



A vibrant community offering a new way of living



Clonburris Strategic Development Zone (SDZ) Draft Planning Scheme

SEA ENVIRONMENTAL REPORT NON TECHNICAL SUMMARY

September 2017

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1.1 Purpose of the Non- Technical Summary

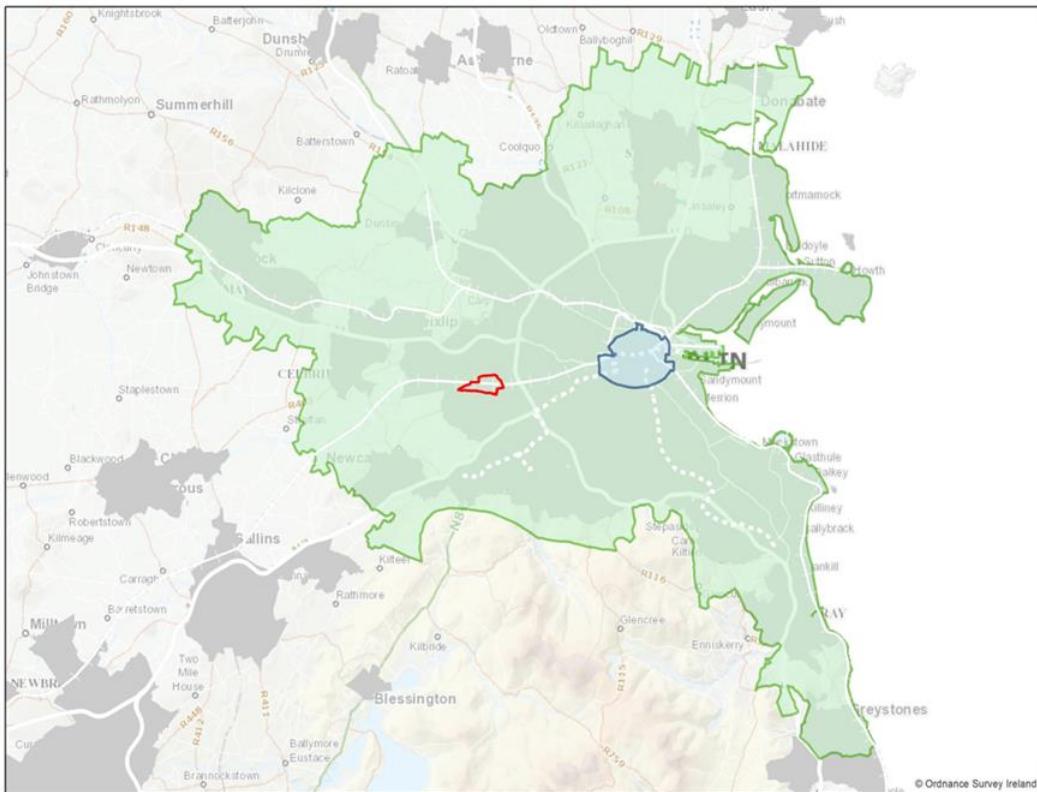
This is the Non- Technical Summary of the environmental report for the Strategic Environmental Assessment (SEA) of the SDZ Draft Planning Scheme prepared for the lands at Clonburris-Balgaddy, in South Dublin County. The purpose of the SEA is to formally and systematically assess the likely significant effects of implementing a plan or programme, in this instance the above Planning Scheme.

The Environmental Report identifies the significant environmental effects of the plan on the environment and where significant effects are identified, recommends appropriate measures to avoid or reduce such effects. As the plan is being prepared the SEA identifies and influences proposals, particularly through avoiding areas of greatest environmental sensitivity. This Environmental Report forms part of the SEA process, documents the SEA process and is the key consultation document in the SEA process as it facilitates interested parties to comment on the environmental issues associated with the plan itself. This Environmental Report has been prepared under the Planning and Development (Strategic Environmental Assessment) Regulations 2004 (S.I 436 of 2004).

1.2 Background and Context

In 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). Figure 1 shows the location of the lands within the Greater Dublin Region.

Figure 1 SDZ Planning Scheme and Greater Dublin Region. (source: National Transport Authority).



A 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.

