery of residential development and phased in accordance with the construction of residential units											
<ol style="list-style-type: none"> 1. Surface Water Management Plan measures* 2. Undergrounding of the 220kv Power Lines 3. Griffeen Valley Park Extension (includes upgrade of existing pedestrian bridge over railway to Green Bridge). 4. Barony Park (North and South) 5. Schools Sites 6. Community Buildings (Provision of) 7. District Park Hub / Sports Hall (Provision of) 8. Health Centre 9. Childcare Facilities 10. Retail floorspace 11. Fire Station site 											

Chapter Four	BFF	PHH	W	SG	Ma	AQ	CA	L	CC	GI	Commentary/recommendation
12. Main Link Streets (within scheme) 13. Major Signal Junctions in scheme (new and upgrades) 14. Vehicular Railway overbridge 15. Pedestrian & Cycle Canal overbridges 16. Pedestrian & Cycle Railway overbridges 17. Upgrade & realignment of R120 Lock Road 18. Opening of Train Station at Kishoge											
<p>*- Please read in conjunction with Section 2.9 of the Planning Scheme and the accompanying Surface Water Strategy prepared to inform a detailed Surface Water Strategy for the SDZ</p> <p>** - Please read in conjunction with Transport Assessment</p>											
<p>Impacts as above in Key Principles, the explicit linking of the above infrastructure will also be supported by the preparation of the Parks and Landscape Strategy that will include a biodiversity management plan. The following will be prepared prior to the commencement of development (Table 4.3 Phasing Table):</p> <ul style="list-style-type: none"> • Prior to the commencement of development, strategic district level measures and detailed design shall be prepared by the developers and agreed with South Dublin County Council through a Surface Water Management Plan to implement the prepared Surface Water Strategy. • Prior to the commencement of development, a strategic level Parks and Landscape Strategy (incorporating a Biodiversity Management Plan) shall be prepared by the developers and agreed in writing with South Dublin County Council. • Prior to the commencement of development, detailed Water and Wastewater plans for the Planning Scheme shall be prepared by the developers and agreed with Irish Water and South Dublin County Council. 											
<p>4.3 Phasing Table</p> <p>A phasing band of 2,000 units is incorporated into the Phasing Programme for the Planning Scheme. This phasing band is considered to be the optimal</p>											

Chapter Four	BFF	PHH	W	SG	Ma	AQ	CA	L	CC	GI	Commentary/recommendation
band to achieve a balanced delivery of infrastructure and community services in tandem with proportionate population increase to create critical mass and economic headroom. Furthermore, the bands provide a flexible schedule to aid development sequencing and incorporate lead in time for infrastructure.											
	⇅/↑	↑	⇅/↑	⇅/↑	↑	⇅/↑	⇅/↑	⇅/↑	⇅/↑	⇅/↑	Impacts as above and as per comments regarding overall phasing and development.
<p>4.4 Place Making</p> <p>The construction of the centres at Clonburris and Kishoge are critical elements in achieving the vision of this Planning Scheme and providing a critical mass of facilities, amenities and services to enhance the quality of living for future and existing residents in the area. To ensure the development of the key urban centres in the Planning Scheme in tandem with the population growth and to achieve the vision for the Planning Scheme, the Planning Scheme requires residential units in the catchment of each of the 2 main centres be linked to the construction of the core of the relevant centre.</p> <p>The Place Making Requirements Tables (Table 4.4 and Table 4.5) are supporting tables to the Phasing Table and links the construction of Kishoge and Clonburris Retail Cores with the construction of the residential units in each catchment.</p> <p>The relevant catchments for the implementation of the Place Making requirements are outlined in Figure 4.1. The Retail Cores for each centre are coloured orange with a red dashed boundary. The Kishoge place making catchment is the area coloured green in Figure 4.1 and the Clonburris place making catchment is the area coloured red in Figure 4.1.</p> <p>The Place Making Requirements shall be implemented on a flexible basis in relation to the sub sectors immediately adjacent to the place making catchment boundary between Kishoge and Clonburris, namely sub sectors in Kishoge North East, Clonburris North West, Kishoge South East and Clonburris South West.</p> <p>Development Areas that can generally be considered to be within the catchment of both centres. In these areas, the residential units shall be interchangeable between the Kishoge and Clonburris catchments.</p> <p>4.4.1 Clonburris Retail Core</p> <p>In tandem with the construction of residential units, the developers will be required to construct the Clonburris Retail Core on a pro rata basis. The Retail Core for Clonburris is defined in orange on Figure 4.1 and is further defined by the Sub Sector boundary of CUC-S1 and the associated public realm in Figure 4.2. The Planning Scheme provides for a target of 564 residential units, a minimum of 2,500 sqm of community floorspace, a minimum of 4,515 sqm</p>											

