SEA Statement for the Dublin City Development Plan 2016-2022

Strategic Environmental Assessment

October 2016

Comhairle Cathrach Bhaile Átha Cliath
Dublin City Council

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Section 1 Introduction: Strategic Environmental Assessment Statement

1.1 Introduction

This is the SEA Statement for the Dublin City Development Plan 2016-2022 Strategic Environmental Assessment (SEA). The Plan was adopted by the Elected Members of Dublin City Council on the 23rd of September 2016. The Development Plan came into effect on the 21st of October 2016.

1.2 SEA Definition

Strategic Environmental Assessment (SEA) is the process by which environmental considerations are required to be fully integrated into the preparation of Plans and Programmes and prior to their final adoption. The objectives of the SEA process are to provide for a high level of protection of the environment and to promote sustainable development by contributing to the integration of environmental considerations into the preparation and adoption of the Plan.

1.3 Legislative Context

The European Directive (2001/42/EC) on the Assessment of the Effects of Certain Plans and Programmes on the Environment (the SEA Directive) was transposed into national legislation by the European Communities (Environmental Assessment of Certain Plans and Programmes) Regulations 2004 (S.I. 435/2004) and the Planning and Development (Strategic Environmental Assessment) Regulations 2004 (S.I. 436/2004). The Regulations have been amended by the European Communities (Environmental Assessment of Certain Plan and Programmed) (Amendment) Regulations 2011 (SI NO. 200 of 2011) and the Planning and Development (SEA) (Amendment) Regulations 2011 (SI No.201 of 2011).

Article 7 of the Planning and Development (Strategic Environmental Assessment) Regulations 2004 (SI No.436 of 2004) as amended requires that Strategic Environmental Assessment is undertaken for the preparation of certain Development Plans.

The legislation requires that the Plan-making authority must make available a statement summarising how the SEA and consultations have been taken into account in the Plan. This statement is referred to as the SEA Statement.

1.4 Summary of the SEA Process

Figure 1.1.Main Stages in the SEA Process for the Dublin City Development Plan 2016-2022

Step 1: **Screening** to determine if SEA is required. SEA is mandatory for Development Plans under S.I 436 of 2004.

Step 2: **Scoping & Statutory Consultation:** The objective of scoping is to identify key issues of concern that should be addressed in the environmental assessment of the draft Development Plan so that they can be considered in appropriate detail. Scoping also helps determine the boundaries of the assessment in terms of geographical extent and the time horizon for the assessment. To inform this process, in 2014 Dublin City Council compiled an issues paper to highlight the strategic priority issues for the city over the next six years. A period of public consultation ran from 10th November 2014 – 14th January 2015, where citizens, communities and organisations were invited to read through these issues and made observations. These were collated and reviewed by the Development Plan team. A Scoping Report was then prepared and published on 30th March 2015. Consultation was carried out with the statutory consultees (Environmental Protection Agency; Department of Communications, Energy and Natural Resources; Department of the Environment, Community and Local Government*; Department of Arts, Heritage and the Gaeltacht*; and the Department of Agriculture, Food and the Marine, and Managers of the adjoining planning authorities). Taking into consideration feedback from consultees, an assessment of the potential for the draft Development Plan to influence the environment was carried out.

**Note: It should be noted that some of the Government Departments have since changed name. The Department of the Environment, Community and Local Government is now known as the 'The Department of Housing , Planning, Community and Local Government', The Department of Arts, Heritage and Gaeltacht Affairs is now known as 'The Department of Arts, Heritage, Regional, Rural and Gaeltacht Affairs', The Department of Agriculture, Fisheries and Food is now known as 'The Department of Agriculture, Food and the Marine, and finally the Department of Communications, Energy and Natural Resources is now known as the 'The Department of Communications, Climate Action & Environment'*

Step 3: Preparation of a Draft Environmental Report (alongside the draft Development Plan). The likely significant effects of implementing the Development Plan were identified, described and evaluated in the draft Environmental Report. The preparation of the Environmental Report on the likely significant effects on the environment of implementation of the Dublin City Development Plan included consideration of:

- Baseline data relating to the current state of the environment;
- Links between the draft Dublin City Development Plan and other relevant strategies, policies, plans, programmes and environmental protection objectives;
- Key environmental sensitivities
- The likely significant effects of the draft plan on the environment (both positive and negative);
- Measures envisaged for the prevention, reduction and mitigation of any significant adverse effects;
- An outline of the reasons for selecting the alternatives chosen; and
- Monitoring measures to ensure that any unforeseen environmental effects will be identified, allowing appropriate remedial action to be taken.