1.3 Plan Structure and Summary

The Planning Scheme has been prepared and is on public display; the contents of the Planning Scheme are as follows:

1. Introduction

- 2.1 Land Use and Density
- 2.2 Movement and Transport
- 2.3 Green & Blue Infrastructure
- 2.4 Urban Centres
- 2.5 Retail Development
- 2.6 Economic Development
- 2.7 Community Facilities
- 2.8 Built Form and Design
- 2.9 Services, Infrastructure & Energy Framework
- 2.10 Landscape & Open Space
- 2.11 Biodiversity & Natural Heritage
- 2.12 Archaeological and Architectural Heritage
- 2.13 Overall Proposals for Development
- 3.0 Development Areas
- 4.0 Phasing and Implementation

Natura 2000 and Environmental Reports

Strategic Environmental Assessment (SEA) Environmental Report
Appropriate Assessment Screening Report

Accompanying Documents

Transport Assessment and Transport Strategy
Strategic Flood Risk Assessment
Surface Water Strategy
Retail Study
Employment Floor Area Demand Study
Energy Masterplan
Archaeological and Architectural Heritage Inventory

2 Contents of SEA Environmental Report

2.1 Approach to the SEA.

The SEA has been carried out alongside the SDZ Planning Scheme preparation. Table 1 below sets out the stages in the SEA process and how these relate to the plan preparation so far.

Table 1 Stages in the SEA and Plan preparation process

| Stage of SEA | Plan |
|---|--|
| Stage 1 Screening | Screening is the first stage of SEA to determine if the plan requires full SEA. In the case of SDZ Planning Schemes they automatically require full SEA so this stage is not required in this instance. |
| Stage 2 Scoping | <p>The purpose of this stage is to work out what environmental topics and issues should be included in the SEA. The Scoping report was issued to statutory bodies including the EPA and National Parks and Wildlife Service to discuss the potential environmental issues, baseline information, and approach to the SEA.</p> <p>Pre-draft consultation that was held in relation to the Draft Planning Scheme also raised a number of environmental issues and these helped to inform the Scope of the SEA also.</p> |
| Stage 3 Environmental Report-Current Stage | <p><i>This is the current stage of the SEA and the Planning Scheme. The Environmental Report tells the story of the Planning Scheme and how environmental considerations have been addressed and included during the draft plan preparation process.</i></p> <p><i>The screening for appropriate assessment is also discussed in the Environmental Report.</i></p> <p><i>This report is the main consultation document of the SEA process and hence is on display alongside the plan along with supporting reports.</i></p> <p><i>Following the public display period there may be changes to the plan and the SEA will also assess these and update the Environmental Report as required.</i></p> |
| Stage 4 SEA Statement | This stage is the final output of the SEA process and tells the story of the SEA process. It is prepared once the plan is finalised and adopted. |

2.2 Relationship to other relevant plans and programmes.

Under the SEA Directive, the relationship between the plan 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 of the SEA ER and a list of same is presented in Chapter 3 of the SEA ER.

The preparation of the plan 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 draft Planning scheme has been prepared having regard to the environmental protection objectives contained within the South Dublin County Development Plan 2016-2022. In addition, the SDZ Planning Scheme has been designed and developed with the aim of sustainable development so during the plan preparation process areas of particular

environmental sensitivity have been avoided where possible. The SDZ Planning Scheme also contains a number of provisions and environmental protection and enhancement measures that will also apply during implementation.

2.3 Current Environmental Baseline.

Baseline information was gathered during the preparation of the plan, in particular ecology surveys were carried out during the two year period 2015-2017, as well as detailed technical assessments such as flood risk and surface water management. An overview of the key environmental baseline is presented below whilst Chapter 4 of the SEA ER provides greater detail and figures for this information.

The SDZ Planning Scheme area covers approximately 280 hectares in an area west of Clondalkin, south of Lucan. It is bisected by the main Dublin-Kildare railway line and the Grand Canal forms much of its southern boundary.

2.3.1 Baseline overview

Population and Human Health

The SDZ Planning Scheme lands are largely former agricultural landscapes. Despite its location between the communities of Lucan and Clondalkin, the site has never been developed to any significant degree. 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.

In the context of SDZ Planning Scheme, the railway line and existing roads operate as the greatest noise generators although the railway currently operates at just above desirable daytime noise limits and well within the desirable night time noise limits. Air Quality is generally good within the area based on real time monitoring.

Biodiversity, Flora and Fauna.

