SEA Environmental Report

Appendix II – Non-Technical Summary

AS PART OF PREPARATION OF THE

Strategic Development Zone
Planning Scheme
FOR
Poolbeg West
(SI No. 279 of 2016)

for: **Dublin City Council**

Civic Offices

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Section 1 Introduction and Terms of Reference

This is the Non-Technical Summary of the Strategic Environmental Assessment (SEA) Environmental Report for the Strategic Development Zone (SDZ) Planning Scheme for Poolbeg West (SI No. 279 of 2016). The purpose of the Environmental Report is to provide a clear understanding of the likely environmental consequences of decisions regarding the adoption and implementation of the Planning Scheme.

What is an SEA?

SEA is a systematic process of predicting and evaluating the likely environmental effects of implementing a proposed plan, or other strategic action, in order to ensure that these effects are appropriately addressed at the earliest appropriate stage of decision-making on a par with economic, social and other considerations.

Why is it needed?

The SEA has been carried out in order to comply with the provisions of the SEA Regulations and in order to improve planning and environmental management within Poolbeg West. The output of the process is an Environmental Report that should be read in conjunction with the Planning Scheme.

How does it work?

All of the main environmental issues in the area were assembled and presented to the team who prepared the Planning Scheme. This helped them to devise a Planning Scheme that protects whatever is sensitive in the environment. It also helped to identify wherever potential conflicts between the Planning Scheme and the environment exist and enabled these conflicts to be mitigated.

The SEA was scoped in consultation with designated environmental authorities.

What is included in the Environmental Report that accompanies the Plan?

The Environmental Report contains the following information:

- A description of the environment and the key environmental issues;
- A description and assessment of alternatives for the Planning Scheme;
- An assessment of the provisions of the Planning Scheme; and,
- Mitigation measures which set out to aid compliance with important environmental protection legislation - e.g. the Water Framework Directive, the Habitats Directive - and which will avoid/reduce the environmental effects of implementing the Planning Scheme.

What happens at the end of the process?

An SEA Statement is prepared at the end of the process that summarises, inter alia, how environmental considerations have been integrated into the Planning Scheme.

Section 2 The Planning Scheme

2.1 Content of the Planning Scheme

The Planning Scheme consists of a written statement and plans indicating the type and extent of development to be permitted in the Poolbeg West SDZ, together with proposals relating to the overall design of development, transportation, the provision of services, the minimisation of any adverse impacts on the environment and the provision of amenities, facilities and services for the community. It is accompanied by the environmental reports of various assessments that have been undertaken alongside the preparation of the Scheme including SEA, Appropriate Assessment, Flood Risk Assessment, Contamination and Remediation Assessment.

2.2 Main Objectives of the Planning Scheme

The Planning Scheme will seek to sensitively regenerate the brownfield sites identified in the SDZ area, cognisant of their context in terms of urban design, public transport accessibility and spatial connections with the wider area, whilst optimising the potential of these key sites to contribute to the City in the provision of private and public housing, employment, schools, community and recreational facilities.

2.2.1 Three Tiered Vision

The three tiered vision for the development of Poolbeg West is to:

- CONNECT with the physical, environmental, economic and social fabric of the city, the bay and adjoining neighbourhoods;
- CREATE a new sustainable urban neighbourhood that responds to the areas unique location and enhances the enjoyment of local amenities; and
- PROTECT the special status of Dublin Bay, the intrinsic functions of the port/municipal facilities and the amenity of existing and future residents.

2.2.2 Key Principles

This vision is expanded below as set of Key Principles that will shape the development of the Poolbeg West:

- *Connect with the City*

Key Principle: Provide strong social economic and transportation connections between Poolbeg West and the rest of the City, including the central area.

- *Connect with the Bay*

Key Principle: Enhance the lifestyle opportunities for future residents, existing communities and visitors to the area by providing strong physical, visual and ecological connections to Dublin Bay.

- *Connect with the Neighbourhoods*

Key Principle: Promote the integration of Poolbeg West with the surrounding communities of Irishtown, Ringsend and Sandymount.

- *Create a Sustainable Neighbourhood*

Key Principle: Establish a new urban neighbourhood that sustains the future population and workforce of Poolbeg West and complements and enhances the services available in surrounding communities.

- *Create a Quality Place*

Key Principle: Ensure the highest standards of urban design and place making are applied to Poolbeg West in response to the unique qualities of the peninsula and surrounding neighbourhoods.

- *Create a Destination*

Key Principle: Increase and enhance opportunities for people to enjoy the amenities of the peninsula and surrounding areas.

- *Protect Dublin Bay*

Key principle: Ensure that all measures are taken to mitigate against any potential impacts on Dublin Bay and its environs.

- *Protect the Intrinsic Operations of the Port and Municipal Facilities*

Key principle: Ensure that the development of Poolbeg West and the ongoing operations of Dublin Port and municipal facilities are mutually taken in account and integrated into the urban structure of the City.

- *Protect and Enhance the Amenity of Residents*

Key Principle: To ensure that the well-being and safety of residents is not adversely affected by nearby industries and the threats of climate change and that the amenities of existing and future residents are protected and enhanced.

2.3 Relationship with other relevant Plans and Programmes

The Planning Scheme has been prepared to accord with the hierarchy for land-uses and spatial plans and other relevant policies at national, regional and city level, including those listed below.

In particular, the SDZ Planning Scheme accords with the following hierarchy of strategies and plans:

The **National Spatial Strategy 2002-2020** (NSS) recognises that Dublin as the capital city plays a vital national role and that the performance of its economy is essential to the success and competitiveness of the national economy. In order to sustain this role as the engine of the economy, it advocates the physical consolidation of Dublin. The SDZ lies at the heart of the metropolitan core. Its capacity to provide significant levels of private and public housing, employment, schools, community and recreational facilities, make it a valuable resource to allow for innovation, enterprise and employment in Dublin, and as such it fully accords with the NSS. It is anticipated that the emphasis will be retained in the forthcoming National Planning Framework. The **National Development Plan 2007-2013** (NDP) also acknowledges that the wider Docklands regeneration has been a factor that has contributed to the success of the Dublin Gateway.

The **Regional Planning Guidelines for the Greater Dublin Area 2010-2022** (RPGs) translates the national strategy to the regional level with a similar emphasis on Dublin as the driver of national development and the need to physically consolidate the growth of the Metropolitan Area. The RPGs settlement hierarchy seeks to prioritise and focus investment and growth to achieve integration of infrastructure, employment and new housing. In this case, the SDZ would facilitate the consolidated growth of the Metropolitan Area, while at the same time allowing for the provision of infrastructure, employment and new housing (see Paragraph 15.1.1.9 of Dublin City Development Plan 2016-2022).

The **Dublin City Development Plan 2016-2022** reinforces these higher level plans with the promotion of the intensification and consolidation of the city. It seeks to achieve this by way of regeneration and renewal of the inner city and redevelopment of brownfield areas. It also emphasises the city's role as the national gateway and key economic driver of growth for the region and state as a whole, with the need for the city to develop sufficient critical mass to compete at an international level. The SDZ designation will help to ensure that these policies and objectives of the development plan can be fast-tracked.

In particular, the **development plan core strategy** designates the Docklands, including Poolbeg West SDZ, as a Strategic Development Regeneration Area (SDRA). SDRAs relate to important brownfield sites with the potential to deliver a significant quantum of mixed uses. The SDZ exhibits all these characteristics with an opportunity for continued physical and social regeneration of the Poolbeg Peninsula, which in turn aids in the emergence of the overall Docklands area as a new and vibrant economic, cultural and amenity quarter of the city. The City Development Plan also promotes an active land management approach to regeneration. This scheme is part of the policy.

The **Dublin Port Masterplan 2012-2040** sets out a vision for the operations of the port and land utilisation. It also acknowledges the importance of the emerging cruise liner tourism and potential of the natural amenities of Dublin Bay. The SDZ will ensure a synergy is created with the masterplan vision for the port lands as a significant employment hub with emerging tourism potential.

The Masterplan provided that it would be subject to periodic reviews, based primarily on changes in the demand for the use of port facilities. The **first review of the Dublin Port Masterplan 2012 – 2040** will take account of changes in port operations, logistics, trade developments and relevant policies impacting on Dublin Port as it continues to plan for the future. The review is intended to update and refine the infrastructure development options for Dublin Port and, in doing so, ensure that the Masterplan continues to provide the best solution for the future sustainable development of Dublin Port through to 2040. To help guide the consultation, in early 2017, Dublin Port Company published a Masterplan Review 2017 Consultation Paper and an Environmental Report Consultation Paper. The Dublin Port Company has responded to submissions in a **Report on the Consultation** process and will now undertake a number of environmental, cultural / leisure and transport studies and assessments (including SEA and AA) before finalising the review. The Dublin Port Company will also conduct formal meetings with a number of national and local stakeholders on specific topics that emerged.

The **Docklands Masterplan 2008** set out comprehensive guidance for the physical, economic and social regeneration of the entire functional area of Docklands, addressing issues such as land use transportation, infrastructure, urban design, arts, tourism and leisure. It underscored the importance of the regeneration strategy and provides a valuable platform to renew and up-date the regeneration strategy for the SDZ lands.

The Masterplan provided that it would be subject to periodic reviews, based primarily on changes in the demand for the use of port facilities. The **first review of the Dublin Port Masterplan 2012 – 2040** will take account of changes in port operations, logistics, trade developments and relevant policies impacting on Dublin Port as it continues to plan for the future. The review is intended to update and refine the infrastructure development options for Dublin Port and, in doing so, ensure that the Masterplan continues to provide the best solution for the future sustainable development of Dublin Port through to 2040. To help guide the consultation, in early 2017, Dublin Port Company published a Masterplan Review 2017 Consultation Paper and an Environmental Report Consultation Paper. The Dublin Port Company has responded to submissions in a **Report on the Consultation** process and will now undertake a number of environmental, cultural / leisure and transport studies and assessments (including SEA and AA) before finalising the review. The Dublin Port Company will also conduct formal meetings with a number of national and local stakeholders on specific topics that emerged.

The Planning Scheme is subject to a number of high-level **environmental protection policies and objectives** with which it must comply (including those which have been identified as Strategic Environmental Objectives - see Table 3.1). Examples the aim of the EU Habitats Directive - which is to contribute towards ensuring biodiversity through the conservation of natural habitats and of wild fauna and flora in the European territory of Member States - and the purpose of the Water Framework Directive - which is to establish a framework for the protection of inland surface waters, transitional waters, coastal waters and groundwater which, among other things, prevents deterioration in the status of all water bodies and protects, enhances and restores all waters with the aim of achieving good status.

Section 3 The Environmental Baseline

3.1 Introduction

The environmental baseline of Poolbeg West is summarised in this section. This baseline together with the Strategic Environmental Objectives, which are identified further in the document, is used in order to identify, describe and evaluate the likely significant environmental effects of implementing the Planning Scheme and in order to determine appropriate monitoring measures. The environmental baseline is described in line with the legislative requirements encompassing the following components – biodiversity, flora and fauna, population, human health, soil, water, air and climatic factors, material assets, cultural heritage, landscape and the interrelationship between these components.

No significant difficulties have been encountered during the undertaking of the assessment to date.

3.2 Likely Evolution of the Environment in the Absence of the Plan

The implementation of the Planning Scheme is likely to give rise to the following residual[1] adverse environmental effects:

- Loss of an extent of non-protected habitats and species arising from the replacement of semi-natural land covers with artificial surfaces.
- Potential interactions with residual effects on environmental vectors[2]. This has been mitigated[3] by provisions which have been integrated into the Planning Scheme, including those relating to sustainable mobility and infrastructural provision.
- Losses of soil function on made ground.
- Any increase in loadings as a result of development (these would be in compliance with River Basin Management Plans).
- Development to both: avoid areas of elevated flood risk; and not increase areas of elevated flood risk.
- Residual wastes (these would be disposed of in line with higher level waste management policies).
- An extent of travel related greenhouse gas and other emissions to air. This has been mitigated by provisions which have been integrated into the Plan, including those relating to sustainable mobility.
- Potential alteration to the context and setting of architectural heritage (this would occur in compliance with legislation).
- Potential alteration to the context and setting of archaeological heritage (this would occur in compliance with legislation).
- Potential loss of unknown archaeology however this loss will be mitigated by measures integrated into the Planning Scheme.
- The Planning Scheme contributes towards the protection of amenities. These semi natural amenities will change overtime as a result of natural changes in vegetation cover combined with new developments.