Step 4: Statutory Consultation on Draft Development Plan & Environmental Reports:

The Consultation period for making of the Dublin City Development Plan commenced with the launch of an issues paper which was put on public display from 10th November 2014 to 14th January 2015. A series of information sessions and consultation workshops were held throughout the city to inform the draft plan. A total of 303 written submissions together with the opinions and comments arising from the public consultation sessions, consultation with communities, infrastructure providers, sectoral groups, statutory agencies and adjoining local authorities were taken into account. The Members of Dublin City Council having considered the views expressed by the public proposed 394 pre-draft motions which were considered at the Special Council meeting on the 5th May 2015 at which the Members gave direction to the Chief Executive (CE) regarding the strategic and policy issues to include in the draft plan. The CE prepared the pre-draft plan which was circulated out to the Members for their consideration only, on foot of which 561 motions were submitted. At the Special Council meeting held on the 16th, 17th and 18th September 2015 the Members agreed the CE Report and CE Report on Motions and agreed to put the draft plan on public display.

The draft plan was placed on public display from the 1st October 2015 to the 11th December 2015 alongside the Strategic Environmental Assessment, the Appropriate Assessment and also the Strategic Flood Risk Assessment. A total of 1484 submissions/observations were received in response to this stage of the public consultation process. The Chief Executives report was prepared which summarised the submissions received and provided a response and recommendation to the issues raised (CE Report March 2016).

The Members, having considered the views by the public proposed 392 motions giving direction to the CE regarding strategic and policy issues to amend in the Draft Dublin City Development Plan. Again a CE report was prepared which provided a response and recommendation to each motion (CE Report May 2016).

The Members of Dublin City Council considered the draft plan and the CE Reports on Submissions and Motions, on the 30th, 31st of May and June 1st, and resolved to amend the draft plan. As some of these amendments constituted material alterations to the draft plan, the Council resolved to place the proposed amendments on further period of public consultation for 4 weeks, from the 21st of June 2016 until the 19th July 2016. The proposed amendments were accompanied by an Addendum Report to the Strategic Environmental Assessment. A further supplemental report was published on the 6th of July to the 4th of August 2016, setting out a small number of additional amendments.

A total of 298 submissions/observations were received. The Chief Executives report was prepared which summarised the submissions received and provided a response and recommendation to the issues raised (August 2016). The Members having considered the views by the public proposed 98 motions giving direction regarding the proposed amendments. Again a CE report was prepared which provided a response and recommendation to each motion (September 2016).

At the special Council meeting on the 23rd of September 2016, the Members of Dublin City pursuant to Section 12(9) and 12(10) of the Planning and Development Act 2000, as

amended, by resolution, decided to make the Development Plan. The Plan came into effect on the 21st October 2016.

Step 5: Preparation of an SEA Statement summarising how environmental considerations have been integrated into the Development Plan, how the results of opinions expressed, submissions received and consultations carried out have been taken into account in the SEA process and the reasons for choosing the Development Plan as adopted.

1.5 Implication of SEA for the Plan

Strategic Environmental Assessment (SEA) was undertaken on the draft plan in order to comply with the SEA Directive and transposing Regulations. The SEA Environmental Report contains the findings of this assessment (see Volume 5).

In addition to the SEA, Appropriate Assessment (AA) was also undertaken on the draft plan, in order to comply with EU Habitats Directive (92/43/EEC) and transposing Regulations (see Volume 6). The AA Natura Impact Report contains the findings of this assessment (see volume 6).

As part of the draft plan, a Strategic Flood Risk Assessment (SFRA) was also undertaken in order to comply with the Flood Risk Management Guidelines (see volume 7).

The Environmental Report was updated in order to take into account the recommendations contained in the submissions and changes to the draft plan which were made on foot of submissions.

Members of the planning authority have taken into account the findings of all the relevant SEA outputs during their consideration of the draft plan and before its adoption.

