



South Dublin County Council

Development Plan 2016 – 2022

A VISION FOR SOUTH DUBLIN'S FUTURE

Proposed Variation No. 1

Zoning Objective Amendment on Lands at Grangecastle West

Strategic Environmental Assessment (SEA)

Non Technical Summary

February 2018

Document Stage	Document Version	Prepared by
Draft	1	Co-ordinator Ruth Minogue MCIEEM
Checked	1	NC, South Dublin County Council

This report has been prepared by Minogue and Associates with all reasonable skill, care and diligence. Information report 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 Clifton Scannell Emerson Associates Consulting Engineers on behalf 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.

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1.0 Introduction

This is the Non- Technical Summary of the environmental report for the Strategic Environmental Assessment (SEA) of variation (Variation No.1) to the South Dublin County Development Plan 2016-2022 (SDCDP 2016-2022). 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 Variation No 1.

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) (as amended).

1.1 Background to the Proposed Variation

It is proposed to extend Grange Castle Business Park by rezoning an area of 193.47 hectares west of the existing Business Park which is operated by South Dublin County Council in partnership with the Industrial Development Authority (IDA). This proposed rezoning, will form a proposed variation to the existing South Dublin County Development Plan 2016-2022 (SDCDP). This plan came into effect in June 2016 and established the framework for the development over a six year period for the county. The SDCDP was subject to Strategic Environmental Assessment and Habitats Directive Assessment. Within the hierarchy of landuse plans, the proposed variation should be compliant with the policies, objectives of the SDCDP, as well as national and regional plans and guidelines.

A specific local area objective is included in the SDCDP 2016-2022 for these lands, as follows:

ET3 SLO 1: To conduct a review of the zoning of lands south of the Grand Canal and west and north of the R120, including lands adjoining Peamount Healthcare, with a view to preparing a long term plan for the expansion of the Grange Castle Economic and Enterprise Zone to this area, to accommodate strategic investment in the future, while also seeking to provide public open space along the Canal, including a natural heritage area in the vicinity of the historic canal quarries at Gollierstown.

Figure 1.1 below shows the lands proposed for the Variation outlined in Red.



Figure 2.1 Variation No 1 Lands outlined in Red (indicative)

1.1.1 Current Zoning

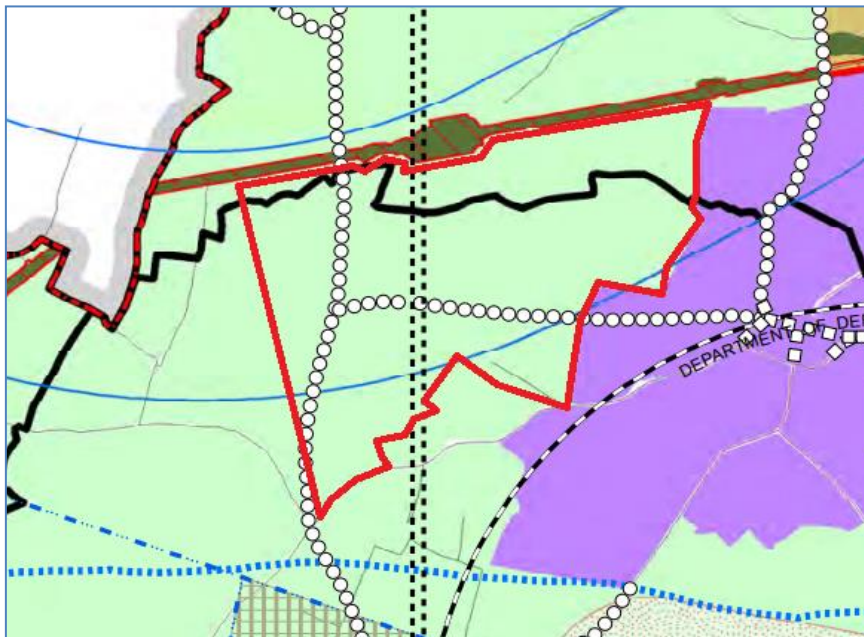


Figure 2.1 Current Zoning in South Dublin County Development Plan 2016-2022

The proposed site is currently zoned RU within the SDCDP 2016-2022 with the objective ‘to protect and improve rural amenity and provide for the development of agriculture’. It is proposed to change this zoning from RU to Enterprise and Employment: ‘To Provide for Employment and Enterprise related uses.’

2.0 CONTENTS OF SEA ENVIRONMENTAL REPORT

2.1 Approach to the SEA.

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

Table 2.1 Stages in the SEA and Plan preparation process

Stage of SEA	Plan
Stage1 Screening	Screening is the first stage of SEA to determine if the plan requires full SEA. The Variation was screened and it was determined that full SEA is required.
Stage 2 Scoping	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. One response was received by the EPA and this has informed the scope of the SEA.
Stage3 Environmental Report-Current Stage	<i>This is the current stage of the SEA and the Variation. The Environmental Report tells the story of the Variation and how environmental considerations have been addressed and included during the preparation process. The screening for appropriate assessment is also discussed in the Environmental Report. This report is the main consultation document of the SEA process and hence is on display alongside the plan along with supporting reports. 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>
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 Variation 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.

Variation No.1 has been prepared having regard to the environmental protection objectives contained within the South Dublin County Development Plan 2016-2022.

2.3 Current Environmental Baseline.

Baseline information was gathered during the preparation of the variation, in particular ecology surveys were carried out in-2017, as well as detailed technical assessments such as air quality, noise and strategic flood risk assessment. 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.