In the absence of a new Planning Scheme, none of the adverse effects detailed above would result due to the implementation of the Scheme. However applications for permission for new projects would continue to be made under the regime of the Dublin City Development Plan and associated zonings. Compliance with the mitigation measures summarised under Section 6 of this report would be necessary in order to help ensure that the following significant adverse environmental effects do not occur:

- Arising from both construction and operation of development and associated infrastructure: loss of/damage to biodiversity in designated sites (including European Sites[4] and Wildlife Sites) and Annexed habitats and species, listed species, ecological connectivity and non-designated habitats; and disturbance to biodiversity and flora and fauna.

[1] **Residual effects** are the final or intended impacts that occurs after proposed mitigation measures have taken effect as planned.

[2] **Environmental vectors** are environmental components, such as air, water or soil, through which contaminants or pollutants, which have the potential to cause harm, can be transported so that they come into contact with human beings.

[3] **Mitigation measures** are measures envisaged to prevent, reduce and, as fully as possible, offset any significant adverse impacts on the environment of implementing a human action, be it a plan, programme or project. Mitigation involves ameliorating significant negative effects. Where there are significant negative effects, consideration should be given in the first instance to preventing such effects or, where this is not possible, to lessening or offsetting those effects. Mitigation measures can be roughly divided into those that: avoid effects; reduce the magnitude or extent, probability and/or severity of effects; repair effects after they have occurred; and compensate for effects, balancing out negative impacts with other positive ones.

- Habitat loss, fragmentation and deterioration.
- Disturbance and displacement of protected species.
- Interactions if effects arising from industrial hazards of unsuitable/incompatible land-uses (such as heavy vehicle traffic, emissions or contaminated soils) are not mitigated.
- Interactions if effects upon environmental vectors such as water and air are not mitigated.
- Loss of soil function.
- Issues arising on other environmental components if potentially contaminated soils were not managed appropriately – both during construction and longer term.
- Adverse impacts upon the status of water bodies[5] arising from changes in quality, flow and/or morphology.
- Interactions with flood risk.
- Failure to provide adequate and appropriate wastewater treatment (water services infrastructure and capacity is needed to ensure the mitigation of potential conflicts).
- Failure to comply with drinking water regulations and serve new development with adequate drinking water that is both wholesome and clean (water services infrastructure and capacity is needed to ensure the mitigation of potential conflicts).
- Increases in waste levels.
- Emissions to air including greenhouse gas emissions and other emissions.
- Effects on protected and unknown archaeology and protected architecture arising from construction and operation activities.
- Occurrence of adverse impacts upon and conflicts with the usage of and access to amenities including parklands, playing fields and shore-side walks.

In the absence of the Planning Scheme that has provided further detail on the existing City Development Plan provisions, development would be less coordinated and consequently it would be more uncertain as to whether the following positive effects would be achieved:

- Facilitates lower overall effects on ecology (including designated sites, ecological connectivity, habitats) – due to utilisation of already developed but vacant lands and use of existing utilities.
- Buffers provided, including those outside of existing industrial/public utility sites and along shoreline amenity areas, would mitigate conflicts with ecological resources (habitats) along the southern boundary.
- Facilitates protection of ecology with respect to the provision of water services.
- Facilitates contribution towards the protection of ecology as a result of contributing towards the protection of environmental vectors, including water.
- Buffers provided, including those outside of existing industrial/public utility sites and along shoreline amenity areas and transport infrastructure, would mitigate:
    - Potential exposure of dwellings/ schools/ hospitals/ nursing homes to industrial hazards of unsuitable/ incompatible land-uses (such as heavy vehicle traffic, emissions or contaminated soils);
    - Loss of and conflicts with the usage of and access to amenities including parklands, playing fields and shore-side walks, especially in the east and south of the site.
- The heights of buildings would contribute towards the protection of amenity, especially in surrounding coastal areas.
- Facilitates protection of human health with respect to the provision of water services and the provision of transport infrastructure integrated with land use planning – and associated interactions with sustainable mobility, emissions and energy usage.
- Facilitates contribution towards the protection of human health as a result of contributing towards the protection of environmental vectors, including water.
- Facilitates lower overall effects on soil – due to utilisation of already developed but vacant lands and use of existing utilities.
- Facilitates management of potentially contaminated soils.
- Facilitates lower effects on ground and surface waters due to utilisation of already developed but vacant lands and use of existing utilities.
- Provides for planned infrastructure including water services infrastructure and transport infrastructure.
- Make use of existing water services.
- Facilitates contribution towards a shift from car to more sustainable and non-motorised transport modes.
- Facilitates contribution towards reducing increases in travel related greenhouse gas and other emissions to air that would occur as a result developing sites that are further from the City and less well serviced.
- A network of multiple linear parks would contribute towards efforts to encourage walking and cycling and the infiltration of a rapid bus loop into the site is provided for. Efforts to improve sustainable mobility and associated interactions (energy usage and emissions to air including noise and greenhouse gases) would be further contributed towards by the provision of community uses in the west of the site.
- Contribution towards the protection of cultural heritage by facilitating compliance with protection legislation.
- Buffers provided, including those outside of existing industrial/public utility sites and along shoreline amenity areas, would mitigate loss of and conflicts with the usage of and access to amenities including parklands, playing fields and shore-side walks, especially in the east and south of the site.
- The heights of buildings would contribute towards the protection of amenity, especially in surrounding coastal areas.

[4] European, or Natura 2000, sites comprise Special Areas of Conservation (designated and protected under the Habitats Directive) and Special Protection Areas (designated and protected under the Habitats Directive). Together these sites form the Natura 2000 network.

[5] Including the Dublin Urban Groundwater body and the River Liffey Estuary Lower Estuary and the Dublin Bay Coastal Water Body within the Liffey and Dublin Bay Catchment in the Eastern River Basin District.

3.3 Biodiversity and Flora and Fauna[6]

Poolbeg is a man-made peninsula comprising of fill that has been placed over estuarine deposits.

The SDZ lands at Poolbeg West are located to the east of Ringsend and Irish Town, to the west of Irishtown Nature Park, to the north of Sean Moore Park and Sandymount Strand, and to the south of the River Liffey.

Most of the SDZ lands have been covered by artificial surfaces and some patches are covered by semi-natural habitats. The most valuable part of the SDZ lands to biodiversity is the corridor that is found along the southern part of the SDZ, between a vegetated embankment and the coast. This corridor area provides for ecological connectivity and is adjacent to shoreline habitats, many of which are designated, as well as facilitating amenity usage. The coastal corridor has potential to be used by bats, in particular, for movement between foraging and roosting areas.

The Peninsula supports bird and wildlife as well as a variety of common flora and fauna typically associated with an urban environment.

Various species are known to utilise the SDZ and/or the areas surrounding the SDZ including the wider Poolbeg peninsula, Dublin Bay, Sandymount Strand and the Rivers Liffey and Dodder.

Birds include Brent Geese, Oystercatchers Black-tailed Godwits, Curlews, Redshank and Black-headed Gulls. Areas used by the birds include: Compensatory Grassland to the south of the wastewater treatment plant, Sean Moore Park East, Sean Moore Park West, Irishtown Stadium, Ringsend Park, Ringsend wastewater treatment plant storm tanks and South Dublin Bay intertidal sand and mudflats[7].

Two areas of note close to the SDZ are Irishtown Nature Park (a former landfill) and Sean Moore Park (which comprises mainly amenity grassland and exotic shrub species). As detailed in the Dublin City Biodiversity Action Plan 2015-2020, Irishtown Nature Park supports Pyramidal Orchid, Red-tailed Bumblebee, and a rare beetle[8].

Kestrels and Peregrine falcons have been observed hunting on the peninsula and many of the buildings present in the wider peninsula may be suitable for roosting bats.

There are mooring dolphins located to the north of Poolbeg that provide a nesting site for terns – these are designated as part of the South Dublin Bay and River Tolka Special Protection Area (SPA) and Dolphins, Dublin Docks proposed Natural Heritage Area (pNHA).

The wider Dublin Bay area is among the most highly designated locations in the country for biodiversity. The zone of influence of the Planning Scheme beyond the area to which it relates with respect to impacts upon ecology via surface waters upon ecological resources – including designated ecology – can be estimated through a precautionary approach to include areas within 15km of the SDZ boundary, although different features of the Planning Scheme would have differing zones of influence.

Despite its location surrounded by a city, Dublin Bay is an internationally significant wildlife reserve, principally on account of wading birds that over-winter in the area, including internationally important numbers of light bellied Brent geese and other species. These birds have complex requirements that include feeding areas and areas to roost (rest) when the strands are covered by high tide.

The water birds also use some grassland sites within the Planning Scheme area during the winter months.

[6] Areas referred to below are indicated on Figure 3.1.
[7] Sourced from Dublin Waste to Energy Facility Wildfowl Monitoring Reports prepared in response to An Bord Pleanála 2007 planning approval Condition 13.
[8] Sourced from Dublin City Council's Dublin City Biodiversity Action Plan 2015-2020.

Sightings of Otters and a Stoat in the area have been reported and they are known to use the Liffey and Dodder. Frogs have been found in the past at the ESB-owned pitch and putt course.

The shore areas and Irishtown Nature Park also contain locally significant bird and wildlife resources that have additional significance on account of their location at the heart of the City.

Ecological designations within/adjacent to the SDZ include:

- Candidate Special Areas of Conservation[9] (cSACs) and Special Protection Areas[10] (SPAs); and
- Proposed Natural Heritage Areas (pNHAs).

Protected Species include:

- Annex IV (Habitats Directive) species of flora and fauna, and their key habitats (i.e. breeding sites and resting places), which are strictly protected wherever they occur, whether inside or outside the above sites, e.g. otter and bats;
- Other species of flora and fauna and their key habitats which are protected under the Wildlife Acts, 1976-2000, wherever they occur; and
- 'Protected species and natural habitats' as defined in the European Liability Directive (2004/35/EC) and European Communities (Environmental Liability) Regulations, 2008, including: Birds Directive – Annex I species and other regularly occurring migratory species, and their habitats (wherever they occur) and Habitats Directive – Annex I habitats, Annex II species and their habitats, and Annex IV species and their breeding sites and resting places (wherever they occur).

The SDZ is located within the Dublin Bay United Nations Educational, Scientific and Cultural Organization (UNESCO) Biosphere Reserve. North Bull Island was designated as a Biosphere Reserve in 1981 because of its rare and internationally important habitats and wildlife and the designation was extended to the wider Dublin Bay in 2015, reflecting the Bay's significant environmental, economic, cultural and tourism importance, and extends to over 300 km^2. Over 300,000 people live within the Biosphere.

Both the Planning Scheme and the City Development Plan include a significant number of policies and objectives that must be complied with at project level and that will ensure that the protection and management of biodiversity and flora and fauna is contributed towards[11].

The rare plants database was not directly consulted with as part of this Strategic Environmental Assessment. The information contained within this database would not determine the allocation of Land Use Zoning Objectives. Compliance with the various provisions relating to biodiversity and flora and fauna will include consulting relevant databases (such as the rare plants database) and undertaking appropriate levels of field investigations.

Figure 3.2 maps cSACs (and SPAs) within 15km of the SDZ.

Previous changes in land uses arising from human development have resulted in a loss of biodiversity and flora and fauna however legislative objectives governing biodiversity and fauna were not identified as being conflicted with.

[9] Designated under the Habitats Directive (Directive 92/43/EEC on the conservation of natural habitats and of wild fauna and flora).
[10] Designated under the Birds Directive (EC Directive 200/147/EC on the conservation of wild birds)
[11] This includes, for example, City Development Plan Policy GI23: To protect flora, fauna and habitats, which have been identified by Articles 10 and 12 of Habitats Directive, Birds Directive, Wildlife Acts 1976-2012, the Flora (Protection) Order 2015 S.I No. 356 of 2015, European Communities (Birds and Natural Habitats) Regulations 2011 to 2015.