The Grand Canal is a proposed Natural Heritage Area. Within the SDZ lands, grassland is the most common habitat. 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.

Watercourses within the lands include the Grand Canal, the Griffeen River, the western Feeder stream and drainage ditches. Over 30km of hedgerows are present on the SDZ lands as well as areas of young woodland and scrub.

A total of 44 species of bird were observed during the overall survey work. 5 bat species were recorded with much activity concentrating on the Grand Canal Corridor and the trees along the northern towpath. The 12th lock on the western boundary of the SDZ Planning Scheme lands is an important area for mammals generally. Other mammals recorded include rabbit, fox, brown rat, pygmy shrew, stoat, grey squirrel and hedgehog.

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

The lands at present consist largely of fields divided by a network of mainly overgrown hedgerows, some of which are important historically, such as the old Barony boundary hedgerow.

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. The latest information from the www.Catchments.ie website shows the overall Water Framework Directive status of the Griffeen River to be Moderate (Q3-4) whilst the Camac River is classified as Poor (Q2-Q3) according to samples taken at the EPAs monitoring station at Riversdale Estate Bridge.

The Strategic Flood Risk Assessment for the SDZ Planning scheme, having reviewed the proposed land uses within the SDZ Draft Planning Scheme, states 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. A Surface Water Strategy has also been prepared for the Planning Scheme that plans for increased surface water run off and the means to address this through Sustainable Urban Drainage Systems.

Soil and Geology

The lands are underlain by limestone bedrock in common with much of the northern part of South Dublin County. The soils in the SDZ lands are identified in the luvisol group; these are soils with clay enriched subsoil.

Climate Change and Energy

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.

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

Cultural Assets

Within the SDZ lands, there are two archaeological sites that have been listed in the Sites and Monuments Record for County Dublin. 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.

Material Assets

Material assets can be explained as the critical infrastructure essential for the functioning of society such as: electricity generation and distribution, water supply, wastewater treatment and transportation.

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 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.

Irish Water confirms that there is generally sufficient capacity in the public water services networks in the vicinity of the SDZ site to connect water service infrastructure (provided by the developer) to Irish Water 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 generated within the Clonburris SDZ will drain to the Ringsend Waste Water Treatment Plant. At present this plant is at capacity. 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.

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. 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.

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 Outer Ring Road.

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

Landscape

The SDZ lands are located in a wedge of land – formerly a continuation of the agricultural landscape lying to the west. The lands are generally low lying, flat and open with small fields. 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).

It is 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.

As the zone is 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.

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. 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.

Table 2 summarises the key environmental issues identified for each SEA topic:

Table 2 Key Environmental issues for SEA Topics

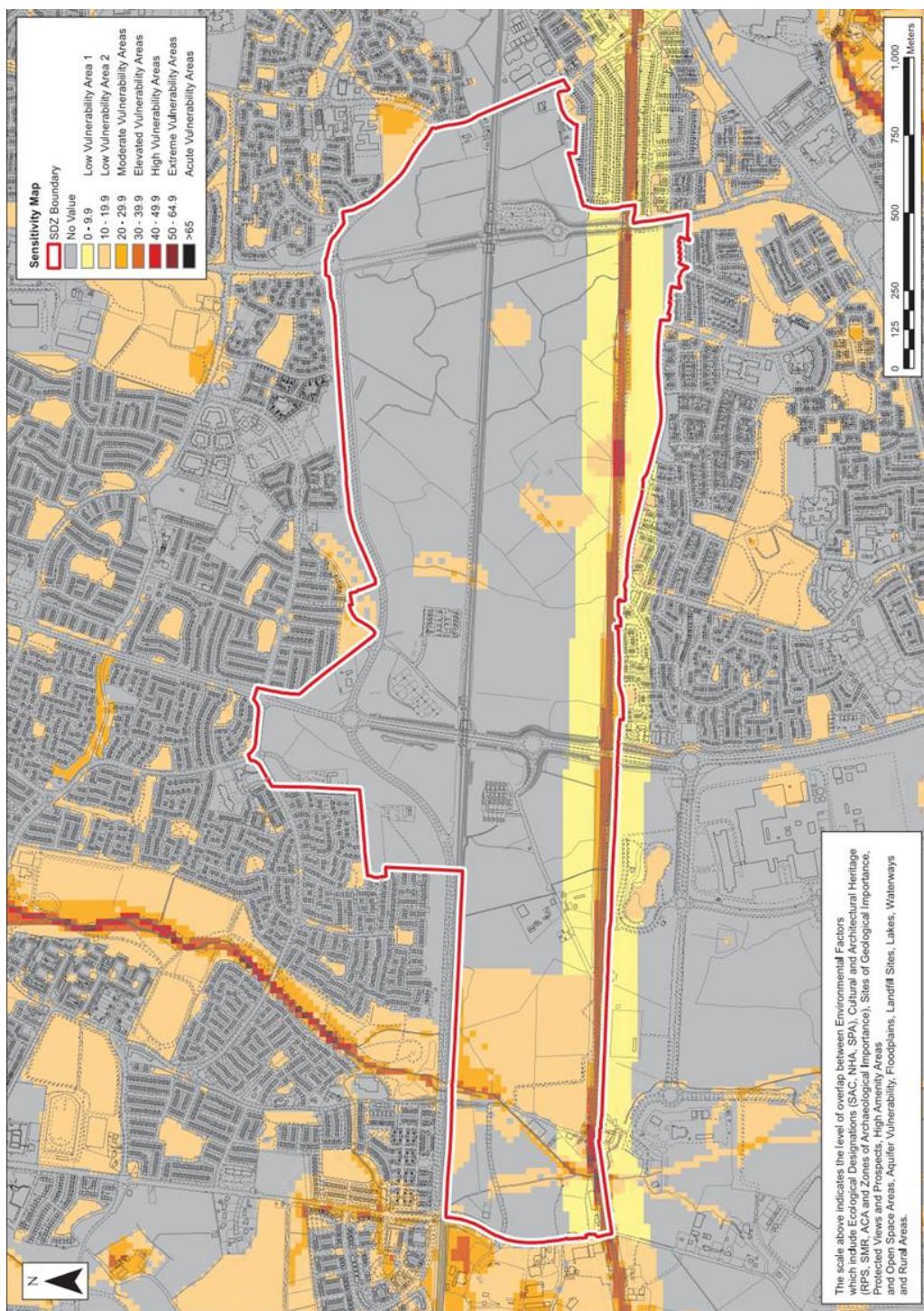
| SEA Topic | Key issues |
|--------------------------------------|---|
| Population and Human health | <ul style="list-style-type: none"> • Provision of community facilities, public open space, housing and design; • Transport Network and Public Transport; • Environmental Health • Light and Noise pollution 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. |
| Biodiversity, Flora and Fauna | <ul style="list-style-type: none"> • 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 |

| SEA Topic | Key issues |
|---------------------------|--|
| Water | <ul style="list-style-type: none"> 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. Invasive species –three are identified in the SDZ lands. <p>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.</p> <ul style="list-style-type: none"> 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. <p>Other issues include the surface water management and the association between soil sealing and surface water run off.</p> |
| Soil and Geology | <ul style="list-style-type: none"> 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. <p>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</p> |
| Climate Change and energy | <ul style="list-style-type: none"> Flood risk and increased flood risk Renewable energy and solar panels |
| Cultural Assets | <ul style="list-style-type: none"> 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 |

| SEA Topic | Key issues |
|-----------------------------|---|
| Material Assets | <ul style="list-style-type: none"> Survey to establish if any architectural heritage on and in proximity to site Waste management facilities Proper litter control and waste separation, recycling and composting Concerns in relation to existing traffic capacity on roads Improved public transport <p>In addition, other issues relating to material assets include:</p> <ul style="list-style-type: none"> 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 |
| Landscape | <ul style="list-style-type: none"> Consider provision of allotments and roof gardens Design and layout of housing, Grand Canal and open space considerations. <p>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.</p> |
| Green Infrastructure | <p>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 Management Strategy has identified a series of SUDs features, and these can be designed to support and enhance blue infrastructure through the SDZ Planning scheme lands.</p> |

The map Figure 2 shows the overall environmental sensitivity for the plan area and follows the same approach (ie: ranking of environmental parameters) as that used in the South Dublin CDP 2016-2022 SEA process. Grey areas are of lesser overall environmental sensitivity, whilst orange to red show areas of greater overall environmental sensitivity.