2.3.1 Biodiversity, Flora and Fauna

The land cover within the Variation Lands is dominated by intensively managed cultivated lands. The principal crops noted within the lands during late September 2017 were gooseberries and broadbeans. At this time crops were harvested and the majority of the area was tilled. The land cover is also characterised by large field-size pattern and much of the field boundaries comprise box-cut hedgerows.

The Grand Canal pNHA runs adjacent to the northern boundary of the site, while one watercourse, the Coldblow/Lucan Stream flows north through the site. This stream is a direct tributary of the River Liffey, the confluence point for which is located approximately 4km to the north (and downstream) of the Variation Lands.

The lands occurring within the Variation Lands are not subject to any statutory conservation designations. The nearest conservation area to the Variation Lands is the Grand Canal pNHA, which bounds the northern boundary of the Variation Lands. In addition the Coldflow/Lucan Stream which flows north through the Variation Lands and the Griffeen River to the east of the Variation Lands drain into the River Liffey and the Liffey Vally pNHA.

2.3.2 Population and Human Health

The Variation Lands are located in South Dublin County alongside the border of Kildare County and are characterised primarily by agricultural landscape. There are very few residences located in this proposed development area. The Electoral District (ED) in which the lands are located is the Newcastle ED. The larger of the surrounding South Dublin County EDs which border the Newcastle ED are Rathcoole, Lucan St. Helen's, Clondalkin Dunawley and Clondalkin Village. Two EDs in Kildare County also adjoin the Newcastle ED; Leixlip and Donaghcumper EDs.

The European Commission's Strategic Environmental Assessment (SEA) Directive (2001/42/EC) indicates that human health should be considered in the context of environmental pathways which may affect health. These pathways would include environmental factors such as air quality, noise, water and soil quality. All can contribute to negative effects on human health by facilitating the transport of contaminants or pollutants. An evaluation of the effects of these pathways on health, by considering the accepted standards of safety in dose, exposure or risk of air quality and noise levels for example, is considered appropriate, as these standards have been arrived at via scientific and medical research .

2.3.3 Soil and Geology

The Variation Lands are located on a large portion of partially underdeveloped lands located between the Grange Castle Business Park and the Newcastle Road (R120), Clondalkin, Dublin 22. The land is a mixture of agricultural (currently mainly used as pasture land predominantly for livestock grazing to the west of the R120 and to the north of the canal), and residential. According to the EPA on-line database, there are a number of licensed IPPC facilities in the locality (Takeda Pharma Ltd and Pfizer Biotech) and there are no licensed waste sites in the vicinity. Consultation with South Dublin County Council confirmed that there are no known illegal/historic landfills within 500 metres of the lands. A number of residential properties bound the site to the south and south-west.

2.3.4 Water Resources

The proposed lands for rezoning is located within the Eastern River Basin District (ERBD) and within the River Liffey catchment.

The River Liffey catchment encompasses an area of approximately 1,369km². The river extends from the mountains of Kippure and Tonduff in County Wicklow to the sea at Dublin Bay. The main channel covers a distance of approximately 120km and numerous tributaries enter along its course. The Griffeen River is the nearest water course to the site and is a tributary of the River Liffey.

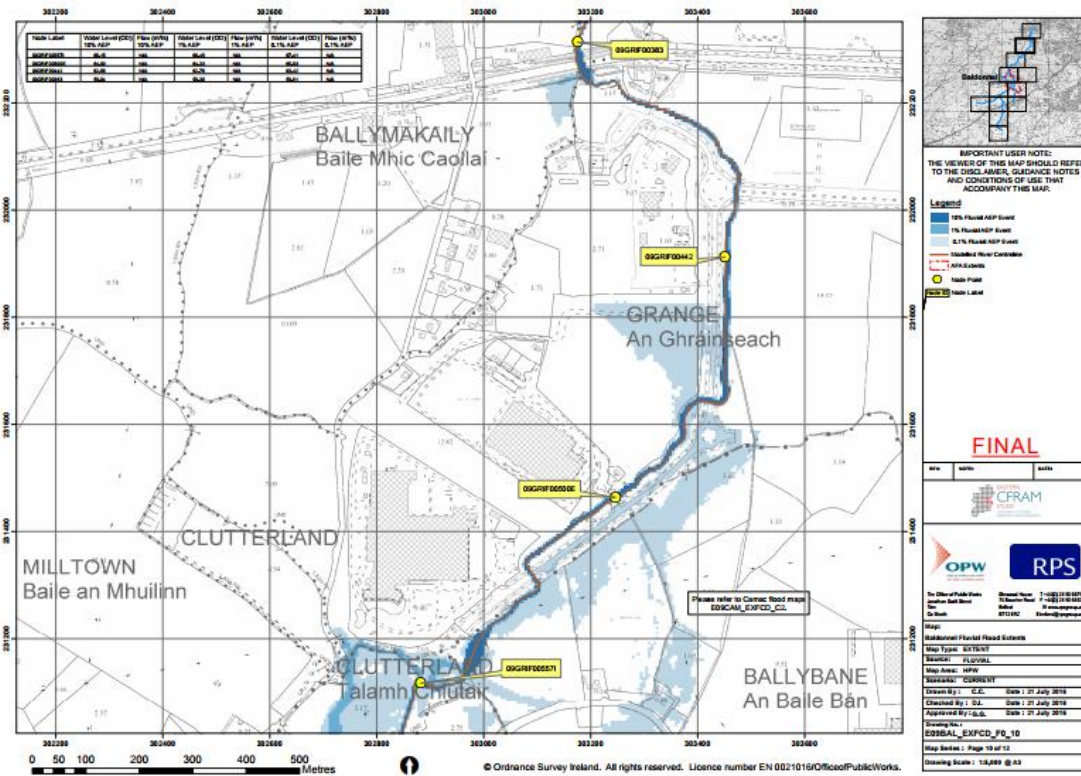
The Lucan (Tobermaclugg) Stream runs through the site. However, there is no available water quality data for this stream on the EPA Envision website.