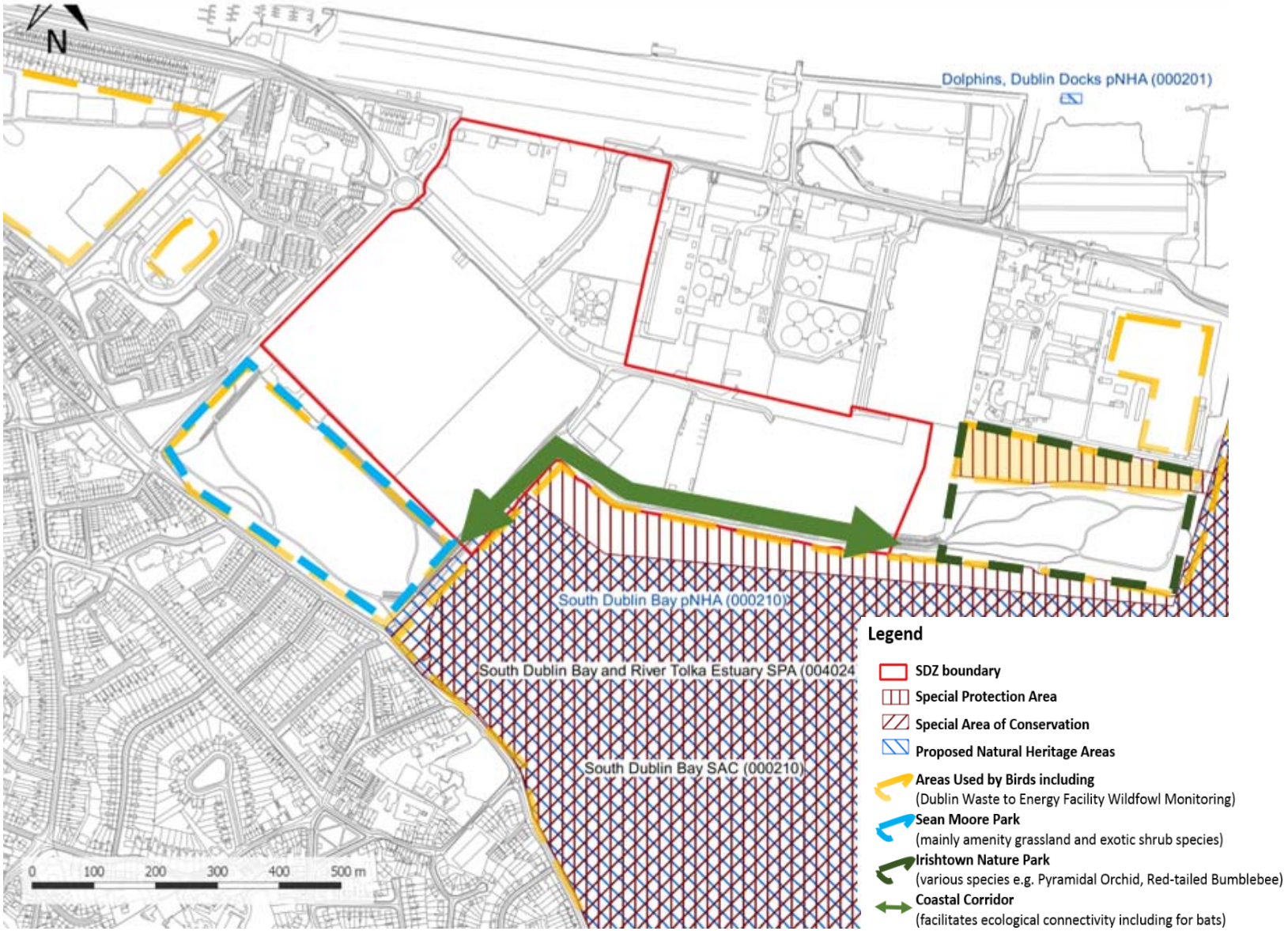

Figure 3.1 Biodiversity and Flora and Fauna – areas referred to under Section 3.3
Source: CAAS (2016)

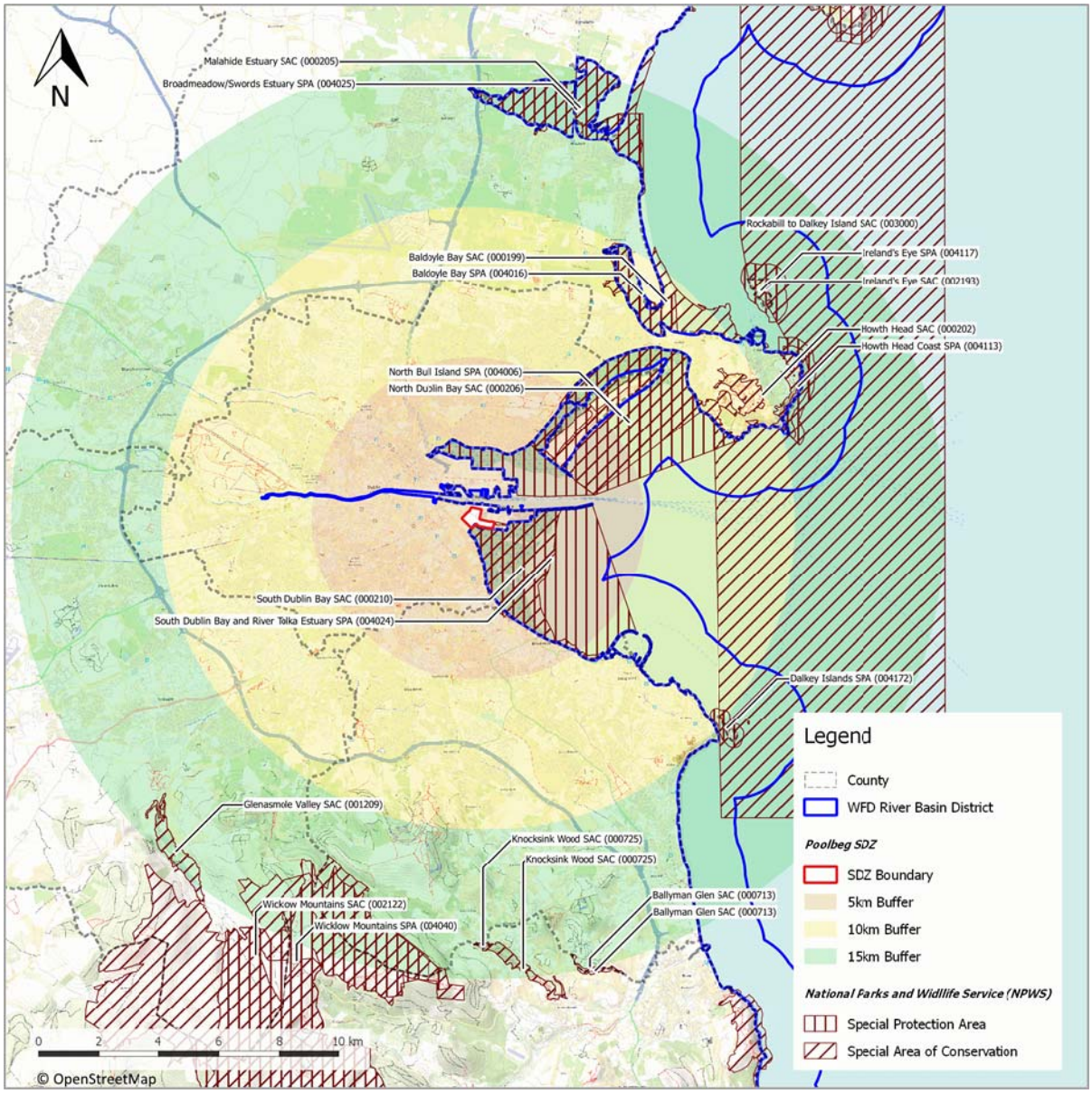

Figure 3.2 European Sites – Candidate Special Areas of Conservation and Special Protection Areas
Source: NPWS (2016)

3.4 Population and Human Health

3.4.1 Population

There are currently no residential uses located on the SDZ lands and closest centres of residential populations are Ringsend to the north of the SDZ and Sandymount to the south. There is an employment population located in the various industrial and port uses in the wider Poolbeg area.

The southern edge of the SDZ site accommodates a heavily-used walk that leads to the Irishtown Nature Park. It is one of the more heavily used unstructured recreational resources in this part of the City. At low-tide Sandymount Strand is also a popular and much-used amenity for walking and bird-watching.

The Clanna Gael Fontenoy GAA Club and associated parkland immediately adjoins the south-western boundary of the site. The playing fields and parklands are heavily used.

3.4.2 Human Health

The impact of implementing the Planning Scheme on human health is determined by the impacts which the Scheme will have upon environmental vectors. Environmental vectors are environmental components, such as air, water or soil, through which contaminants or pollutants, which have the potential to cause harm, can be transported so that they come into contact with human beings. Hazards or nuisances to human health can arise as a result of exposure to these vectors arising from incompatible adjacent land uses for example.

Emission limits for discharges to air, soil and water are set with regards to internationally recognised exposure limit values. These are generally set to be many times the safe exposure limit - in order to provide protection. In the event that a land-use plan began to have adverse health effects on surrounding populations it is likely that it would have been identified as being in breach of such emission standards at a very early stage - and long before the manifestation of any adverse health effects in the population.

3.4.3 Seveso III Sites[12]

Major industrial accidents involving dangerous substances pose a significant threat to humans and the environment; such accidents can give rise to serious injury to people or serious damage to the environment, both on and off the site of the accident. In Europe, a catastrophic accident in the Italian town of Seveso in 1976 prompted the adoption of legislation on the prevention and control of such accidents.

The so-called Seveso-Directive (Directive 82/501/EEC) was subsequently amended in view of the lessons learned from later accidents such as Bhopal, Toulouse or Enschede resulting in the Seveso-II (Directive 96/82/EC). In 2012 the Seveso-III (Directive 2012/18/EU) was adopted taking into account, amongst other factors, the changes in EU legislation on the classification of chemicals and increased rights for citizens to access information and justice.

The Chemicals Act (Control of Major Accident Hazards involving Dangerous Substances) Regulations 2015 (S.I. No. 209 of 2015) (the "COMAH Regulations"), implement the Seveso III Directive (2012/18/EU). The purpose of the COMAH Regulations is to lay down rules for the prevention of major accidents involving dangerous substances, and to seek to limit as far as possible the consequences for human health and the environment of such accidents, with the overall objective of providing a high level of protection in a consistent and effective manner.

The intention is to achieve this through tiered controls on the operators of the establishments subject to the regulations - the larger the quantities of dangerous substances present at an establishment, the more onerous the duties on the operator.

The European Communities (Control of Major Accident Hazards Involving Dangerous Substances) Regulations 2006 and the European Union (Control of Major Accident Hazards Involving Dangerous Substances) (Amendment) Regulations 2013, which implemented the Seveso II Directive (96/82/EC), have been revoked by the European Union (Control of Major Accident Hazards Involving Dangerous Substances) (Revocation) Regulations 2015 (S.I. No. 208 of 2015) and replaced by the COMAH Regulations.

SEVESO III sites (outlined in green) within the wider Poolbeg and Docklands are shown on Figure 3.3 as are the associated Consultation Zones (outlined in red). Consultation zones of the closest sites are primarily concerned with containing contaminants or pollutants that have the potential to cause harm to environmental vectors such as water (as opposed to direct effects on human health/loss of life). A

[12] This section reproduces some of the information provided by the Health and Safety Authority at www.hsa.ie

worst case scenario could involve an accident with potential environmental consequences. There is a tertiary containment on these sites with material contained most immediately by a tank, then by a bund then by a berm/other containment.

The HAS were consulted as part of the Planning Scheme preparation process and identified that: any accident would be expected to be contained on the relevant sites; and SEVESO III sites do not pose particular risks with respect to the emerging provision of new housing development in the south/west of the SDZ.

3.4.4 Radon

The greatest health risk from radiation in Ireland is caused by radon. The presence of radon gas, a naturally occurring radioactive gas that originates from the decay of uranium in rocks and soils, occurs across the country. It accounts for more than half of the total radiation dose received by the Irish population. As a known carcinogen, in the same category as tobacco smoke and asbestos it is a cause of lung cancer. Exposure to radon for long periods or at high concentrations can lead to lung cancer. Between one and five per cent of the homes in vicinity of the SDZ are estimated to be above a set Reference Level, which is a relatively low percentage when compared with other areas across the country. The Planning Scheme requires that all habitable ground floor areas be located above an undercroft/basement to enable ventilation beneath each building. This ventilation will mitigate against any potential build-up of Radon within buildings on the site.

3.4.5 Existing Problems[13]

In the absence of mitigation, human health has the potential to interact with effects arising from other environmental components or factors such as soil, air or water. Various mitigation has been integrated into the Planning Scheme that addresses these effects.

Figure 3.3 COMAH establishments in the Dublin Port area and their Consultation Zones
Source: Dublin City Council (2016)

[13] Environmental problems arise where there is a conflict between current environmental conditions and ideal targets. If environmental problems are identified at the outset they can help focus attention on important issues and geographical areas where environmental effects of the plan or programme may be likely.

3.5 Soil

3.5.1 Contamination and Remediation Assessment

All of the SDZ consists of man-made fill placed over estuarine deposits. Some of these sites have been resolved (former Glass Bottle Site) some are still used for, or are adjacent to, potentially contaminating activities. It should be assumed that there is potential to encounter sites of historical contamination throughout the unresolved portions of the site. The Irishtown Nature Park at the eastern extremity is also a former landfill.

In the absence of mitigation, contaminated materials have the potential to adversely impact upon human health, water quality and habitats and species.