Chapter Four	BFF	PHH	W	SG	Ma	AQ	CA	L	CC	GI	Commentary/recommendation		
of employment floorspace and a maximum of 12,920 sqm of retail floorspace in the Clonburris Retail Core area (CUC-S1).													
The catchment for the implementation of the Place Making requirement for Clonburris Retail Core area is delineated in Figure 4.1 and corresponds with the Clonburris North West, Clonburris North East, Clonburris South East and Clonburris South West Development Areas (See Chapter 3). The cumulative target of dwellings units in the Clonburris Place Making catchment is 4,221. The Planning Scheme requires the proportionate construction of the Clonburris Retail Core in tandem with the residential units in the Clonburris catchment. As such, every 1,000 units constructed in the Clonburris catchment (Fig 4.1) requires the construction of a minimum of 25% of Clonburris Retail Core Area and associated public realm works. The 25% is a minimum and can be exceeded or completed sooner than required.													
Table 4.4 Place making requirement for Clonburris													
<table><tr><td>Delivery of Clonburris Retail Core (Sub Sector CUC- S1)<ul style="list-style-type: none">- Linked to residential units constructed in Clonburris catchment (Figure 4.1).- Clonburris Retail Core is defined as Sub Sector CUC-S1 in Figure 4.2 and the Retail Core boundary delineated on the Figure 4.1</td><td>Every 1,000 units constructed in the catchment requires construction of a minimum of 25% of Clonburris Retail Core.<p>The percentage of the proposed/ completed development in the Retail Core will be assessed by the Planning Authority based on the number of blocks completed, the delivery of urban grain and the delivery of public realm works.</p><p>Planning applications for residential development in the catchment shall include a Place Making Strategy to demonstrate compliance with this table. Proposals in the Retail Core are required to detail associated public realm works including for the urban square and pedestrian streets.</p><p>Proposals in the Retail Core are required to be in accordance with the requirements of the Planning Scheme.</p></td></tr></table>												Delivery of Clonburris Retail Core (Sub Sector CUC- S1) <ul style="list-style-type: none">- Linked to residential units constructed in Clonburris catchment (Figure 4.1).- Clonburris Retail Core is defined as Sub Sector CUC-S1 in Figure 4.2 and the Retail Core boundary delineated on the Figure 4.1	Every 1,000 units constructed in the catchment requires construction of a minimum of 25% of Clonburris Retail Core. <p>The percentage of the proposed/ completed development in the Retail Core will be assessed by the Planning Authority based on the number of blocks completed, the delivery of urban grain and the delivery of public realm works.</p> <p>Planning applications for residential development in the catchment shall include a Place Making Strategy to demonstrate compliance with this table. Proposals in the Retail Core are required to detail associated public realm works including for the urban square and pedestrian streets.</p> <p>Proposals in the Retail Core are required to be in accordance with the requirements of the Planning Scheme.</p>
Delivery of Clonburris Retail Core (Sub Sector CUC- S1) <ul style="list-style-type: none">- Linked to residential units constructed in Clonburris catchment (Figure 4.1).- Clonburris Retail Core is defined as Sub Sector CUC-S1 in Figure 4.2 and the Retail Core boundary delineated on the Figure 4.1	Every 1,000 units constructed in the catchment requires construction of a minimum of 25% of Clonburris Retail Core. <p>The percentage of the proposed/ completed development in the Retail Core will be assessed by the Planning Authority based on the number of blocks completed, the delivery of urban grain and the delivery of public realm works.</p> <p>Planning applications for residential development in the catchment shall include a Place Making Strategy to demonstrate compliance with this table. Proposals in the Retail Core are required to detail associated public realm works including for the urban square and pedestrian streets.</p> <p>Proposals in the Retail Core are required to be in accordance with the requirements of the Planning Scheme.</p>												
4.4.2 Kishoge Retail Core													