The Griffeen River (stream) is located to east of the site. The Griffeen River rises in the town land of Greenogue, approximately 3 km south of the proposed lands for rezoning. It flows in a northerly direction where it is culverted beneath the Grand Canal and from there it flows north through Lucan. The Griffeen River enters the River Liffey just north of Lucan town. A section of the Griffeen River was realigned during the construction of the Grangecastle Business Park and associated access roads and it now runs alongside the local access road in a northerly direction to the east of the site.

The Grand Canal runs in an east to west direction along the northern boundary of the development and is classified as a proposed National Heritage Area (pNHA). The pNHA is an area considered important for the habitats present or which holds species of plants and animals whose habitat needs protection. There is no hydrologic connection between the Variation Lands and Grand Canal.

The Catchment Flood Risk Assessment and Management (CFRAM, Irish) study for the Liffey Catchment and its work is still ongoing for certain areas around Dublin. However, there is a final flood risk map for the proposed lands for rezoning and the surrounding area. Review of the on-line database www.cfram.ie indicated no projected significant fluvial flooding (i.e. the areas projected to be prone to flooding) along the Lucan stream which runs through the site and Griffeen River to the east of the site, based on the final fluvial flood extent maps for the modelled 1 in 10-year, 1 in 100-year and 1 in 1000-year flood events.

Figure 2 CFRAM Map for Proposed Variation Area



2.3.5 Climate change, Air Quality and Noise

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

The Climate Action and Low Carbon Development Act 2015 outlines in Section 15 “Duties of Certain Bodies”, that a local authority should have regard to the following:

- The most recent approved national mitigation plan,
- The most recent approved national adaptation framework and approved sectoral adaptation plans,
- The furtherance of the national transition objective, and
- The objective of mitigating greenhouse gas emissions and adapting to the effects of climate change in the State.

Air Quality and Noise

The principal sensitive receptors within the environs of the study area include residential properties mostly located along the R120. Peamount Hospital is located directly south of the study area and is bounded by the R120 to the south. The closest village to the study area is Newcastle (located approximately 2km south-west of the study area).

Noise

The proposed rezoned lands in general are located in a semi-rural setting set back from dominant transport noise sources, however there are a number of industrial and commercial facilities in close proximity to the lands which include a mixture of pharmaceutical facilities, data centres and other manufacturing facilities which influence the character of the surrounding noise environment to an extent, particularly along the eastern boundary.

2.3.6 Cultural Heritage

There are no National Monuments within or in the vicinity of the Grange Castle Western Lands.

There is one recorded archaeological site located within the Grange Castle Western Lands. The enclosure site was identified in 2015 from aerial photography and added to the Sites and Monuments Record as SMR No. DU017-095 (the site is scheduled for inclusion in the next revision of the Record of Monuments and Places, RMP). It comprises a sub-circular enclosure visible as a crop mark on an aerial photograph (Dimensions: c. 56m WNW/ESE by c. 49m NNE/SSW). The site is located in Loughtown Upper Townland (ITM centre-point 700903, 731247).

There is also a considerable number of recorded archaeological sites within approximately 1.5km of the Grange Castle Western Lands.

There are no architectural heritage constraints within the Grange Castle Western Lands, with all of the protected structures and NIAH sites located on the periphery or in the vicinity. Protected structures in the vicinity of the Grange Castle Western Lands include several 18th and 19th century farmhouses, as well as a cluster of structures within the former Peamount demesne, now Peamount Hospital. In addition, there is a number of protected structures located along the Grand Canal, many of them associated with the canal infrastructure, representing the industrial and built heritage of this area. These are primarily clustered at the 12th Lock and Leck Bridge, including two former mill buildings and a Lock-Keeper's Cottage. They also include Gollierstown Bridge just north of the Grange Castle Western Lands (RPS No. 131 on Figure 10) and Grange Cottage to the east of the 12th Lock. With the exception of the bridges and the lock itself, all of the structures are set back from the canal, at the side of the tow path.

2.3.7 Landscape

The subject lands lie to the west of the existing Grange Castle Business Park and immediately to the south of the Grand Canal. The existing landscape is composed primarily of agricultural land composed of large arable fields surrounded by mixed hedgerows. The terrain is low lying, generally flat and can be described as open in character but interrupted by lines of trees and taller, unmanaged hedgerows. In some places, the perimeter hedgerows of fields are managed,

being closely cut to a metre or two in height, in others they are taller and let grow loose. In other places, they also contain lines of mature trees; these hedgerows coincide with shelter belt planting surrounding farm buildings and other settlements.

Specifically, the field patterns within the site are defined by dense hedgerows enclosing large, rectangular fields predominately medium to large in size, which date largely from the 18th or 19th century and reflect the traditional agricultural landscape in this area. In many places this pattern has been modified through boundary removal and land rationalisation to facilitate modern agricultural methods. The Lucan stream (Tobermaclugg) runs through the site from the pNHA Grand Canal.