In addition to having significant contamination potential the SDZ site is underlain by deposits that include areas of very high permeability and hydraulic connectivity – both within the deposits and with the marine and estuarine tidal waters that immediately adjoin.

A Contamination and Remediation Assessment (CRA) that was undertaken provides a review of available documentation on contamination, a conceptual site model for the area of the Planning Scheme and a high-level qualitative risk assessment to establish low, medium and high risk areas. It also includes outline remediation measures including requirements relating to detailed site-specific investigations and contaminated land risk assessments at project level.

3.5.2 Existing Problems

Existing problems under the environmental component of soil relate to contamination issues that are detailed above. The Planning Scheme includes robust measures to facilitate remediation of relevant parts of the site.

3.6 Water

3.6.1 Water Status

The European Water Framework Directive (WFD) requires that all Member States implement the necessary measures to prevent deterioration of the status of all waters - surface, ground, estuarine and coastal - and protect, enhance and restore all waters with the aim of achieving “good status”. All public bodies are required to coordinate their policies and operations so as to maintain the good status of water bodies which are currently unpolluted and improve polluted water bodies to good status.

The main river catchment within Dublin City is the Liffey and Dublin Bay catchment.

The SDZ is located to the south of the River Liffey and River Tolka estuaries, with the River Liffey estuary closer to the SDZ. Both estuaries are classified by WFD as transitional waterbodies of *moderate status*[14] (moderate status is less than the good status that is required by the WFD Directive). The remaining waters in Dublin Bay, including those bordering the east of the SDZ lands are classified by WFD as coastal waterbodies of *good status*[15].

For groundwater bodies, the approach to classification is different from that for surface water. For each body of groundwater, both the chemical status and the quantitative must be determined. Both have to be classed as either *good* or *poor*. The WFD sets out a series of criteria that must be met for a body to be classed as good chemical and quantitative status. The EPA has classified groundwater status in vicinity of SDZ Planning Scheme as being of *good* status.

[14] Source: EPA (2016) http://gis.epa.ie/Envision (Transitional Waterbody WFD Status 2010-2015)
[15] Source: EPA (2016) http://gis.epa.ie/Envision (Coastal Waterbody WFD Status 2010-2015)

Groundwater in the wider City area is part of the Dublin Urban Groundwater body that flows in a general easterly direction and discharges to the many rivers within the groundwater body or directly to Dublin Bay[16].

3.6.2 Flooding

Flooding is an environmental phenomenon which, as well have causing economic and social impacts, could in certain circumstances pose a risk to human health.

Lands within the wider area of which the SDZ is a part, have the potential to be vulnerable to flooding such as that arising from fluvial (from the River Liffey and River Dodder), tidal and pluvial flooding sources, and this vulnerability could be exacerbated by sea level rise and changes in the occurrence of severe rainfall events and associated flooding. Local conditions such as low-lying lands and slow surface water drainage can increase the risk of flooding.

The Planning Scheme has undergone Strategic Flood Risk Assessment (SFRA) in response to requirements contained in *The Planning System and Flood Risk Management Guidelines for Planning Authorities* (DEHLG/OPW, 2009). The findings of the SFRA are presented in a report that accompanies the Planning Scheme.

The SFRA facilitated the identification of Flood Risk Zones or areas that are subject to elevated risk of flooding. Only minor parts of the SDZ along its southern/eastern boundary are located within either Flood Zones A or B (see Figure 3.3) – this is due elevated levels of coastal flood risk. The Planning Scheme provides for the retention of the current amenity uses in these areas – this use is compatible with elevated levels of flood risk.

There is no fluvial risk (risk from rivers or streams) identified within the SDZ.

In the surrounding areas, available information on flood risk identifies larger parts of the wider Poolbeg area as being subject to elevated levels of coastal risk and parts of Ringsend and Sandymount as being subject to elevated levels of fluvial and coastal risk.

3.6.3 Existing Problems

Subject to exemptions provided for by Article 4 of the WFD[17], based on available data on the status of waters within the Dublin City, the transitional water bodies of the River Liffey and River Tolka will need improvement in order to comply with the objectives of the WFD. Note that these classifications in the County are contributed towards by the morphological pressures found along these often urban waterbodies such as culverts and river straightening.

There are relatively minor areas of land at elevated levels of flood risk within the SDZ and these the Planning Scheme provides for the retention of the current amenity uses in these areas – this use is compatible with elevated levels of flood risk.

[16] Source: DCC (2013) *North Lotts and Grand Canal Dock Planning Scheme SEA Environmental Report*

[17] Article 4 of the WFD sets out various exemptions for deterioration in status caused as a result of certain physical modifications to water bodies. This is provided: all practicable mitigation measures are taken; there are reasons of overriding public interest or the benefits to human health, safety or sustainable development outweigh the benefits in achieving the WFD objective; there are no better alternatives; and the reasons for the physical modification are explained in the relevant river basin management plan.

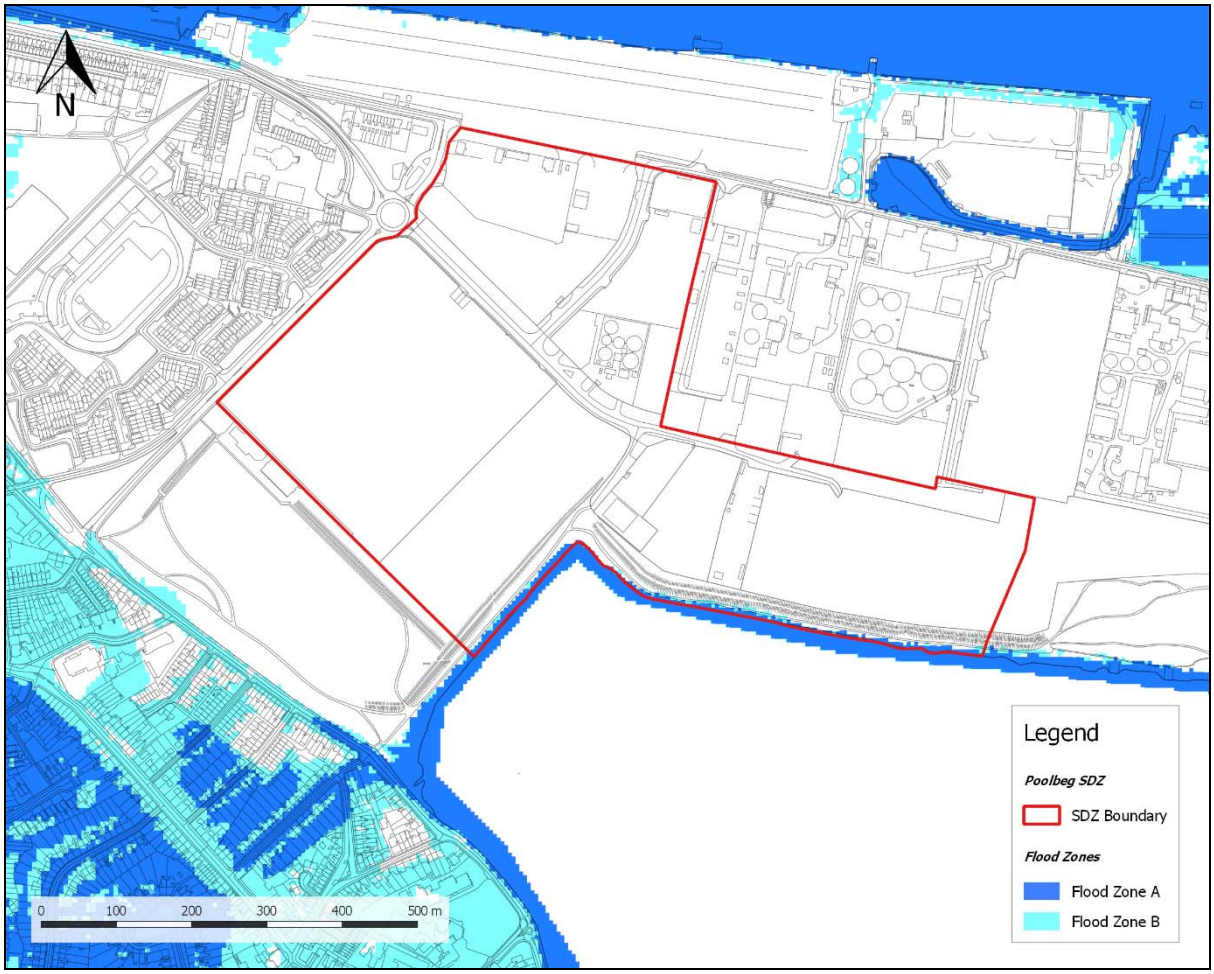

Figure 3.4 Areas of Elevated Flood Risk: Flood Risk Zones A and B
Source: CAAS (2016)

3.7 Air and Climatic Factors

3.7.1 Climatic Factors

The key issue involving the assessment of the effects of implementing the Planning Scheme on climatic factors relates to greenhouse gas emissions arising from transport. Interactions are also present with flooding and the Dublin District Heating System.

The Planning Scheme facilitates improvements in sustainable mobility, thereby facilitating reductions in and limiting increases of greenhouse gas emissions. Such emissions would occur otherwise with higher levels of motorised transport and associated traffic.

Ireland's emissions profile has changed considerably since 1990, with the contribution from transport more than doubling and the share from agriculture reducing since 1998. Travel is a source of:

1. Noise;
2. Air emissions; and
3. Energy use (42.2% of Total Final Energy Consumption in Ireland in 2015 was taken up by transport, the largest take up of any sector)[18].

For 2015, total national greenhouse gas emissions are estimated to be 3.7% higher than emissions in 2014. This follows the 0.3% decrease in emissions reported for 2014, most likely attributable to a mild winter in that year. Emission reductions have been recorded in 8 of the last 10 years, however this has largely been as a result of reduced economic activity. There is now strong evidence that emissions are once again increasing in line with economic and employment growth, particularly in the Transport sector.

[18] Sustainable Energy Ireland (2016) *Energy in Ireland 1990 – 2015*

Greenhouse gas emissions from the Transport sector increased by 4.2% in 2015. This is the third successive year of increases in transport emission. Greenhouse gas emissions in 1990 and 2015 by sector show a more than doubling of the proportion of emissions from the Transport sector, from 9.2% in 1990 to 19.8% in 2015[19].

Maximising sustainable mobility will help Ireland meet its emission target for greenhouse gases under the 2020 EU Effort Sharing target which commits Ireland to reducing emissions from those sectors that are not covered by the Emissions Trading Scheme (e.g. transport, agriculture, residential) to 20% below 2005 levels. Subsequently, by 2030, Ireland is required to reduce its carbon emissions by up to 30% compared to 2005 levels.

Land-use planning contributes to the number and the extent of which journeys occur. By addressing journey time through land use planning and providing more sustainable modes and levels of mobility (as is provided for by the Planning Scheme), noise and other emissions to air and energy use can be minimised. Furthermore, by concentrating populations, greenfield development - and its associated impacts - can be minimised and the cost of service provision can be reduced.

Provisions in relation to green infrastructure have been integrated into the Planning Scheme.

3.7.2 Ambient Air Quality

In order to protect human health, vegetation and ecosystems, EU Directives set down air quality standards in Ireland and the other Member States for a wide variety of pollutants. These pollutants are generated through fuel combustion, in space heating, traffic, electricity generation and industry and, in sufficient amounts, could affect the well-being of the areas inhabitants. The EU Directives include details regarding how ambient air quality should be monitored, assessed and managed.

In order to comply with the directives mentioned above, the EPA measures the levels of a number of atmospheric pollutants. For the purposes of monitoring in Ireland, four zones are defined in the Air Quality Standards Regulations 2002 (SI No. 271 of 2002). The main areas defined in each zone are:

- Zone A: Dublin Conurbation;
- Zone B: Cork Conurbation;
- Zone C: Other cities and large towns comprising Limerick, Galway, Waterford, Drogheda, Dundalk, Bray, Navan, Ennis, Tralee, Kilkenny, Carlow, Naas, Sligo, Newbridge, Mullingar, Wexford, Letterkenny, Athlone, Celbridge, Clonmel, Balbriggan, Greystones, Leixlip and Portlaoise; and
- Zone D: Rural Ireland, i.e. the remainder of the State - small towns and rural areas of the country - excluding Zones A, B and C.

The SDZ is located within Zone A. The current air quality within this zone is identified by the EPA as being of good quality[20].