1.6 SEA Statement

The SEA Statement is described in Article 9 of the SEA Directive as a statutory requirement and should be made available with the adopted plan. This will be issued to the environmental authorities, previously consulted, with a view to outlining the key stages of the SEA process and illustrating how environmental considerations have been integrated into the plan and key decisions taken in the plan as a consequence of the SEA.

The SEA Statement is required to include the following information:

a) How environmental considerations have been integrated into the Plan;

b) How the Environmental Report, submissions and observations made to the planning authority on the draft plan and Environmental Report, and any transboundary consultations (where relevant) have been taken into account during the preparation of the Plan;

c) The reasons for choosing the Plan, as adopted, in the light of the other reasonable alternatives dealt with; and

d) The measures decided upon to monitor the significant environmental effects of implementation of the Plan.

Section 2 – How Environmental Considerations were integrated into the Plan

2.1 Introduction

This section of the report sets out how environmental considerations and the findings of the Strategic Environmental Assessment (SEA) as presented in the Environmental Report were taken into account during the preparation of the Dublin City Development Plan 2016-2022.

The SEA, the Appropriate Assessment (AA) and the Strategic Flood Risk Assessment (SFRA) processes have been undertaken in parallel to the preparation of the draft plan. From the outset, considerations of the environmental consequences of the alternatives have been taken into account. The iterative process ensured that the SEA/AA & SFRA and the preparation of the Development Plan were integrated in order to meet the environmental objectives and the objectives of the plan.

The protection and conservation of the environment has been the key consideration throughout the preparation of the Plan. Environmental considerations were integrated into the plan in a number of ways including:

- Consultation
- Communication of environmental sensitivities through the SEA and associated Appropriate Assessment (AA) and Strategic Flood Risk Assessment(SFRA)
- Preparation of the Environmental Report including baseline data collections and evaluation of potential impacts.
- Consideration of Alternatives
- Mitigation Measures

2.2 Consultation

In line with recommended best practice, the SEA process benefited from multi-disciplinary inputs across Dublin City Council's departments including Waste Management, Roads and Traffic Division for their input into movement section. The City Archaeologist, Conservation, Heritage, Community and Arts Department for their input into built heritage, culture, community development & tourism sections. Parks and landscape Division have been involved from the start in the Green Infrastructure and open space sections. Housing Department and Economic Development Unit have also been consulted in relation to economic regeneration and housing sections of the Development Plan. Finally Drainage and Wastewater sections & the Flood Resilient City Office have been involved throughout the process and have provided a strategic overview of Flooding in the City.

The Development Plan has also had mentoring from external consultants, in particular in relation to the AA and SEA from RPS Planning Consultants. The Strategic Flood Risk Assessment benefitted from external mentoring from JBA Consulting.

Consultation with Environmental Authorities

In terms of the Strategic Environmental Assessment there was three periods of public consultation over the course of the preparation of the Dublin City Development Plan. The first public consultation for the pre-draft was held in 2014, and included the statutory scoping phase. Scoping was carried out to identify key issues of concern that should be addressed in the environmental assessment of the draft Development Plan so that they could be considered in appropriate detail. Scoping also helped determine the boundaries of the assessment in terms of geographical extent and the time horizon for the assessment.

To inform this process, in 2014 Dublin City Council put together Issues Papers to highlight the strategic priority issues for the city over the next six years. A period of public consultation ran from 10th November 2014 – 14th January 2015, where citizens, communities and organisations were invited to read through these issues and make observations. These were collated and reviewed by the Development Plan team.

A Scoping Report was then prepared and published on 30th March 2015. Consultation was carried out with the statutory consultees (Environmental Protection Agency; Department of Communications, Energy and Natural Resources; Department of the Environment, Community and Local Government; Department of Arts, Heritage and the Gaeltacht; and the Department of Agriculture, Food and the Marine, and Managers of the adjoining planning authorities).

The second stage of public consultation included the public display of the draft Dublin City Development Plan 2016 – 2016 alongside the SEA Environmental Report and Associated Appropriate Assessment and Strategic Flood Risk Assessment. This took place from 1st October 2015 – 11th December 2015, and submissions were invited. In total, 1,484 submissions/observations were received. Each submission was fully assessed and fully considered and has been summarised in the Chief Executives Report (March 2016).