The land boundary is defined by pNHA Grand Canal and arable lands to the north; Grange Castle Business Park to the east; Peamount hospital to the south and more arable land including sparse sub urban development to the west which also coincides with the County Dublin boundary. Two regional roads transect the site; the R405 to the west and R120 to the south and east but minor roads off the regional road provide access to farmstead and residential areas towards the south and west of the lands. The Grange Castle Business Park South located to the East is a dominating feature located to the immediate east of the lands. Other business parks such as Profile Park and Grange Castle Business Park are also located near the lands.

There are no existing commercial developments within lands proposed for rezoning. Land uses around the area are dispersed with residential settlement ranged along the road network. There are sub-urban residential developments towards the west of the site; these are sparse and consist of cluster of individual houses arranged in a linear manner along the minor access road from R405. The neighbouring land use also includes Peamount hospital, previously a country home from 1800s. The hospital premises also include an overhead water reservoir. Hence, the Peamount hospital premises demarcate a sensitive neighbouring land.

The land is largely composed of flat terrain. As there are tall field boundaries and few vantage points, therefore the views across the lands are limited. From within the lands, the Dublin Mountains to the south are visible at a long distance. The buildings within the existing Grange Castle Business Park development to the east are visible within eastward views. The Grand Canal is an important semi natural resource to the north of the lands, which is densely planted with semi-natural woodland.

2.3.8 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.

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 located to the immediate North of the proposed Grange Castle Western 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 proposed SDCC land to be rezoned project where a summary of the existing transport baseline is as provided below.

Cycle Facilities

The Grand Canal Greenway, which traverses the northern boundary of the existing Grange Castle Business Park, links Lucan to Inchicore in the City Centre and provides 8.5km of path for both cyclists and walkers along its southern towpath.

With reference to the proposed rezoned lands site, both the existing northern and southern towpaths attributed to the Grand Canal are located along the proposed sites northern boundary. Both existing towpaths are not developed but are regularly used by walkers, albeit at lower usage levels than the more developed towpaths located to the east.

The existing Regional Road (R136) located to the East of the existing Grange Castle Business Park site includes segregated cycle facilities offering links to Lucan Village, Liffey Valley and the N4. Contained within both existing Grange Castle and Grange Castle South Business Parks is a network of segregated cycle facilities that are regularly used by its residents.

Walking Facilities

Both northern and southern towpaths attributed to the Grand Canal traverse along the proposed rezoned lands footprints northern boundary. Both towpaths are undeveloped but are regularly used by local walkers. As mentioned previously, the Grand Canal Greenway which links Lucan to Inchicore in the City Centre provides 8.5km of surfaced path for both cyclists and walkers. Furthermore and contained within both existing Grange Castle and Grange Castle South Business Parks is a network of segregated cycle and walkway facilities that are regularly used by its residents.

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

Located in close proximity to the proposed rezoned lands site is Clondalkin/Fonthill Train Station that is served by commuter services operating to Heuston Station. The opening of the Phoenix Park Tunnel offers further connectivity to Drumcondra, Connolly, Tara Street, Pearse Street and Grand Canal Dock. Located approximately 2km to the most western point of the proposed rezoned lands site boundary is Hazelhatch and Celbridge Train Station. Access to this train station can be gained from the existing R405 Hazelhatch Road which passes over the existing Grand Canal. Sandwiched between Clondalkin/Fonthill Train Station and Hazelhatch and Celbridge Train Station is Adamstown Train Station which is located directly north of the proposed Grange Castle West site.

A number of bus routes pass within close proximity to the proposed rezoned land site and includes a mix of radial, orbital and local services mainly operated by Dublin Bus.

Road Network

The proposed rezoned lands are located to the West of the existing Grange Castle and Grange Castle South Business Parks, South of the Grand Canal, and continues in a westerly direction where it straddles a portion of the County Dublin/Kildare County boundary line. The existing R120 Regional Road (to be upgraded 2017/2018) traverses the eastern boundary of the proposed rezoned lands.

The proposed rezoned lands site is situated in close proximity to the N7 motorway and Junction which provides access to the west and south west of Ireland. The N7 Junction additionally offers vital connectivity to the M50 Orbital Motorway which is the main gateway to the North and South of Ireland. The M50 Orbital Motorway circles the northern, southern and western suburbs of Dublin City and provides access to significant infrastructure such as the Port Tunnel, Dublin Port, and Dublin International Airport. Grange Castle is connected to the national road network by its proximity to various arterial routes; within 6km of the M50 (Dublin orbital route), 3km of the N7/M7 (South and South West) and 6km of the M4 (West and North West).

Aviation

Located approximately 3km to the north of the proposed rezoned lands site is Dublin Weston Airport. Dublin Weston Airport is Ireland's only dedicated Executive private jet airport. Located approximately 3km to the south east of the proposed rezoned lands site is Casement Aerodrome based in Baldonnell, County Dublin. Casement Aerodrome is the air component of the Irish Defence Force.

Water Supply

Encompassed within the proposed R120/Nangor Road realignment project is the introduction of a new 400mm diameter water main which is ultimately fed from Belgard reservoir. This proposed 400mm diameter water main will traverse through the newly formed R120/Nangor Road Junction to the south eastern corner of the proposed rezoned lands footprint.

Irish Water have proposed that the Shannon to Dublin Water Scheme will land within close proximity of the existing Peamount Reservoir site. An extension to the existing Peamount Reservoir is proposed as part of this scheme.

Waste Water (Foul)

Wastewater generated within the proposed rezoned lands will discharge into the existing Grange Castle Pump Station which ultimately discharges into the existing Ringsend Waste Water Treatment Plant. At present this Ringsend 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 million population equivalent completed by 2023. There are also plans to construct a new WWTP 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.