The EPA's (2016) *Air Quality in Ireland 2015* identifies that:

- The World Health Organisation (WHO) has intimated that there is no safe limit for air pollution.
- In general, air quality in Ireland is good and compares favourably with other EU member states, largely as a result of the relative absence of large cities, weather and access to predominantly clean air masses from the south west. However this status is both weather dependent and a comparison, relative to European neighbours many of whom are in exceedance of EU limit values for pollutants such as particulate matter, ozone and nitrogen dioxide.
- As the improvement in the Irish economy continues, Ireland will face challenges to comply with EU legislation for pollutants emitted from car exhausts – especially in urban areas.

The Planning Scheme facilitates improvements in sustainable mobility, thereby facilitating reductions in and limiting increases of emissions to air including noise. Such emissions would occur otherwise with higher levels of motorised transport and associated traffic.

[19] EPA (2016) *Ireland's Provisional Greenhouse Gas Emissions in 2015*
[20] The index was calculated at 13:31, 19 January 2017 (http://www.epa.ie/air/quality/)

3.7.3 Odour

The Ringsend Wastewater Treatment Works was completed in 2003 and contributes towards cleaner water in Dublin Bay.

Historically, there were odour associated problems with the Ringsend Waste Water Treatment Works. Having completed short-term odour abatement measures in 2007, significant works were undertaken in 2008. These included permanent covering of the primary tanks with provision of associated odour control units and installation of new high capacity combustion chambers to all three dryers. These works were completed in November 2008 after which there was a drop off in complaints.

In 2009, significant work was carried out on the odour abatement equipment leading to a raised level of complaints in April and June of that year. This work has resulted in improved effectiveness and increased capacity of the odour abatement system. The plant operators provide a twenty four hour maintenance service and any breakdowns in odour equipment are addressed as quickly as possible.

Dublin City Council has formalised an Odour Monitoring Programme that encompasses continuous on-site monitoring and, on foot of complaints, speedy investigation of sources of odour.

Dublin City Council applied to An Bord Pleanála and in 2012 received permission to carry out upgrade and expansion works at the plant, including works to significantly improve odour abatement measures on site. Works identified[21] as part of the upgrade include:

- The capture and treatment of the ventilation air from both dryer buildings;
- The provision of 50 % additional capacity for the Main Odour Control Unit;
- The capture and treatment of the ventilation air from the Screenings Building; and
- The enclosure of the Grit Storage skips and provision of odour control for them.

The upgrade works and the Council's Odour Monitoring Programme will ensure both the avoidance of foreseeable odour issues and the prompt remediation of unforeseeable events.

3.7.4 Noise

Dublin City Council is actively engaged in the strategic management of noise in compliance with requirements under the Environmental Noise Directive.

The northern boundary of the site adjoins land-uses that include power generation, waste treatment, fuel storage and handling - as well as risks arising from the movement of containerised and loose material in HGV. Risks include emissions to air - licenced, accidental or occasional as well as exposure to both blast hazard and compounds of combustion (smoke) arising from accidents at these industrial and infrastructural sites. Noise emissions are an additional factor arising from these activities that needs to be taken into account.

All of these issues are governed by quantitative regulations that set down acceptable/permissible levels of public exposure and especially exposure by areas where people sleep, including houses and hotels.

From the outset specific consideration of these issues has informed the allocation of land-uses and the height and configuration of buildings, either to avoid or minimise exposure or to create massing that will reduce exposure of vulnerable land-uses.

3.7.5 Existing Problems

Legislative objectives governing air and climatic factors within SDZ Planning scheme area were not identified as being conflicted with.

[21] Dublin City Council (2012) *Ringsend Wastewater Treatment Works Environmental Impact Statement*

3.8 Material Assets

3.8.1 Wastewater

The SDZ Planning Scheme area will be served by the wastewater treatment plant at Ringsend, which caters for the Dublin Region.

The EPA's (2016) "Urban Wastewater Treatment in 2015" report identifies that the Ringsend plant is currently operating over design capacity and failed Nitrogen and Phosphorus compliance requirements in 2015.

The expansion and upgrading of the Ringsend Wastewater Treatment Plan is an urgent priority for Irish Water. It is intended to upgrade and expand the treatment works to a greater capacity.

3.8.2 Drinking Water

The Water Services Strategic Plan (2015) sets out the strategic objectives for the delivery of water services over the next 25 years up to 2040. The supply of a safe and reliable water supply is essential to public health.

Dublin City Council will work closely and support Irish Water to provide and maintain an adequate public water supply to the SDZ and surrounding areas and facilitate connections. Poolbeg and the surrounding area is currently supplied by the Stillorgan Water Supply Scheme.

The EPA publishes a Remedial Action List which identifies water supplies which are not in compliance with parameters specified in the European Communities (Drinking Water) Regulations (No. 2) 2007. The most recent EPA Remedial Action List (Q3 of 2016) does not include the Stillorgan Water Supply Scheme.

3.8.3 Waste Management

Waste management is an integral requirement essential in the promotion of sustainable development, enhancing good public health and the protection of the environment.

The Greater Dublin Waste Management Plan provides a framework for minimising waste, encouraging recycling and ensuring the avoidance of environmental pollution. The Planning Scheme includes the policy of diversion from landfill in accordance with targets set out in the European Union Landfill Directive.

Although there are no recycling facilities within the SDZ, a number of facilities are in close proximity. The Ringsend Recycling Centre is located just outside the area and allows domestic users to recycle a wide range of materials. There are also a number of bottle banks in close proximity to the SDZ, namely at East Wall Road and in Ballsbridge. A small local bottle bank to serve the new residential community will be required. The service area associated with the commercial uses proposed on site may be a suitable location for this, preferably as a below ground installation.

3.8.4 Dublin District Heating System

The Dublin District Heating System (DDHS) is currently being progressed by Dublin City Council, initially focussing on the Dublin Docklands SDZ and the Poolbeg Peninsula. The Dublin Waste to Energy Plant and other industrial facilities have been identified as potential and initial sources of waste heat within the local docklands area.

Elements of the DDHS have been installed within the north docklands area, and within the new Liffey Tunnel which facilitates the roll out of district heating network both north and south of the river Liffey. During the lifetime of the Planning Scheme, the Council will work to ensure the successful implementation of this critically important piece of infrastructure which will make Dublin City a more sustainable and energy efficient city, less dependent on imported and fossil fuels, more competitive and environmentally clean, thus attracting foreign direct investment, and aiming to be an effective leader in managing climate change.

3.8.5 Existing Problems

There are a number of challenges with respect to the provision of water services infrastructure which are summarised above.

As detailed in the Planning Scheme, in order to achieve the vision of the SDZ Planning Scheme and the key principles, delivery of infrastructural services is essential and this will be achieved through the strategy of, inter alia, investment in physical infrastructure which is required to ensure that there is adequate capacity to accommodate the quantum of development envisaged in the Planning Scheme.

3.9 Cultural Heritage

3.9.1 Archaeological Heritage[22]

The SDZ is located on reclaimed ground and has potential for the survival of buried archaeological features and structures including jetties, piers, fish traps, wrecks and other features of archaeological potential. The Wreck Inventory of Ireland Database lists numerous wrecks in the vicinity of the SDZ, which are subject to statutory protection under Section 3 of the 1987 National Monuments (amendment) Act. The Poolbeg West SDZ is located adjacent to a zone of archaeological potential established around the South Bull Wall, which is subject to statutory protection in the Record of Monuments and Places (Recorded Monument DU019-029 and DU018-066), established under section 12 of the National Monuments (Amendment) Act 1994.

The National Monument Acts 1930-2004 are the primary legislative framework for the protection of archaeological heritage in Ireland. Through the definition of monuments, historic monuments, and national monuments a wide range of structures and features fall under the remit of these Acts.

The Record of Monuments and Places (RMP) was established under Section 12 of the National Monuments (Amendment) Act 1994 and structures, features, objects or sites listed protected by being included within this record are known as Recorded Monuments.

The spatial distribution of archaeological monuments and associated Record of Monuments and Places (RMP)/Sites and Monuments Record (SMR) Zones of Notifications[23] is shown on Figure 3.4. There are no archaeological monuments identified within the SDZ however there are parts of Archaeological Zones of Notifications established around the South Bull Wall along the northern boundary of the site.

The Underwater Archaeology Unit (UAU) was established within the National Monuments Service to manage and protect Ireland's underwater cultural heritage, including the quantification of the underwater resource and assessing development impacts in order to manage and protect this aspect of Ireland's heritage. The Shipwreck Inventory is principally a desktop survey with information gathered from a broad range of cartographic, archaeological and historical sources, both documentary and pictorial. An inventory of wrecks covering the coastal waters off County Dublin was published in 2008. Wrecks over 100 years old and archaeological objects found underwater are protected under the National Monuments (Amendment) Acts 1987 and 1994. Significant wrecks less than 100 years old can be designated by Underwater Heritage Order (UHO) on account of their historical, archaeological or artistic importance. UHOs can also be used to designate areas of seabed or land covered by water to more clearly define and protect wreck sites and archaeological objects. Under the legislation all diving on known protected wreck sites or with the intention of searching for underwater cultural heritage is subject to licensing requirements.

There are a number of historically recorded shipwrecking events located in vicinity of the Dublin Bay area. While the potential wrecksites will not be directly impacted by the Planning Scheme, the City Development Plan requires that proposed developments that may have potential to impact on riverine, inter-tidal and sub-tidal environments shall be subject to an underwater archaeological assessment in advance of works.

[22] This section includes information from Dublin City Council's (2013) *North Lotts and Grand Canal Dock Planning Scheme* and associated documents

[23] These relate to the giving of notice when works are being proposed in these areas.

3.9.2 Architectural Heritage

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

Part IV of the Planning and Development Act requires every development plan to include a record of protected structures (RPS). A 'protected structure' is a structure or a specific feature of the structure as may be specified that a Planning Authority considers to be of special interest from an architectural, historical, archaeological, artistic, cultural, scientific, social or technical point of view.

There are no entries to the Record of Protected Structures located within the SDZ however there are a number of entries located to the north of the SDZ along the Pigeon House Road including various houses, sea walls, remnants of Pigeon House Fort, surviving parts of the former St. Catherine's Hospital, the former Pigeon House Hotel and the former Pigeon House power station. The former Pigeon House power station contributes towards the industrial heritage of the Poolbeg area – this coal-fired power station was opened in 1903 and was the country's earliest major power production facility and the world's first three-phase generating station.

In accordance with Section 81 of the Planning and Development Act, a Development Plan is required to include an objective to preserve the character of a place, area, group of structures or townscape, taking account of building lines and heights, that:

> (a) is of special architectural, historical, archaeological, artistic, cultural, scientific, social or technical interest or value, or
> (b) contributes to the appreciation of protected structures,

if the Planning Authority is of the opinion that its inclusion is necessary for the preservation of the character of the place, area, group of structures or townscape concerned and any such place, area, group of structures or townscape shall be known as an "Architectural Conservation Area" (ACA).

There are presently 21 Architectural Conservation Areas designated within Dublin City. Sandymount and Environs ACA is located in vicinity of the SDZ Planning Scheme (as shown in the map on Figure 3.4). There is a significant stock of nineteenth and twentieth century structures in Sandymount village, a number of which are protected structures. Sandymount village is primarily a nineteenth century development with houses shown laid out around Sandymount Green on the first edition Ordnance Survey map[24]. The Sandymount and Environs ACA includes a number of entries to the Record of Protected Structures.

3.9.3 Existing Problems

No existing conflicts with legislative objectives governing archaeological and architectural heritage have been identified.