Figure 2 Environmental Sensitivity and SDZ Planning Scheme



3 Strategic environmental objectives and consideration of alternatives

3.1 Strategic Environmental Objectives

These are the criteria against which the elements of the Draft Planning Scheme are assessed. They are derived from the South Dublin County Development Plan 2016-2022 where possible, with some specific SEOS developed for the Planning Scheme.

Table 3 Strategic Environmental Objectives

| SEA Topic | Strategic Environmental Objectives |
|-----------------------------|--|
| Biodiversity | To avoid loss of habitats, geological features, species or their sustaining resources in <i>and outside of</i> ¹ designated and ecological sites |
| Flora and Fauna | 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 | To protect human health from hazards or nuisances arising from traffic and incompatible landuses <i>in particular noise and light pollution</i> |
| Noise | |
| Water | To maintain and improve, where possible, the quality of rivers, lakes and surface water including <i>Grand Canal, Griffeen River and streams within the Clonburris SDZ Planning Scheme.</i> |
| | 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 | <i>To conserve soil resources where possible</i> |
| 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 <i>SDZ Planning Scheme</i> 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 | <i>To minimise air, noise and light pollution where possible.</i> |
| Cultural Heritage | To protect the archaeological heritage of <i>Clonburris SDZ Planning Scheme</i> with regard to entries to the Record of Monuments and Places - |

¹ Amended on foot of submission by NPWS at SEA Scoping Stage.

| | |
|----------------------------------|--|
| | 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 <i>and the Grand Canal</i> |
| Climate Change and energy | <i>To integrate climate change adaptation to the Clonburris SDZ Planning Scheme</i> <i>To enhance energy efficiency through the Energy Masterplan</i> |
| Green Infrastructure | <i>To support green infrastructure measures through the Planning Scheme where possible.</i> |

3.2 Consideration of Alternatives

SEA is also required to assess 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**.

Six Workshops were carried out with staff of South Dublin County Council and the urban designers during the summer of 2016. In September 2016, a specific SEA workshop was held that assessed the emerging scenarios with a view to identifying an emerging preferred scenario. The three main scenarios considered were:

Kishoge District Centre: In this alternative, the scheme would include two defined centres of varying scale and function with Kishoge serving as a higher level District Centre. These two centres would locate around the railway stations of Kishoge (built but not open) and Fonthill (open).

Fonthill District Centre: 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 with Fonthill serving as a higher level District Centre. The centres would locate around the railway stations of Kishoge and Fonthill.

Co-located District Centre: 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.

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 was prepared. As this layout was developed, each version 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 considerable historical importance, as well as an ecological feature.
- 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.

4 Assessment of significant environmental effects and mitigation measures.

4.1 Approach

As the plan process has been ongoing and an iterative process with the SEA, areas of particular environmental sensitivity have been avoided in the first instance where possible, and the plan elements as they have evolved have been amended during the process. 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 have formed part of the mitigation measures that will be integrated into the Planning Scheme –see Table 4 for further details.

Key positive effects have been identified for population and human health, transport and green infrastructure through the provision of integrated landuse and transport, retention of hedgerows, integrating blue and green infrastructure (e.g. ponds for surface water run off), and buffer zones around the Grand Canal and Griffreen.

Adverse effects on biodiversity, soil, water and landscape are identified for the Planning Scheme therefore additional mitigation measures have been identified to strengthen the protection of the Grand Canal ecological corridor, as well as rewording particular measures in the Planning Scheme, also to further embed sustainable development across the Planning Scheme.

Examples of mitigation measures that included additional SEA text are provided below; new wording from the SEA process are shown in **green, bold** font.

Chapter 1 Key Principles

- To maximise **appropriate** access to and use of the Grand Canal, Griffreen 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 Planning Scheme as detailed in the accompanying SEA ER, and associated environmental assessments are applied and adhered to in the Planning Scheme implementation.**

2.10.2 Proposed Open Spaces

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 Planning lands.**

- The Biodiversity Management Plan shall incorporate the following measure:
- 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; and**
- **Opportunities to enhance the biodiversity value of SUDs measures where relevant should be included in habitat management plans.**

The Table below summarises the key environmental effects identified for all the alternatives considered for the Planning Scheme, including the preferred option. It also shows the mitigation measures included to address these effects.