Located in close proximity of the proposed rezoned lands site is Tobermaclugg pumping station which was completed in 2008 and ultimately discharges to the 9B trunk sewer at Balgaddy via twin rising mains and a gravity sewer.

Waste Water (Storm)

Based on the existing terrain attributed to the proposed rezoned lands landscape, a mixture of gravity and pumped storm networks will be introduced to cater for the site storm water requirements.

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 3 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 South Dublin County Council operated 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.

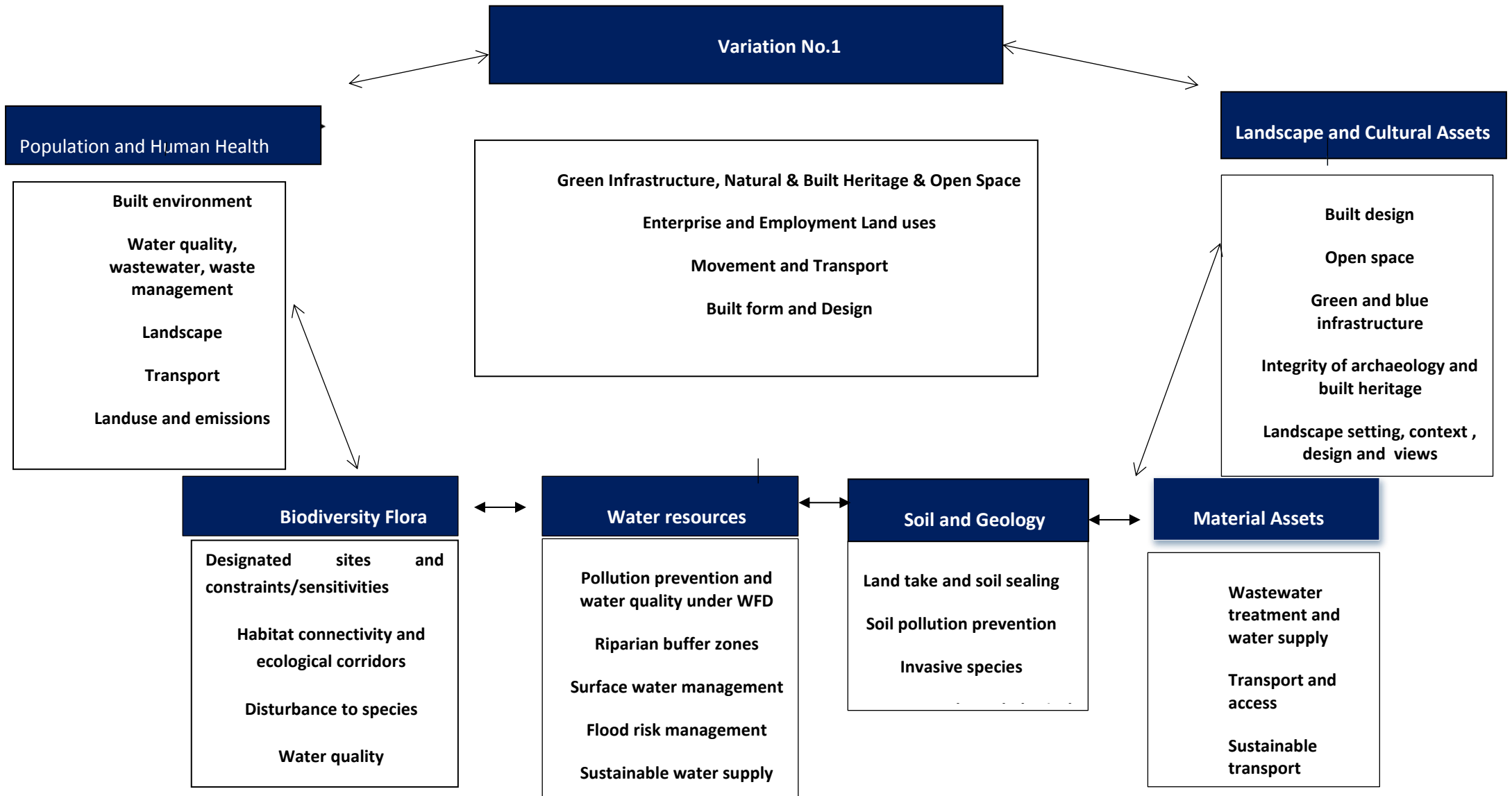
Gas Supply

The proposed rezoned lands can be serviced by an existing high pressure 70bar transmission gas pipeline that runs in a north – south direction adjacent to the Fonthill Road and the Grange Castle Road. A branch connection will provide high pressure Gas to service all of the proposed rezoned lands under consideration.

Telecommunications

The existing T50 fibre network runs in close proximity to the proposed rezoned lands site and currently services the existing Grange Castle and Grange Castle South Business Parks from a section of the T50 network that traverses under the exist Nangor Road (R134) that ultimately loops in a south to south eastern direction following under the footprint of the existing L2901 local Road. The existing T50 infrastructure comprises of an 18 way duct system which is currently owned and operated by Zayo.

Figure 2.3 PRIMARY ENVIRONMENTAL INTER-RELATIONSHIPS



3.0 STRATEGIC ENVIRONMENTAL OBJECTIVES AND CONSIDERATION OF ALTERNATIVES

3.1.1 Strategic Environmental Objectives

These are the criteria against which the elements of the proposed variation are assessed. They are derived from the South Dublin County Development Plan 2016-2022 where possible.