Chapter Four	BFF	PHH	W	SG	Ma	AQ	CA	L	CC	GI	Commentary/recommendation		
<p>In tandem with the construction of residential units, the developers will be required to construct the Kishoge Retail Core. The Retail Core for Kishoge is defined by Sub Sector KUC-S4 and the associated public realm. Figure 4.3 and the Retail Core area for the centre in Figure 4.1 delineate same. The Planning Scheme provides for a target of 253 residential units, a maximum of 2,600 sqm of retail floorspace, a minimum of 4,600 sqm of employment floorspace and a minimum of 1,500 sqm community floorspace in Kishoge Retail Core (KUC-S4)</p> <p>The relevant catchment for the implementation of the Place Making requirement for Kishoge Retail Core area is delineated in Figure 4.1 and corresponds with the Kishoge North West, Kishoge North East, Kishoge South West & Kishoge South East Development Areas (See Chapter 3). The cumulative target units in the Kishoge Place Making catchment is 3,774 units. The Planning Scheme requires the proportionate construction of the Kishoge Retail Core in tandem with the residential units in the Kishoge catchment. As such, every 1,000 units constructed in the Kishoge catchment (Figure 4.1) requires the construction of a minimum of 33% of Kishoge Retail Core area and associated public realm works. The 33% is a minimum and can be exceeded or completed sooner than required.</p>													
<p>Table 4.5 Place Making Requirement for Kishoge Catchment</p> <table><tr><td><p>Delivery of Kishoge Centre (Core Area)</p><ul style="list-style-type: none">- Linked to unit construction in Kishoge catchment.- Kishoge Centre Retail Core is defined as sub sector KUC-S4 (see Figure 4.3)</td><td><p>Every 1,000 units constructed in the catchment requires construction of a minimum of 33% of Kishoge Centre Core.</p><p>The percentage of the proposed/ completed development in the Retail Core will be assessed by the Planning Authority based on the number of blocks completed, the delivery of urban grain and the delivery of public realm works.</p><p>Planning applications for residential development in the catchment shall include a Place Making Strategy to demonstrate compliance with this table.</p><p>Proposals in the Retail Core are required to detail associated public realm works including for the urban square and pedestrian streets.</p><p>Proposals in the Retail Core are required to be in accordance with the requirements of the Planning</p></td></tr></table>												<p>Delivery of Kishoge Centre (Core Area)</p> <ul style="list-style-type: none">- Linked to unit construction in Kishoge catchment.- Kishoge Centre Retail Core is defined as sub sector KUC-S4 (see Figure 4.3)	<p>Every 1,000 units constructed in the catchment requires construction of a minimum of 33% of Kishoge Centre Core.</p> <p>The percentage of the proposed/ completed development in the Retail Core will be assessed by the Planning Authority based on the number of blocks completed, the delivery of urban grain and the delivery of public realm works.</p> <p>Planning applications for residential development in the catchment shall include a Place Making Strategy to demonstrate compliance with this table.</p> <p>Proposals in the Retail Core are required to detail associated public realm works including for the urban square and pedestrian streets.</p> <p>Proposals in the Retail Core are required to be in accordance with the requirements of the Planning</p>
<p>Delivery of Kishoge Centre (Core Area)</p> <ul style="list-style-type: none">- Linked to unit construction in Kishoge catchment.- Kishoge Centre Retail Core is defined as sub sector KUC-S4 (see Figure 4.3)	<p>Every 1,000 units constructed in the catchment requires construction of a minimum of 33% of Kishoge Centre Core.</p> <p>The percentage of the proposed/ completed development in the Retail Core will be assessed by the Planning Authority based on the number of blocks completed, the delivery of urban grain and the delivery of public realm works.</p> <p>Planning applications for residential development in the catchment shall include a Place Making Strategy to demonstrate compliance with this table.</p> <p>Proposals in the Retail Core are required to detail associated public realm works including for the urban square and pedestrian streets.</p> <p>Proposals in the Retail Core are required to be in accordance with the requirements of the Planning</p>												