Table 4 Environmental issues and Mitigation Measures

| SEA Theme: | Comment | Mitigation Measures |
|---|--|--|
| Water Resources including Flooding | <p>Water and Flooding: Surface water movement – relatively flat topography of some of the SDZ lands.</p> <p>Drainage and flow of surface water.</p> <p>Design considerations around blue infrastructure, open space, green infrastructure and populations.</p> | <p>Surface Water Strategy and specific objectives therein.</p> <p>Green and Blue Infrastructure measures</p> <p>Parks and Landscape Strategy.</p> |
| Soil and Geology | <p>Soil sealing and water flows</p> <p>Potential Soil contamination-historical dumping</p> <p>Invasive species-risk of introduction and spread particularly around the water courses.</p> | <p>Surface Water Strategy.</p> <p>Development control measures</p> <p>Requirement to prepare Invasive Species Management and Control Plan (Section 2.11 the SDZ Planning Scheme), MM 2 CEMPs</p> |
| Biodiversity, Flora and Fauna | Carbon sinks and flooding | Retention of Barony hedgerows and priority of north-south aligned hedgerows within the overall Scheme |

| SEA Theme: | Comment | Mitigation Measures |
|---|--|---|
| | <p>Balance between biodiversity and open space</p> <p>Canal setback to be further considered.</p> | <p>Provisions in Chapters 2.3 and 2.11 regarding hedgerows and treelines.</p> <p>MM1 Preparation of Biodiversity Management Plan as part of Parks and Landscaping Strategy.</p> <p>Green and Blue Infrastructure provisions (Chapter 2.3).</p> <p>50m set -back for buildings and 30m for development.</p> <p>Requirement for Ecological Impact Assessments</p> <p>See Chapter 2.11 ecological corridors.</p> |
| 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>Preparation and implementation of Surface Water Strategy as part of the SDZ Planning Scheme.</p> <p>Chapter Four 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>Railway Ecological Corridor (Chapter 2.11)</p> <p>Chapter 2.2. addresses pedestrian and cycle movement as well as the Street Network and Vehicular Movement</p> |
| | <p>Blue infrastructure, green infrastructure, open space and designing for user friendly and non user friendly blue infrastructure (eg ponds).</p> | <p>Surface Water management Strategy and Chapter 2.3 Green infrastructure and Blue infrastructure provides considerable detail and provisions for this issue.</p> |

| SEA Theme: | Comment | Mitigation Measures |
|--|---|---|
| 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 | Chapter 2.2 addresses railway and bus transportation. Surface Water management Strategy as well as Chapter 4 Phasing addresses the phasing of surface water and water infrastructure capacity. |
| Cultural heritage | Unknown/undiscovered archaeological resources | Chapter 2.12 of the SDZ Planning Scheme addresses potential archaeological resources. |
| Green infrastructure | | Chapter 2.3 of the SDZ Planning Scheme. |

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.

5 Monitoring Measures

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.

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, it is recommended that 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 SDCC Development Plan;
- 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.

Table 5 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.

Table 5 Monitoring Measures

| SEA Topic | Strategic Objectives | Environmental Indicator | Target | Data Source |
|------------------------|--|---|--|---|
| Biodiversity | To avoid loss of habitats, geological features, species or their sustaining resources in designated and ecological sites | Percentage of relevant habitats lost as a result of implementation of the Planning Scheme | 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 |
| Flora and Fauna | 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 | Number of significant adverse impacts, including direct, cumulative and indirect impacts, to relevant habitats, geological features, species or their sustaining resources in designated ecological sites by development within or adjacent to these sites as a result of implementation of the SDZ Planning Scheme | No significant adverse impacts, including direct, cumulative and indirect impacts, to relevant habitats, geological features, species or their sustaining resources in designated ecological sites by development within or adjacent to these sites as a result of implementation of the SDZ Planning Scheme | Designated ecological sites mapping, Development Management Process in SDCC Council & Consultation with the National Parks |
| | To sustain, enhance or - where relevant - prevent the loss of ecological networks or parts | Area of Biodiversity Network (County's primary ecological corridors which has been lost | No ecological connectivity provided by the County's primary ecological corridors to | and Wildlife Service Primary ecological corridors mapping, |

² Amended on foot of submission by NPWS at SEA Scoping Stage.