[24] Source: Dublin City Council (2016) Dublin City Development Plan 2016-2022

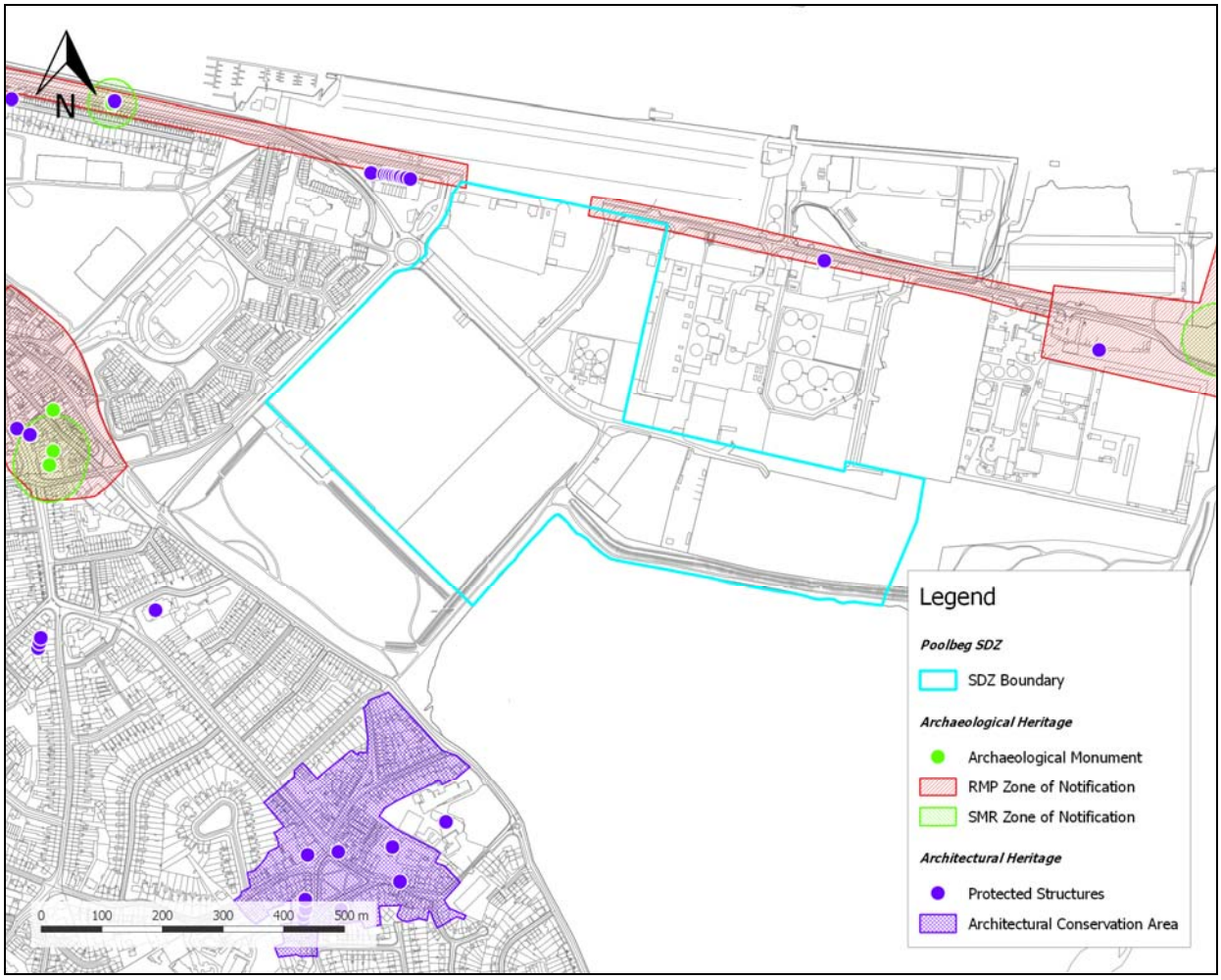

Figure 3.5 Cultural Heritage (Including Architectural and Archaeological Heritage)

3.10 Landscape

The southern edge of the SDZ site accommodates a heavily-used walk that leads to the Irishtown Nature Park. It is one of the more heavily used unstructured recreational resources in this part of the City. At low-tide Sandymount Strand is also a popular and much-used amenity for walking and bird-watching.

The Clanna Gael Fontenoy GAA Club and associated parkland immediately adjoins the south-western boundary of the site. The playing fields and parklands are heavily used. These amenities are highly valued by local communities and are closely monitored for anything that could adversely affect access to or use of these amenities – during the use or construction phases.

Traffic and container areas create an impression of low visual amenity in the north-eastern and northern boundaries of the SDZ. These are locally perceived to be heavily trafficked and dangerous for pedestrians. The container handling areas that adjoin these roads further detract from any sense of this area having a quality environment.

The Dublin City Council Development Plan 2016-2022 recognises the unique landscape qualities of the Poolbeg Peninsula, rivers and bay area and makes provision to protect and enhance them, and to retain the existing open character and nature of the coastal views from Irishtown Nature Park.

The Planning Scheme contributes towards the protection of the existing amenity in the areas as well as recognising the various views obtainable from the SDZ including those towards the coast, Sandymount Strand, Dún Laoghaire and the Dublin Mountains.

New developments have resulted in changes to the visual appearance of lands within the SDZ Planning Scheme however legislative objectives governing landscape and visual appearance were not identified as being conflicted with.

3.11 Appropriate Assessment

Appropriate Assessment (AA) Screening and Stage 2 AA have been undertaken alongside the Planning Scheme. The requirement for AA is provided under the EU Habitats Directive (Directive 1992/43/EEC). The Stage 2 AA concluded that the Planning Scheme will not affect the integrity of the Natura 2000 network of designated sites[25].

The preparation of the Planning Scheme, SEA and AA has taken place concurrently and the findings of the AA have informed both the Planning Scheme and the SEA. Various provisions have been integrated into the Planning Scheme through the AA process.

3.12 Strategic Flood Risk Assessment

A Strategic Flood Risk Assessment (SFRA) has been undertaken alongside the Planning Scheme. The requirement for SFRA is provided under 'The Planning System and Flood Risk Management Guidelines for Planning Authorities' (DEHLG, 2009).

The preparation of the Planning Scheme, SEA and SFRA has taken place concurrently and the findings of the SFRA have informed both the Planning Scheme and the SEA.

[25] Except as provided for in Section 6(4) of the Habitats Directive, viz. There must be:
(a) no alternative solution available,
(b) imperative reasons of overriding public interest for the plan/project to proceed; and
(c) adequate compensatory measures in place.

3.13 Strategic Environmental Objectives

Strategic Environmental Objectives (SEOs) are methodological measures against which the environmental effects of the Planning Scheme can be tested. If complied with in full, SEOs would result in an environmentally neutral impact from implementation of the Planning Scheme. The SEOs are set out under a range of topics and are used as standards against which the provisions of the Planning Scheme can be evaluated in order to help identify areas in which potential adverse impacts may occur. SEOs are distinct from the objectives of the Planning Scheme and are developed from international and national policies that generally govern environmental protection objectives. Such policies include those of various European Directives which have been transposed into Irish law and which are intended to be implemented within the Planning Scheme area.

Table 3.1 Strategic Environmental Objectives

SEO Code	SEO
Biodiversity and Flora and Fauna	
B1	To ensure compliance with the Habitats and Birds Directives with regard to the protection of European Sites and Annexed habitats and species[26]
B2	To ensure compliance with Article 10 of the Habitats Directive with regard to the management of features of the landscape which - by virtue of their linear and continuous structure or their function act as stepping stones (designated or not) - are of major importance for wild fauna and flora and essential for the migration, dispersal and genetic exchange of wild species
B3	To avoid significant impacts on relevant habitats, species, environmental features or other sustaining resources in designated sites including Wildlife Sites and to ensure compliance with the Wildlife Acts 1976-2010 with regard to the protection of listed species
Population and Human Health	
PHH1	To protect populations and human health from exposure to incompatible landuses such as those arising from heavy vehicle traffic, emissions or contaminated soils
PHH2 (and L1)	To protect use of and access to amenities including parklands, playing fields and shore-side walks
Soil	
S1	To maximise the re-use of brownfield land thereby avoiding the need to develop greenfield land elsewhere
Water	
W1	To maintain and improve, where possible, the quality and status of surface waters
W2	To prevent pollution and contamination of ground water
W3	To comply as appropriate with the provisions of the Planning System and Flood Risk Management: Guidelines for Planning Authorities (DEHLG, 2009)
Air and Climatic Factors	
C1	To contribute towards sustainable mobility and help to facilitate the achievement of higher level targets relating to air pollution greenhouse gas emission targets
Material Assets	
M1	To serve new development with adequate and appropriate wastewater treatment
M2	To serve new development with adequate drinking water that is both wholesome and clean
M3	To reduce waste volumes, minimise waste to landfill and increase recycling and reuse
Cultural Heritage	
CH1	To protect archaeological heritage including scheduled entries to the Record of Monuments and Places and/or their context
CH2	To protect architectural heritage including entries to the Record of Protected Structures and Architectural Conservation Areas and their context
Landscape	
L1 (and PHH2)	To protect use of and access to amenities including parklands, playing fields and shore-side walks

[26] 'Annexed habitats and species' refer to those listed under Annex I, II & IV of the EU Habitats Directive and Annex I of the EU Birds Directive.

Section 4 Alternatives

4.1 Introduction

The SEA Directive requires that reasonable alternatives (taking into account the objectives and the geographical scope of the plan or programme) are identified, described and evaluated for their likely significant effects on the environment.

4.2 Description of Alternatives

4.2.1 Alternative Scenario 1: *A High Quantum of Development*

This alternative maximises the quantum of built development across the site by using the greatest possible surface area and densities for both commercial/employment and residential development, taking into account minimal higher level planning and legislative requirements.

The heights of buildings are maximised on all plots, throughout the SDZ.

No land is provided for community uses additional to those already existing in the vicinity of the site.

Minimal buffers are provided outside of existing industrial/public utility sites and along shoreline amenity areas and transport infrastructure.

Development Plan Standards with respect to Open Space are largely met using lands that are incidental to new commercial/employment and residential blocks.

There is limited space for non-essential linkages through the site or for public transport services, such as cycling.

4.2.2 Alternative Scenario 2: A Medium Quantum of Development

This alternative provides for a medium quantum of built commercial/employment and residential development across the site, at medium densities.

Heights of buildings provide for a medium use of the site, commensurate with its strategic location. Heights provided for are higher in the north of the site and lower in the south.

Lands are provided for community uses in the west of the site, adjacent to existing community uses to the southwest of the SDZ.

Buffers are provided outside of existing industrial/public utility sites and along shoreline amenity areas and transport infrastructure.

Development Plan Standards with respect to Open Space are met and exceeded with a network of multiple linear parks linking together open space to the south of the site, a village green and square in the centre of the site and the shore to the east of the site.

Infiltration of a rapid bus loop into the site is provided for. The various linear parks are utilised to provide linkages for walking and cycling while there is sufficient space for public transport services, such as cycling.

4.2.3 Alternative Scenario 3A: *A Low Quantum of Development (mixed uses)*

This alternative provides for a low quantum of built development across the site at lower densities. There is a mix of commercial/employment and residential development.

Heights of buildings are consistent with those of surrounding development.

Lands are provided for community uses in the west of the site, adjacent to existing community uses to the southwest of the SDZ.

More than adequate buffers are provided outside of existing industrial/public utility sites and along shoreline amenity areas and transport infrastructure.

Development Plan Standards with respect to Open Space are met and exceeded with a network of multiple linear parks linking together various new pocket parks, open space to the south of the site, a village green and square in the centre of the site and the shore to the east of the site. The amount of Open Space provided for by this alternative is significantly higher than by the other alternatives.

Infiltration of a rapid bus loop into the site is provided for. The various linear parks are utilised to provide linkages for walking and cycling while there is sufficient space for public transport services, such as cycling.

4.2.4 Alternative Scenario 3B: *A Low Quantum of Development (100% residential uses)*

This alternative is as Alternative 3A but with all built development being residential.

4.3 Evaluation of Alternatives

4.3.1 Significant Positive Effects Common to all Alternatives

The Poolbeg Peninsula is located near to the established neighbourhoods to the east and south of Ringsend, Sandymount and Irishtown while O'Connell Bridge lies within two kilometres.

The peninsula lies within Dublin Bay – at the estuary of the Dodder and Liffey. The Bay is a nationally significant amenity and an internationally significant wild bird site.

With substantial areas of already developed but vacant land, it has significant potential to contribute towards meeting Dublin's growing development needs.

In addition to being served by walking and cycling infrastructure and bus routes, it is expected that the site will be served in the longer term by the Luas via a stop located on the Séan Moore Road.

The SDZ lands themselves contain relatively low levels of environmental sensitivities and designations, however there are a number of issues arising from adjacent environmental sensitivities and challenges posed by existing uses at the lands that would need to be considered by any new development.

By providing for growth and development in this area, each of the alternative scenarios would be likely to contribute towards a reduced need to develop more sensitive, undeveloped areas elsewhere in the Dublin region that are further from the City and less well serviced. This would be likely to result in significant positive environmental effects on the following environmental components:

- Biodiversity and flora and fauna
- Population and human health
- Soil (especially soil on greenfield lands)

- Water (status of rivers and groundwater)
- Flood risk
- Sustainable mobility and associated effects (energy usage and emissions to air including noise and greenhouse gases)
- Material Assets (provision of adequate and appropriate wastewater and drinking water services and waste management)
- Cultural Heritage (architectural and archaeological heritage)
- Amenities

Although significant positive environmental effects would occur under each of the alternatives, the extent to which they would occur varies across each of the alternatives and this is addressed under the evaluation of each of the alternatives below.

4.3.2 Potentially Significant Adverse Effects Common to all Alternatives

All of the alternatives provide for the development of the site to some extent. Such development would have the potential to conflict with environmental components – to different degrees. Potentially significant adverse environmental effects arising from this conflict are common to all alternatives and are described on Table 4.1. For the Planning Scheme, these effects will be mitigated by measures that have been integrated into the Planning Scheme.