Following consideration of the draft plan, the Chief Executive's Report on Submissions (dated March 2016) and the Chief Executives Report on Motions (dated May 2016) , it was resolved by the Members at a number of special Council meetings (30th& 31st of May and 1st June 2016) to amend the Draft Development Plan. As a number of these amendments constituted material alterations to the Draft Development Plan, the Members resolved to place the material amendments back on public display. The amendments went back on public display from the 21st June – 19th July, and submissions/observations were invited.

At each stage of the public consultation an addendum to the Strategic Environmental Assessment report was also available for public consultation during this time.

A total of 298 submissions/observations on the Material Amendments were received. The issues raised in the submissions/observations were summarised in the Chief Executives report (dated August 2016). Following consideration of this report the Members submitted 98 motions. The CE report dated September 2016 sets out the Chief Executives Response and recommendation to each of the motions submitted.

At all stages of consultation , the content of the submissions received have been considered by the Plan , SEA and AA teams and Members, and amendments have been made to the draft plan in response to these, where considered appropriate.

At the Special Council Meeting on the 23rd of September the Members of Dublin City Council agreed by resolution to adopt the Development Plan.

2.3 Communication of Environmental Sensitivities

Environmental considerations were integrated into the draft plan before it was placed on public display for the first time. Environmental sensitivities were mapped in order to identify which areas of the City would be most sensitive to development and would suffer the most adverse effects if growth was to be accommodated in those areas unmitigated.

The sensitivities were communicated to the plan-making team on a regular basis from the outset of the plan preparation process. Identifying areas with the most limited carrying capacity within the Plan area helped future growth to be diverted away from such areas.

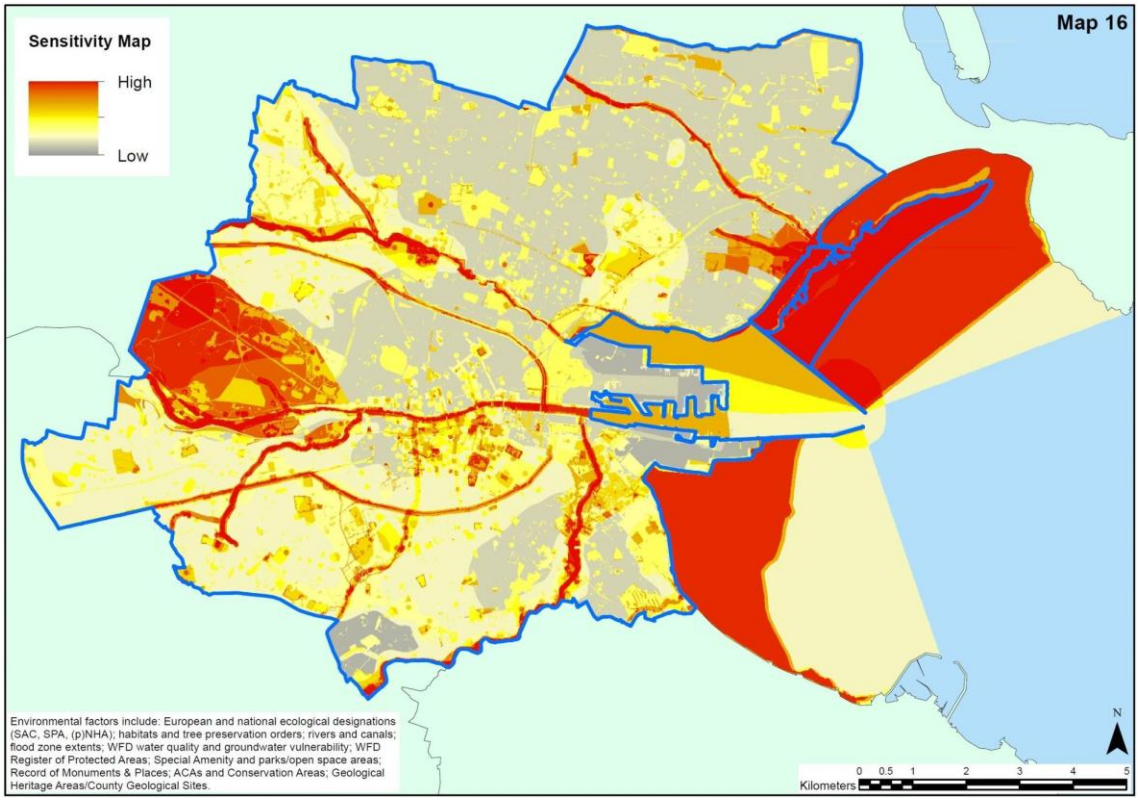
Environmental sensitivity mapping is a useful tool for identifying at a strategic level (in this case at the extent of a capital city) environmentally sensitive areas. Such sensitivity mapping can be seen as being based on the principles of SEA by presenting a visual overview of the relative sensitivity of areas, particularly where they overlap, in order to provide a more strategic and informed approach to planning and the selection of alternatives; sensitive environmental receptors have less capacity to absorb changes to their conditions. An Environmental Sensitivity Map (ESM) has thus been compiled for the Dublin City County administrative area