Table 3.1 STRATEGIC ENVIRONMENTAL OBJECTIVES

SEA Topic		Strategic Environmental Objectives
Biodiversity Flora and Fauna	BFF1	To avoid loss of habitats, geological features, species or their sustaining resources in designated ecological sites.
	BFF2	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.
	BFF3	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	PHH1	To protect human health from hazards or nuisances arising from traffic and incompatible landuses specifically noise, air pollution and water pollution.
Water	W1	To maintain and improve, where possible, the quality of rivers, lakes and surface water.
	W2	To prevent pollution and contamination of ground water.
	W3	To prevent development on lands which pose - or are likely to pose in the future – a significant flood risk.
Soil and Geology	SG1	To conserve soil resources where possible.
Material Assets	M1	To maintain and improve the quality of drinking water supplies.
	M2	To serve new development under the CDP with appropriate waste water treatment.
	M3	To reduce car dependency 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.
	M4	To minimise waste production and reduce the volume of waste to landfill and to operate sustainable waste management practices.
Climate Change, Air Quality and Noise	CC1	To minimise increases in travel related greenhouse emissions to air.

SEA Topic	Strategic Environmental Objectives	
(Population and Human Health SEO address noise and air quality)		
Cultural Heritage	CH1	To protect the archaeological heritage of South Dublin 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.
	CH2	To preserve and protect the special interest and character of architectural heritage with regard to entries to the Record of Protected Structures, Architectural Conservation Areas, and their context within the surrounding landscape where relevant.
Landscape	L1	To protect and avoid significant adverse impacts on the landscape, landscape features and designated scenic routes; especially with regard to areas of high amenity the Dublin Mountains Area, and the Liffey and Dodder Valleys.
Climate change adaptation	CC1	<i>To integrate climate change adaptation to the Variation</i>

3.1.2 Consideration of Alternatives

SEA is also required to assess the likely environmental consequences of a range of alternative development scenarios, in this case the Variation No.2 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.***

The three main scenarios considered were:

The three alternatives are as follows:-

- Scenario 1: Environmental /Preservation Approach (leaving the subject lands in agricultural use)
- Scenario 2 Sustainable/Selective and Sequential Approach (Note: this is the proposed Variation)
- Scenario 3 – Weak Planning / Market-led Approach

3.2 Preferred Alternative

From the SEA perspective the preferred alternative (Scenario 2) provides the following:

- Considers an appropriate setback for all buildings from the southern side of the Grand Canal, to afford the optimal degree of protection to the Grand Canal ecological corridor.
- Could allow for the retention of high value hedgerows and incorporation within a wider SUDs scheme.
- Utilises existing and proposed infrastructure and is adjacent to existing Grange Castle enterprise and employment uses

Therefore, the preferred alternative was developed having regard to the key requirements of:

- Environmental effects identified through the SEA consideration of alternatives, and
- Policy ET3 SLO1 of the SDCDP 2016-2022 *“To conduct a review of the zoning of lands south of the Grand Canal and west and north of the R120, including lands adjoining Peamount Healthcare, with a view to preparing a long term plan for the expansion of the Grange Castle Economic and Enterprise Zone to this area, to accommodate strategic investment in the future, while also seeking to provide public open space along the Canal, including a natural heritage area in the vicinity of the historic canal quarries at Gollierstown.”*

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

4.0 ASSESSMENT OF SIGNIFICANT EFFECTS AND MITIGATION MEASURES

4.1 Introduction

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.

More generally there are a number of potentially significant effects that can be identified from the conversion of greenfield, largely agricultural lands to Enterprise and Employment landuses. These effects have formed part of the mitigation measures that will be integrated into the Variation –see Table 4 for further details.

Key positive effects have been identified for population and human health, transport and biodiversity through the provision of integrated landuse and transport, retention of hedgerows, and buffer zones around the Grand Canal pNHA.

Examples of mitigation measures that have been developed through the SEA process are presented in Table 4.1

Table 4.1 Specific Mitigation Measures

SEA Parameter	Relevant SEO
Biodiversity, Flora and Fauna -	
MM1	<p>Development proposals on the Variation 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 setback for all buildings and a 30m setback 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. Figure 8.1 shows these set back distances from the northern boundary.</p>
MM2	<p>A Biodiversity Management Plan will be prepared by a qualified ecologist and be guided by relevant best practice guidelines and established techniques for habitats present on lands. The Biodiversity Management Plan shall incorporate the following measures</p> <ul style="list-style-type: none"> • The preservation of existing hedgerows, treelines, woodland, scrub and other semi-natural habitats where possible • High value historical hedgerows shall be retained and management details included; • Where hedgerows, treelines woodland and other semi-natural habitats are to be retained within the Variation 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.

MM3	<p>Invasive Species</p> <p>Three invasive species have been recorded in the area surrounding the Variation lands; Canadian Waterweed (<i>Elodea canadensis</i>), Nuttall's Waterweed (<i>Elodea nuttallii</i>) and Snowberry (<i>Symphoricarpos albus</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 invasive 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:</p> <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; <ol style="list-style-type: none"> 1. The Invasive Species Management and Control Plan shall Identify and map existing alien invasive plant species present within the Variation 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 	<p>SG1</p> <p>BFF1, 2 and 3</p> <p>W1</p> <p>L1</p>
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	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.	
MM4	All future developments shall outline measures that aim to minimise light spill along the northern boundary of the Variation Lands, adjacent to the Grand Canal pNHA and ecological sensitive area.	BFF1, 2 and 3
MM5	During the planning phase for all lower tier plans and projects for the Variation Lands detailed surveys for fauna and flora will be required to inform an assessment of the proposal's potential to result in significant disturbance to ecological receptors.	BFF1, 2 and 3
	Population and Human Health	
MM6	Landscaping and retention of treelines and hedgerows where possible offer a multifunctional ecosystem service that can assist in mitigating effects associated with industrial activities, particularly around noise and air quality.	PH1 BFF1 L1 AQ1
Water Resources including Flooding		
MM7	To protect water quality: - new developments will be required to incorporate containment measures and managing accidental release to protect against discharges of hazardous substances to ground.	W1 W2 BFF1 PH1
MM8	Identification of any contaminated land will require demonstration of suitable remediation /licensed disposal.	W1 W2 BFF1 PH1
MM9	• To maintain the natural groundwater and surface water regime, new	W1