| SEA Topic | Strategic Objectives | Environmental Indicator | Target | Data Source |
|-----------------------------|---|---|--|---|
| | thereof which provide without mitigation. significant connectivity between areas of local biodiversity | Percentage loss of functional connectivity without remediation resulting from development provided for in the Planning Scheme | be lost without mitigation as a result of implementation of 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 | CORINE mapping and Development Management Process in SDCC |
| Population and human health | 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 ³ . | Reduce number of people exposed to traffic noise and air quality levels which endanger health and quality of life | South Dublin County Council, EPA |
| Air Quality and Noise | <i>To minimise air, noise and light pollution where possible.</i> | <i>Number of complaints from SDZ Planning Scheme re; noise, light and air quality.</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 |

³ Currently air quality monitoring closest station is at Tallaght.

| SEA Topic | Strategic Objectives | Environmental Indicator | Target | Data Source |
|-------------------------|---|---|--|---|
| 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 2006/118/EC | SDCC Irish Water EPA |
| | 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 Management Strategy for SDZ Planning Scheme | No significant flood events associated with development activities on SDZ Planning Scheme. | Development Management Process in South Dublin County |
| 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 | 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 | Development Management Process in SDCC As above Environmental Services Dept. SDCC |

| SEA Topic | Strategic Objectives | Environmental Indicator | Target | Data Source |
|------------------------|---|--|---|--|
| | | volume of waste sent to landfill | municipal waste and its diversion from landfill | Annual Waste Arisings Report from Environmental Services Dept. SDC |
| 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 | <i>Phasing Programme of Planning Scheme</i> | All new developments to require appropriate waste water systems. | SDCC Irish Water EPA |
| | To reduce car dependency within the <i>SDZ Planning Scheme</i> 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 | 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-mechanical means | |
| | | Percentage of population within the <i>SDZ Planning Scheme</i> travelling to work or school by public transport or non-mechanical means <i>as set out in Transport Study for SDZ Planning Scheme</i> | A decrease in the average distance travelled to work or school by the population of the County | |
| | To minimise waste production | Volume of waste recycled and | To meet national and EU Development | |

| SEA Topic | Strategic Objectives | Environmental Indicator | Target | Data Source |
|-------------------|---|--|--|---|
| | <p>and reduce the volume of waste to landfill and to operate sustainable waste management practices <i>including promotion of circular economy</i></p> | <p>volume of waste sent to landfill</p> <p><i>Recycling facilities provided on phased basis of Planning Scheme</i></p> | <p>targets on the recycling of municipal waste and its diversion from landfill</p> | <p>Management Process in SDCC</p> <p>As above</p> <p>Environmental Services Dept. SDCC</p> <p>Annual Waste Arisings Report from Environmental Services Dept. SDCC</p> |
| Cultural Heritage | <p>To protect the archaeological heritage of Clonburris SDZ 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.</p> | <p>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) - protected</p> <p><i>Number of archaeological surveys required as part of planning applications</i></p> <p><i>Conditions attached to permissions on archaeological monitoring during excavations.</i></p> | <p>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)</p> <p><i>Protect unknown archaeological resources on SDZ Planning Scheme Lands.</i></p> | <p>SDCC Development Control</p> |
| | <p>To preserve and protect the</p> | <p>Percentage of entries to the Record</p> | <p>Protect entries to the Record</p> | <p>SDCC</p> |

| SEA Topic | Strategic Objectives | Environmental Indicator | Target | Data Source |
|-----------|--|---|--|-------------|
| | <p>special interest and character of Protected Structures (and/or their context within the surrounding landscape where relevant) protected.</p> <p>Record of Protected Structures, , and their context within the surrounding landscape where relevant</p> | <p>Number of architectural condition surveys attached to planning applications.</p> | <p>of Protected Structures (and/or their context within the surrounding landscape where relevant)</p> <p><i>Renovate and reuse architectural heritage structures and features</i></p> | |
| Landscape | <p>To protect and avoid significant adverse impacts on the landscape, landscape features and designated scenic routes; especially with regard to areas of high amenity <i>and the Grand Canal</i></p> | <p>The creation of a sense of place and coherence/ appreciation for the overall setting and context of SDZ Planning Scheme.</p> <p>The preparation and implementation of the Landscape Strategy in Phase 1</p> <p>Number of development applications with landscape and habitat plans and Design Statements.</p> <p>Amount of land allocated to temporary greening measures</p> | <p>Creation of sense of place with all phases of development associated with SDZ Planning Scheme.</p> | SDCC |

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

6 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.