Chapter Four	BFF	PHH	W	SG	Ma	AQ	CA	L	CC	GI	Commentary/recommendation
			Scheme.								
	⇅/↑	↑	⇅/↑	⇅/↑	↑	⇅/↑	⇅/↑	⇅/↑	⇅/↑	⇅/↑	<p>This linking of residential development with urban centres will provide direct, long term positive effects on Population and Human health and material assets.</p> <p>The implementation and development of the SDZ Planning scheme and there are negative effects associated with this but mitigation measures in the SDZ Planning Scheme and aim to address the most significant of these and ameliorate impacts where possible.</p> <p>Existing mitigation measures notably the Landscape and Park Strategy that includes a biodiversity management plan will be required at preliminary stage, as well as an Invasive Species Control and Management Plan pre development, and the Surface Water Strategy are identified as provided sufficient environmental protection at this phasing stages of the Planning Scheme.</p>
4.5 Local Level Requirements The construction of units in development areas impacted by infrastructure in the 'Local Level Requirements Table' shall be restricted, subject to the delivery of the related infrastructure											

Chapter Four	BFF	PHH	W	SG	Ma	AQ	CA	L	CC	GI	Commentary/recommendation
	⇅/↑	↑	⇅/↑	⇅/↑	↑	⇅/↑	⇅/↑	⇅/↑	⇅/↑	⇅/↑	Impacts as above and as per comments regarding overall phasing and development.
4.6 Sequential Approach to development in neighbourhoods <p>The Planning Scheme does not specify a commencement location for the construction of residential units for any phase of residential development. The location for commencing development in the Planning Scheme and within Development Areas is flexible. However, apart from exceptional circumstances, when development commences in a Development Area, subsequent permissions and development in the subject Development Area shall be required to integrate with the previous development in a sequential way.</p> <p>As part of any planning application, the developer shall demonstrate a rationale for the site selection of the proposed development in relation to other constructed, permitted or proposed development. This should form part of a Design Statement (See Section 2.8.2). In general, integrated and adjoining development will be required to prevent piecemeal and isolated development. Developers are encouraged to sequence the delivery of the units radially from the Urban Centres.</p>											
	⇅/↑	↑	⇅/↑	⇅/↑	↑	⇅/↑	⇅/↑	⇅/↑	⇅/↑	⇅/↑	Avoiding piecemeal and isolated development is an important element of the scheme and will avoid adverse effects on population and human health and material assets, landscape SEOS in particular.
4.7 Operation of Phasing Programme <p>Any required works may be brought forward and completed sooner than scheduled in phasing. In general, unless all required works for a particular phase of residential development are completed, the total number of dwelling units that may be occupied will not increase beyond that phase. In exceptional circumstances, the Development Agency will consider the substitution of equivalent works from a later phase, subject to consideration of the rationale for the substitution. Any substitution must be demonstrated in writing to be equivalent in terms of residential amenity, be in accordance with the Planning</p>											

Chapter Four	BFF	PHH	W	SG	Ma	AQ	CA	L	CC	GI	Commentary/recommendation
<p>Scheme, support a sequential development of the Scheme and the proper planning and sustainable development of the area. For example, the substitution of physical infrastructure works in lieu of social infrastructure or place making requirements will generally not be accepted. The substitution clause is not relevant to the infrastructure in the Neighbourhood Requirements Table or the Place Making Requirements Table.</p> <p>A 'Roll - Over' mechanism may operate between any two phases. In the event of the maximum permissible number of units being completed before the required facilities and infrastructure in any phase, a 'Roll - Over' of up to 250 dwelling units may be constructed in the following phase, subject to planning permission. These residential units may not be constructed until the developer demonstrates the provision of requirements from the previous phase is ongoing and the units may not be occupied until the requirements in the previous phase have been completed</p>											
	⇅/↑	↑	⇅/↑	⇅/↑	↑	⇅/↑	⇅/↑	⇅/↑	⇅/↑	⇅/↑	Impacts as above and as per comments regarding overall phasing and development.
<p>4.9 Monitoring and Review</p> <p>A review of the Phasing shall be undertaken by the Development Agency as part of Phase 2, i.e. before phase three can commence, to ensure that the required infrastructure and facilities detailed in Phases 1-2 of the Planning Scheme have been provided and are operational and that the overall Scheme is progressing and continues to progress in a satisfactory manner. The review shall include a Strategic Environmental Assessment monitoring report. SDCC is responsible for collating existing relevant monitored data, the preparation of a monitoring report, the publication of this report.</p>											
	↑	↑	↑	↑	↑	↑	↑	↑	↑	↑	Review and monitoring of the scheme is essential and will align with a SEA Monitoring Report –this will inform overall SEA monitoring and assess how the SEOs for the Planning scheme are being achieved.