	developments will incorporate SuDs measures, ensuring clean stormwater is discharged to ground from hardstand areas where feasible. SUDs measures should also incorporate biodiversity enhancement where possible.	W2 W3 BFF1 PH1
MM10	<ul style="list-style-type: none"> To minimise any increased risk of flooding, new developments will have to show that the site is suitable for development and will not increase the risk of flooding elsewhere. They will have to comply with guidelines produced by the Department of the Environment, Heritage and Local Government (DoEHLG) - The Planning System and Flood Risk Management Guidelines for Planning Authorities, November 2009 	W3 PH1
Climate Change, Air Quality and Noise		
MM11	<p>Operational Air Emissions</p> <ul style="list-style-type: none"> Any significant air emissions within the proposed rezoned lands will be regulated by the EPA in the form of an Industrial Pollution Control (IPC) or Industrial Emissions (IE) Licence. The facility will have strict air emissions limits outlined in the relevant licence which will be set to ensure compliance with ambient air quality standards. Prior to operation the facility will be required to undertake a stack height determination of all main emission points to ensure that all air emissions from the facility will be in compliance with the ambient air quality standards at all times. Secondly, all significant emission points regulated by the EPA will, in accordance with Council Directive 2010/50/EC (Industrial Emissions Directive) be required to ensure that they are adhering to the principles of BAT. The purpose of the Directive is to “ensure a high level of protection of the environment taken as a whole”. The Directive has stated that the permit conditions including air emission limit values (ELVs) must be based on Best Available Techniques (BAT) with BAT 	PH1 BF1 MA1 CC

	conclusions the reference for setting permit conditions.	
MM12	<p>A landscape management framework for the rezoning will be prepared that will address the following:</p> <p>Soil sealing</p> <p>Incorporation of SUDs into overall design that offers biodiversity enhancement where possible</p> <p>Boundary treatments and retention of hedgerows where possible</p> <p>Management regime for retained hedgerows and treelines</p> <p>Buffer area between lands and the Grand Canal.</p> <p>Open space</p> <p>Lighting proposals particularly in areas close the Grand Canal.</p>	<p>BFF1</p> <p>BFF2</p> <p>L1</p> <p>PH1</p>
	Cultural Heritage	
MM13	<p>It should be noted that preservation in situ is the preferred policy of the National Monuments Service (Department of Culture, Heritage and the Gaeltacht). Archaeological sites should be avoided, unless it can be demonstrated that this is not possible, in which case preservation by record (excavation) may be considered by the National Monuments Service.</p>	<p>CH1</p> <p>L1</p> <p>PH1</p>
MM14	<p>Architectural Heritage</p> <p>Regard should be had in any future development for the Grand Canal and its associated structures and to the complex at Peamount Hospital, which are located on the periphery of the lands. An architectural record should be made of any structure or feature of built heritage interest that would be subject to a direct impact as a result of development within the Grange Castle Western Lands.</p>	<p>CH1</p> <p>L1</p> <p>PH1</p>

Landscape		
MM15	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	

5.0 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 Variation.

The targets and indicators are derived from the Strategic Environmental Objectives (SEOs) discussed in Chapter Five of the SEA ER and presented in Section 4 here.. 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:

- Significant unauthorised development (either large scale or cumulative small scale)
- Illegal waste activity
- Water pollution incidents (not resulting from oil spills).

Table 5.1 Monitoring

SEA Topic	Strategic Environmental Objectives	Indicator	Target	Data Source
Biodiversity Flora and Fauna	BFF1:To avoid loss of habitats, geological features, species or their sustaining resources in and outside of ¹ designated and ecological sites	B1: Percentage of relevant habitats, features and species lost as a result of implementation of the Variation	B1: No losses of relevant habitats, species or their sustaining resources in designated ecological sites as a result of implementation of the Variation	Designated ecological sites mapping, CORINE Mapping, National Parks and Wildlife Service Records & Development Management Process in SDCC.
	BFF2: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.	B2: 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 Variation.	B2: 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 Variation.	Designated ecological sites mapping, Development Management Process in SDCC Council & Consultation with the National Parks and Wildlife Service Primary ecological corridors mapping, CORINE mapping and Development Management

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

SEA Topic	Strategic Environmental Objectives	Indicator	Target	Data Source
			n of the Variation	Process in SDCC.
	<p>BFF3: To sustain, enhance or - where relevant - prevent the loss of ecological networks or parts thereof which provide significant connectivity between areas of local biodiversity.</p>	<p>Area of Biodiversity Network (County's primary ecological corridors which has been lost without mitigation.</p> <p>Percentage loss of functional connectivity without remediation resulting from development provided for in the CDP.</p>	<p>No ecological connectivity provided by the County's primary ecological corridors to be lost without mitigation as a result of implementation of the CDP</p> <p>No significant ecological networks or parts thereof which provide functional connectivity to be lost without remediation resulting from development permitted under Variation No.1</p>	
Population and human health	<p>PH1: To protect human health from hazards or nuisances arising from traffic and incompatible land uses specifically noise, air pollution and</p>	<p>Number of occasions that PM10 limits have been exceeded in at Air Monitoring stations closest to Variation².</p> <p>Number of IPPC licensed activities permitted under the Variation.</p>	<p>Reduce number of people exposed to traffic noise and air quality levels which endanger health and quality of life.</p>	<p>South Dublin County Council, EPA</p>

² Currently air quality monitoring closest station is at Tallaght.