Although potentially significant adverse environmental effects would occur under each of the alternatives, the extent to which they would occur varies across each of the alternatives and this is addressed under the evaluation of each of the alternatives below.

Table 4.1 Potentially Significant Adverse Environmental Effects common to all alternatives

Environmental Component	(Potential) Likely Significant Effect, if unmitigated
Biodiversity and Flora and Fauna	o Arising from both construction and operation of development and associated infrastructure: loss of/damage to biodiversity in designated sites (including European Sites and Wildlife Sites) and Annexed habitats and species, listed species, ecological connectivity and non-designated habitats; and disturbance to biodiversity and flora and fauna. o Habitat loss, fragmentation and deterioration, including patch size and edge effects. o Disturbance and displacement of protected species.
Population and Human Health	o Interactions if effects arising from industrial hazards of unsuitable/incompatible land-uses (such as heavy vehicle traffic, emissions or contaminated soils) are not mitigated. o Interactions if effects upon environmental vectors such as water and air are not mitigated.
Soils	o Loss of soil function. o Issues arising on other environmental components if potentially contaminated soils were not managed appropriately – both during construction and longer term.
Water	o Adverse impacts upon the status of water bodies[27] arising from changes in quality, flow and/or morphology. o Interactions with flood risk.
Material Assets (it is the function of Irish Water to provide for water services needs)	o Failure to provide adequate and appropriate wastewater treatment (water services infrastructure and capacity ensures the mitigation of potential conflicts). o Failure to comply with drinking water regulations and serve new development with adequate drinking water that is both wholesome and clean (water services infrastructure and capacity ensures the mitigation of potential conflicts). o Increases in waste levels.
Air and Climatic Factors	o Emissions to air including greenhouse gas emissions and other emissions.
Cultural Heritage	o Effects on protected and unknown archaeology and protected architecture arising from construction and operation activities.
Landscape/Amenities	o Occurrence of adverse impacts upon and conflicts with the usage of and access to amenities including parklands, playing fields and shore-side walks.

[27] Including the Dublin Urban Groundwater body and the River Liffey Estuary Lower Estuary and the Dublin Bay Coastal Water Body within the Liffey and Dublin Bay Catchment in the Eastern River Basin District.

4.3.3 Alternative Scenario 1: *A High Quantum of Development*

By maximising the quantum of built development across the site, this alternative scenario would be likely to contribute towards a significant reduction in the need to develop more sensitive, undeveloped areas elsewhere in the Dublin region that are further from the City and less well serviced (this would result in significant positive environmental effects that are detailed under Section 4.3.1).

By only providing minimal buffers outside of existing industrial/public utility sites and along shoreline amenity areas and transport infrastructure this alternative would be likely to lead to the greater conflicts with human health and amenities, many of which would be unlikely to be fully mitigated:

- Potential exposure of dwellings/ schools/ hospitals/ nursing homes to industrial hazards of unsuitable/ incompatible land-uses (such as heavy vehicle traffic, emissions or contaminated soils);
- Loss of and conflicts with the usage of and access to amenities including parklands, playing fields and shore-side walks, especially in the east and south of the site; and
- Conflicts with ecological resources (habitats) along the southern boundary due to proximity, height and lack of buffering.

The size and height of buildings throughout the site there would further contribute towards loss of amenity, especially in surrounding coastal areas.

The alternative would conflict with sustainable mobility and associated interactions (energy usage and emissions to air including noise and greenhouse gases), with many of the effects unlikely to be fully mitigated. This is because: there would be limited space for non-essential linkages through the site or for public transport services, such as cycling; and no community uses would be provided for.

Other potential conflicts (see Section 4.3.2) to be mitigated occur as a result of development of the site which is provided for by this alternative.

4.3.4 Alternative Scenario 2: *A Medium Quantum of Development*

By providing for a medium quantum of mixed use built development across the site, at medium densities, this alternative scenario would be likely to contribute towards a significant reduction in the need to develop more sensitive, undeveloped areas elsewhere in the Dublin region that are further from the City and less well serviced (this would result in significant positive environmental effects that are detailed under Section 4.3.1).

A network of multiple linear parks would contribute towards efforts to encourage walking and cycling and the infiltration of a rapid bus loop into the site is provided for. Efforts to improve sustainable mobility and associated interactions (energy usage and emissions to air including noise and greenhouse gases) would be further contributed towards by the provision of community uses in the west of the site.

Buffers provided, including those outside of existing industrial/public utility sites and along shoreline amenity areas and transport infrastructure, would mitigate:

- Potential exposure of dwellings/ schools/ hospitals/ nursing homes to industrial hazards of unsuitable/ incompatible land-uses (such as heavy vehicle traffic, emissions or contaminated soils);
- Loss of and conflicts with the usage of and access to amenities including parklands, playing fields and shore-side walks, especially in the east and south of the site; and
- Conflicts with ecological resources (habitats) along the southern boundary.

The heights of buildings would contribute towards the protection of amenity, especially in surrounding coastal areas.

Other potential conflicts (see Section 4.3.2) to be mitigated occur as a result of development of the site which is provided for by this alternative.

4.3.5 Alternative Scenario 3A: *A Low Quantum of Development (mixed uses)*

This alternative would contribute towards a failure to realise the potential of the site for reducing the need to develop more sensitive, undeveloped areas elsewhere in the Dublin region that are further from the City and less well serviced. This is because of the low quantum of built development provided across the site at lower densities.

More greenfield development would be required in more sensitive, undeveloped areas elsewhere in the Dublin region. Such greenfield development has a greater potential to result in higher levels of direct effects as a result of developing semi-natural lands – such effects include loss of ecology (including non-designated ecology and ecological corridors and stepping stones), visual impacts, the sealing of greenfield soils and threats to the status of waters (which has the potential to interact with aquatic ecology and human health). Greenfield development is less likely to facilitate sustainable mobility and greenfield areas further from the City and less well serviced. Greenfield development is also less likely to facilitate the enhancement of cultural (archaeological and architectural) heritage and its context in urban areas.

A network of multiple linear parks would contribute towards efforts to encourage walking and cycling and infiltration of a rapid bus loop into the site is provided for. However, this alternative would conflict with sustainable mobility and associated interactions (energy usage and emissions to air including noise and greenhouse gases), with many of the effects unlikely to be fully mitigated, as the quantum of development provided for would not realise the full potential of this Dublin City site.

More than adequate buffers provided, including those outside of existing industrial/public utility sites and along shoreline amenity areas and transport infrastructure, would mitigate:

- Potential exposure of dwellings/ schools/ hospitals/ nursing homes to industrial hazards of unsuitable/ incompatible land-uses (such as heavy vehicle traffic, emissions or contaminated soils);
- Loss of and conflicts with the usage of and access to amenities including parklands, playing fields and shore-side walks, especially in the east and south of the site; and
- Conflicts with ecological resources (habitats) along the southern boundary.

The heights of buildings would contribute towards the protection of amenity, especially in surrounding coastal areas.

Other potential conflicts (see Section 4.3.2) to be mitigated occur as a result of development of the site which is provided for by this alternative.

4.3.6 Alternative Scenario 3B: *A Low Quantum of Development (100% residential uses)*

The evaluation for this alternative scenario would be as is for Alternative 3A except in relation to sustainable mobility. As Alternative 3B provides 100% residential uses, less journeys by sustainable modes of transports would be likely. Therefore this scenario would provide for less improvements in sustainable mobility.

4.3.7 Summary Evaluation against Strategic Environmental Objective

Table 4.2 provides a comparative evaluation of the environmental effects of alternative development strategies against Strategic Environmental Objectives (see Section 3.13). This is supported by the subsections above.

	Likely to **Improve** status of SEOs	Likely to **Potentially Conflict** with status of SEOs - likely to be mitigated	**Probable Conflict** with status of SEOs - unlikely to be fully mitigated
Alternative Scenario 1 A High Quantum of Development	✓	✓	✓
Alternative Scenario 2 A Medium Quantum of Development	✓	✓	
Alternative Scenario 3A A Low Quantum of Development (mixed uses)	✓	✓	✓
Alternative Scenario 3B: A Low Quantum of Development (100% residential uses)	✓	✓	✓

Table 4.2 Comparative Evaluation of Alternative Development Strategies

4.4 Selection of an Alternative for the Planning Scheme

The Alternative Scenario for the development of Poolbeg West that has emerged from the planning process is Scenario 2 – this Scenario contributes towards the protection and management of the environment and conforms with high level planning objectives.

Alternative Scenario 2 was developed by the Planning Team, adopted by the Council and approved by An Bord Pleanála having regard to both:

1. The environmental effects which were identified by the SEA and are detailed above; and
2. Planning including social and economic effects relating to the site's potential.

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.

Section 5 Overall Findings from Evaluation of Planning Scheme Provisions

Table 5.1 details the overall findings of the SEA of Planning Scheme Provisions. This table details: significant positive effects, likely to occur; potential effects, if unmitigated; residual adverse effects (considering the extent of detail provided by the Planning Scheme and assuming that all mitigation measures are complied with by development).

Environmental impacts which occur, if any, will be determined by the nature and extent of multiple or individual projects and site-specific environmental factors. Avoidance of conflict with Strategic Environmental Objectives (see Section 3.13) and the environment is dependent upon compliance with the mitigation measures which have emerged through the various environmental assessment processes and which have been integrated into the Planning Scheme.

Section 5 summarises the measures that will mitigate the potential effects that are detailed in this section.

In summary:

- By providing re-development of a brownfield site within the City, the Scheme will contribute towards sustainable mobility, minimising increases in energy usage and emissions to air, including greenhouse gas emissions and other emissions. It will also avoid the need to develop more sensitive greenfield lands elsewhere in the City and beyond thereby avoiding potential adverse effects on various environmental components.

- The Scheme will contribute towards the protection of amenity and ecological resources along the coastal edge of the SDZ.

- Taking into account the mitigation measures that are being integrated into the Planning Scheme, the Scheme will not affect the integrity of the Natura 2000 network of designated sites[28].

- Development will not be located within areas of elevated flood risk and the Scheme will contribute towards flood risk management.

- Appropriate provisions have been integrated into the Planning Scheme in order to manage remediation of contaminated lands at project level.

[28] Except as provided for in Section 6(4) of the Habitats Directive, viz. There must be:
(a) no alternative solution available;
(b) imperative reasons of overriding public interest for the plan/programme/project to proceed; and
(c) adequate compensatory measures in place.

Table 5.1 Overall Findings – Effects arising from the Preferred Alternative Scenario for the Planning Scheme

Environmental Component	Significant Positive Effect, likely to occur	Potential Significant Adverse Effect, if unmitigated	Residual Non-Significant Adverse Effects
Biodiversity and Flora and Fauna	• Facilitates lower overall effects on ecology (including designated sites, ecological connectivity, habitats) – due to utilisation of already developed but vacant lands and use of existing utilities. • Buffers provided, including those outside of existing industrial/public utility sites and along shoreline amenity areas, would mitigate conflicts with ecological resources (habitats) along the southern boundary. • Facilitates protection of ecology with respect to the provision of water services. • Facilitates contribution towards the protection of ecology as a result of contributing towards the protection of environmental vectors, including water.	• Arising from both construction and operation of development and associated infrastructure: loss of/damage to biodiversity in designated sites (including European Sites and Wildlife Sites) and Annexed habitats and species, listed species, ecological connectivity and non-designated habitats; and disturbance to biodiversity and flora and fauna. • Habitat loss, fragmentation and deterioration, including patch size and edge effects. • Disturbance and displacement of protected species.	• Loss of an extent of non-protected habitats and species arising from the replacement of semi-natural land covers with artificial surfaces.
Population and Human Health	• Buffers provided, including those outside of existing industrial/public utility sites and along shoreline amenity areas and transport infrastructure, would mitigate: o Potential exposure of dwellings/ schools/ hospitals/ nursing homes to industrial hazards of unsuitable/ incompatible land-uses (such as heavy vehicle traffic, emissions or contaminated soils); and o Loss of and conflicts with the usage of and access to amenities including parklands, playing fields and shore-side walks, especially in the east and south of the site. • The heights of buildings would contribute towards the protection of amenity, especially in surrounding coastal areas. • Facilitates protection of human health with respect to the provision of water services and the provision of transport infrastructure integrated with land use planning – and associated interactions with sustainable mobility, emissions and energy usage. • Facilitates contribution towards the protection of human health as a result of contributing towards the protection of environmental vectors, including water.	• Interactions if effects arising from industrial hazards of unsuitable/incompatible land-uses (such as heavy vehicle traffic, emissions or contaminated soils) are not mitigated. • Interactions if effects upon environmental vectors such as water and air are not mitigated.	• Potential interactions with residual effects on environmental vectors. This has been mitigated by provisions which have been integrated into the Planning Scheme, including those relating to sustainable mobility and infrastructural provision.