SEA Topic	Strategic Environmental Objectives	Indicator	Target	Data Source
	water pollution.	Record of any exceedances under IPPC licenses <i>Number of complaints regarding noise, light and air quality for lands developed through the Variation.</i>		
Climate Change, Air Quality and Noise -air quality and noise are included in Population and Human Health SEOs	<i>CC1 To minimise increases in travel related Greenhouse Gas emissions to air.</i>	<i>Extent of developments built within Variation lands with access to of high quality public transport accessibility. Number of IPPC licenses activities granted under Variation No.1</i>	<i>An increase in the percentage of the population within the County travelling to work by public transport or non-mechanical means.</i>	
Water	W1:To maintain and improve, where possible, the quality of rivers, lakes and surface water including Grand Canal	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	Environmental Protection Agency.

SEA Topic	Strategic Environmental Objectives	Indicator	Target	Data Source
			possible, to Q5.	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.
	W2: 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
	W3: To prevent development on lands which pose - or are likely to pose in the future – a significant flood risk	Percentage of area granted planning permission on lands prone to flooding as identified by PFRA or CFRAM mapping.	No significant flood events associated with development activities related to Variation lands	Development Management Process in South Dublin County Council
Soil and Geology	SG1: To conserve soil resources where possible.	• To minimise the loss of greenfield development and maximise linkage and use of greenspace for biodiversity enhancement,	S1ii: To reduce the amount of Greenfield lands developed subject to	Development Management Process in SDCC As above

SEA Topic	Strategic Environmental Objectives	Indicator	Target	Data Source
		<ul style="list-style-type: none"> • To fully utilise any brownfield sites identified and remediate any contaminated land encountered during redevelopment, • To minimise the volume of waste (including soil) leaving the site for landfill and meet national waste reduction targets. <p>Number of contaminated sites identified and remediated.</p> <ul style="list-style-type: none"> • There are no legislative thresholds for soil quality in Ireland. As such monitoring of receiving water quality as part of the EPA programme for water body status is the most relevant measure of soil quality. • Monitoring of tonnage of soil exported from the site and tonnage of contaminated soil disposed to licensed facilities will provide information on the soil loss and remediation of brownfield/contaminated sites. <p>Volume of waste recycled and volume of waste sent to landfill.</p>	<p>Variation Objectives</p> <p>To meet national and EU targets on the recycling of municipal waste and its diversion from landfill</p>	<p>Environmental Services Dept. SDCC</p> <p>Annual Waste Arisings Report from Environmental Services Dept. SDCC</p>

SEA Topic	Strategic Environmental Objectives	Indicator	Target	Data Source
Material Assets	MA1: 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
	MA2: To serve new development under with appropriate waste water treatment		All new developments to require appropriate waste water systems.	SDCC Irish Water EPA
	MA3: To reduce car dependency within the Variation lands 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 Variation lands with access to 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. A decrease in the average distance travelled to work or school by the population of the County.	SDCC CSO Census

SEA Topic	Strategic Environmental Objectives	Indicator	Target	Data Source
	MA4: 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	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	CH1: To protect the archaeological heritage of Variation Lands 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) - protected Number of archaeological surveys required as part of planning applications Conditions attached to permissions on archaeological monitoring during excavations.	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 Variation Lands.	SDCC Development Control

SEA Topic	Strategic Environmental Objectives	Indicator	Target	Data Source
	CH2:To preserve and protect the special interest and character of architectural heritage with regard to entries to the Record of Protected Structures, and their context within the surrounding landscape where relevant.	<p>Percentage of entries to the Record of Protected Structures (and/or their context within the surrounding landscape where relevant) protected.</p> <p>Number of architectural condition surveys attached to planning applications.</p>	<p>Protect entries to the Record of Protected Structures (and/or their context within the surrounding landscape where relevant)</p> <p>Renovate and reuse architectural heritage structures and features</p>	SDCC
Landscape	L1: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	<p>The creation of a sense of place and coherence/ appreciation for the overall setting and context of Variation</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 the Variation.</p>	SDCC
Climate Change	CC1:To integrate climate	Number of SUDs measures included and developed as	Integrated blue and green	SDCC

SEA Topic	Strategic Environmental Objectives	Indicator	Target	Data Source
	<i>change adaptation to the Variation</i>	<i>part of development proposals Number/extent of additional tree planting as part of applications.</i>	<i>infrastructure through the Variation lands.</i>	

5.1.1 Conclusion

This Non-Technical summary of the SEA Environmental Report summarises how environmental parameters have been addressed in the plan preparation process.

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

The SEA and Screening for Appropriate Assessment has been undertaken in line with the Planning and Development (Strategic Environmental Assessment) Regulations 2004 to 2011 (as amended). Subject to the full and proper implementation of the mitigation measures outlined in this SEA Environmental Report and the Variation including detailed design at planning application stage, it is considered that significant adverse impacts on the environment will be avoided.