Environmental Component	Significant Positive Effect, likely to occur	Potential Significant Adverse Effect, if unmitigated	Residual Non-Significant Adverse Effects
Soil	• Facilitates lower overall effects on soil – due to utilisation of already developed but vacant lands and use of existing utilities. • Facilitates management of potentially contaminated soils.	• Loss of soil function. • Issues arising on other environmental components if potentially contaminated soils were not managed appropriately – both during construction and longer term.	• Losses of soil function on made ground.
Water	• Facilitates lower effects on ground and surface waters due to utilisation of already developed but vacant lands and use of existing utilities.	• Adverse impacts upon the status of water bodies[29] arising from changes in quality, flow and/or morphology. • Interactions with flood risk.	• Any increase in loadings as a result of development (these would be in compliance with River Basin Management Plans). • Development to both: avoid areas of elevated flood risk; and not increase areas of elevated flood risk.
Material Assets (it is the function of Irish Water to provide for water services needs)	• Provides for planned infrastructure including water services infrastructure and transport infrastructure. • Make use of existing water services.	• Failure to provide adequate and appropriate wastewater treatment (water services infrastructure and capacity is needed to ensure the mitigation of potential conflicts). • Failure to comply with drinking water regulations and serve new development with adequate drinking water that is both wholesome and clean (water services infrastructure and capacity is needed to ensure the mitigation of potential conflicts). • Increases in waste levels.	• Residual wastes (these would be disposed of in line with higher level waste management policies).
Air and Climatic Factors/ Sustainable mobility and associated effects (energy usage and emissions to air including noise and greenhouse gases)	• Facilitates contribution towards a shift from car to more sustainable and non-motorised transport modes. • Facilitates contribution towards reducing increases in travel related greenhouse gas and other emissions to air that would occur as a result developing sites that are further from the City and less well serviced. • A network of multiple linear parks would contribute towards efforts to encourage walking and cycling and the infiltration of a rapid bus loop into the site is provided for. Efforts to improve sustainable mobility and associated interactions (energy usage and emissions to air including noise and greenhouse gases) would be further contributed towards by the provision of community uses in the west of the site.	• Emissions to air including greenhouse gas emissions and other emissions.	• An extent of travel related greenhouse gas and other emissions to air. This has been mitigated by provisions which have been integrated into the Plan, including those relating to sustainable mobility.

[29] Including the Dublin Urban Groundwater body and the River Liffey Estuary Lower Estuary and the Dublin Bay Coastal Water Body within the Liffey and Dublin Bay Catchment in the Eastern River Basin District.

Environmental Component	Significant Positive Effect, likely to occur	Potential Significant Adverse Effect, if unmitigated	Residual Non-Significant Adverse Effects
Cultural Heritage	• Contribution towards the protection of cultural heritage by facilitating compliance with protection legislation.	• Effects on protected and unknown archaeology and protected architecture arising from construction and operation activities.	• Potential alteration to the context and setting of architectural heritage (this would occur in compliance with legislation). • Potential alteration to the context and setting of archaeological heritage (this would occur in compliance with legislation). • Potential loss of unknown archaeology however this loss will be mitigated by measures integrated into the Planning Scheme.
Landscape /Amenities	• Buffers provided, including those outside of existing industrial/public utility sites and along shoreline amenity areas, would mitigate loss of and conflicts with the usage of and access to amenities including parklands, playing fields and shore-side walks, especially in the east and south of the site. • The heights of buildings would contribute towards the protection of amenity, especially in surrounding coastal areas.	• Occurrence of adverse impacts upon and conflicts with the usage of and access to amenities including parklands, playing fields and shore-side walks.	• The Planning Scheme contributes towards the protection of amenities. These semi natural amenities will change overtime as a result of natural changes in vegetation cover combined with new developments.

Section 6 Mitigation and Monitoring Measures

6.1 Mitigation

Mitigation measures are measures envisaged to prevent, reduce and, as fully as possible, offset any significant adverse impacts on the environment of implementing the Planning Scheme. Various environmental sensitivities and issues have been communicated to the Council through the SEA, Appropriate Assessment (AA), Strategic Flood Risk Assessment (SFRA) and Contamination and Remediation Assessment (CRA) processes. By integrating all related recommendations into the Planning Scheme, the Council have ensured that both the beneficial environmental effects of implementing the Planning Scheme have been and will be maximised and that potential adverse effects have been and will be avoided, reduced or offset.

Mitigation was achieved through the:

- Consideration of alternatives

  Communication of the findings of this evaluation helped the Planning team and Elected Members make an informed choice as to the alternative scenario that has been selected for the Planning Scheme. See Section 4 for further detail.

- Early and strategic work undertaken by the Council to ensure contribution towards environmental protection and sustainable development

  Far in advance of both the submission of the placing of the Draft Planning Scheme (and associated SEA, AA, SFRA and CRA documents) on public display, Dublin City Council undertook various works in order to inform the preparation of the Draft Planning Scheme. This included beginning the SEA, AA, SFRA and CRA processes as early in the process as possible so that these assessments could inform every aspect of the Planning Scheme. It also included the undertaking of background work in relation to various issues covered by the Planning Scheme including community, public transport, open space, drainage, land uses, block locations, phasing areas and height.

  The findings of this strategic work have been integrated into the Planning Scheme and will be implemented, contributing towards both environmental protection and management and sustainable development within the County.

  Many of the features of this work can be identified from the Planning Scheme's Concept Plan detailed at Figure 6.1 overleaf.

- Integration of individual SEA, AA, SFRA and CRA provisions into the text of the Planning Scheme.

6.2 Monitoring

The SEA Directive requires that the significant environmental effects of the implementation of plans and programmes are monitored. The monitoring programme is detailed in the SEA Environmental Report will be undertaken alongside the implementation of the Planning Scheme.

A Monitoring Report on the significant environmental effects of implementing the Planning Scheme will be prepared on an annual basis following the approval of the Planning Scheme. This report will address the indicators set out on Table 6.1. The Planning Department at Dublin City Council is responsible for the ongoing review of indicators and targets, collating existing relevant monitored data, the preparation of monitoring evaluation report(s), the publication of these reports and, if necessary, the carrying out of corrective action.

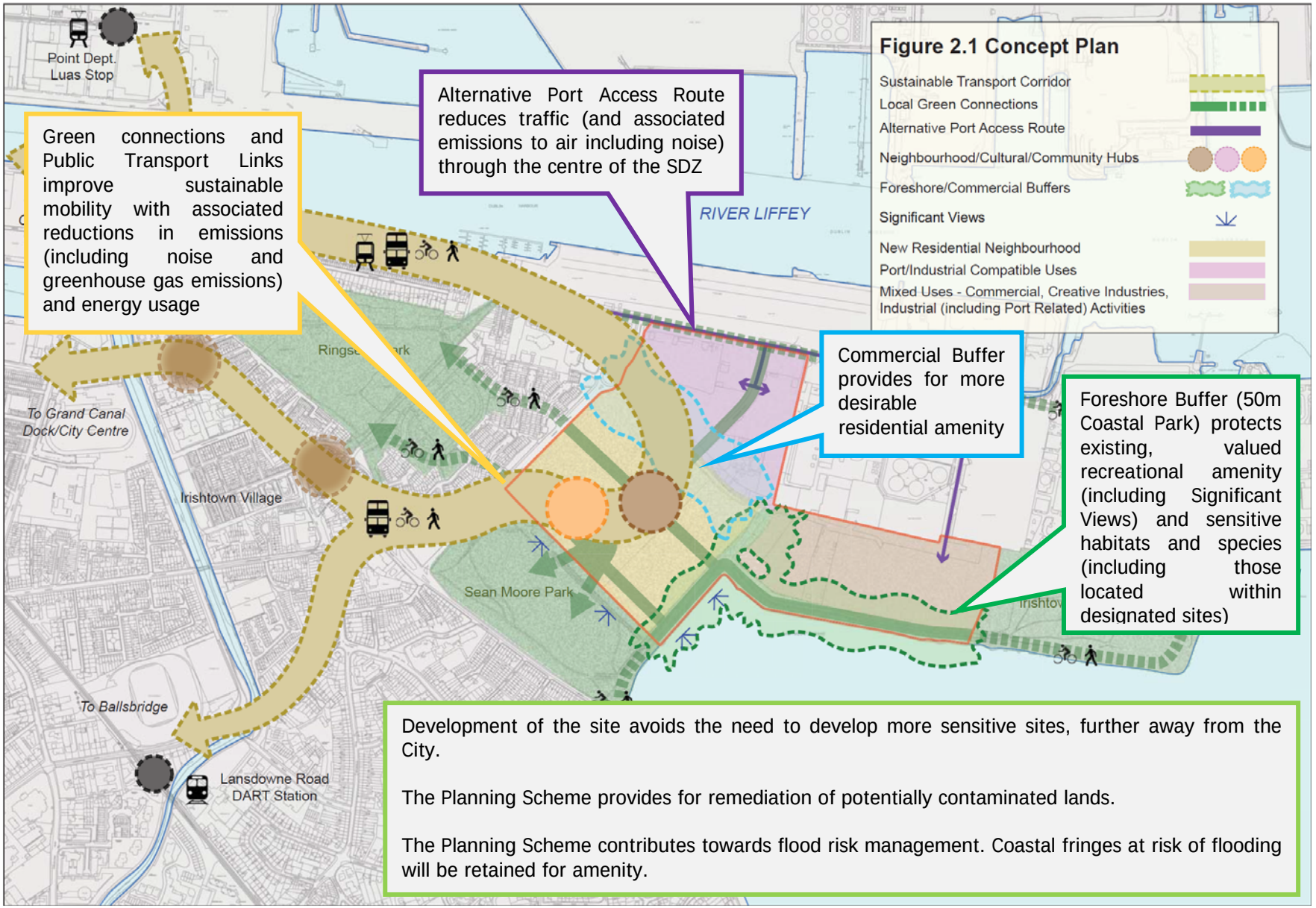

Figure 6.1 Mitigation by Avoidance: How Environmental Considerations Have Been Integrated Into the Planning Scheme

Table 6.1 Indicators from the SEA Monitoring Programme

Environmental Component	Indicator(s)
Biodiversity, Flora and Fauna	B1: Conservation status of habitats and species as assessed under Article 17 of the Habitats Directive
	B2: Percentage loss of functional connectivity without remediation resulting from development provided for by the Planning Scheme
	B3i: Number of significant impacts on relevant habitats, species, environmental features or other sustaining resources in designated sites including Wildlife Sites resulting from development provided for by the Planning Scheme B3ii: Number of significant impacts on the protection of listed species
Population and Human Health	PHH1: Occurrence (any) of a spatially concentrated deterioration in human health arising from environmental factors resulting from development provided for by the Planning Scheme, as identified by the Health Service Executive and Environmental Protection Agency
	PHH2 (and L1): Disruption to use of and access to amenities including parklands, playing fields and shore-side walks
Soil	S1: Area of brownfield land available for re-use
Water	W1: Classification of Overall Status (comprised of ecological and chemical status) under the European Communities Environmental Objectives (Surface Waters) Regulations 2009 (SI No. 272 of 2009)
	W2: Groundwater Quality Standards and Threshold Values under Directive 2006/118/EC
	W3: Number of incompatible developments granted permission on lands which pose - or are likely to pose in the future - a significant flood risk
Air and Climatic Factors	C1: Percentage of resident and employment populations travelling to work, school or college by public transport or non-mechanical means
Material Assets	M1: Number of new developments granted permission which can be adequately and appropriately served with wastewater treatment over the lifetime of the Planning Scheme
	M2: Number of non-compliances with the 48 parameters identified in the European Communities (Drinking Water) Regulations (No. 2) 2007 which present a potential danger to human health as a result of implementing the Planning Scheme
	M3: Total collected and brought household waste
Cultural Heritage	CH1(i): Percentage of entries to the Record of Monuments and Places - including Areas of Archaeological Potential and Significance (and the context of the above within the surrounding landscape where relevant) - protected from significant adverse effects arising from new development granted permission under the Planning Scheme CH1(ii): Number of proposed developments that may significantly impact the ancient river or seabed levels that are subject to an archaeological impact assessment in advance of works taking place.
	CH2: Percentage of entries to the Record of Protected Structures and Architectural Conservation Areas and their context protected from significant adverse effects arising from new development granted permission under the Planning Scheme
Landscape	PHH2 (and L1): Disruption to use of and access to amenities including parklands, playing fields and shore-side walks