The environmental factors which have been considered in compiling the ESM for Dublin City are summarised below and cover a range of categories from biodiversity and water to landscape and cultural heritage:

- European ecological designations including Special Areas of Conservation (SACs) and Special Protection Areas (SPAs);
- National ecological designations such as proposed Natural Heritage Areas (pNHAs);
- Dublin City Parks Biodiversity Survey and habitat mapping;
- Tree preservation orders (TPOs);
- Rivers and canals;
- Flood zone (‘A’ and ‘B’) extents;
- Water quality and groundwater vulnerability;
- Water Framework Directive (WFD) Register of Protected Areas;
- Special Amenity areas and parks/open spaces;
- Record of Monuments and Places (RMP);
- Architectural Conservation Areas (ACAs); and
- Geological Heritage Areas (GHAs) and County Geological Sites (CGCs).

The environmental factors above were assigned to a weighting category of High, Medium or Low. The weighted data was brought in to a geographic information system (GIS) to allow spatial overlay and calculation of the overall sensitivity. The colour scheme gives an indication of the relative sensitivity of the environment with darker red indicating high sensitivity and greys representing areas better able to absorb change. While it is acknowledged that there are limitations and an element of subjectivity to ESM, where there is a concentration of sensitive areas or overlap it becomes readily apparent where increased development in such areas could cause deterioration of the environment without appropriate mitigation measures being taken

See Map 1 Environmental Sensitivity Map
(Taken from Figure 16 of the Environmental Report, Volume 5)



2.4 Preparation of the Environmental Report and Baseline Date Collection

In order to assess the likely significant impacts of the Plan, baseline data on the current state of the environment was collected and evaluated. This was carried out with reference to existing databases held by Dublin City Council and other organisations such as the Environmental Protection Agency (EPA), the National Parks and Wildlife Service (NPWS), Geological Survey of Ireland (GSI) etc. GIS mapping has been used where possible in the Environmental Report to illustrate the data.

In accordance with legislation and guidance, the existing environment was described with respect to:

- Population and Human Health
- Biodiversity, Flora and Fauna
- Climatic Factors
- Air (air quality and noise)
- Water
- Material Assets (transport and waste management)
- Cultural Heritage (including architectural and archaeological heritage)
- Landscape and Soil

Collection and analysis of this information has allowed the identification of key resources and sensitivities within the Plan area and allowed for the identification of potential threats to the environment, thus allowing for the inclusion of mitigation measures to ensure that the Plan does not exacerbate existing problems.

Table 2.1 – Existing Environmental Pressures in Dublin City

Issue Area	Existing Environmental Pressures
Population and Human Health	Given the limited space available in Dublin City, the main issues are to accommodate future growth while consolidating development and creating a compact city. There is also a need for high quality public transport and water/wastewater treatment provision. The challenges facing Dublin City include: ▪ Demand for more housing units and finite stock of zoned and serviced lands; ▪ High vacancy rate in the city; ▪ Requirement for adequate water and wastewater infrastructure to serve areas of future development and/or areas of increased density; ▪ Traffic-related air emissions impacts; additional quality open space provision required to support the increasing density of population; ▪ Continued expansion and interconnection of green and recreational spaces as part of the green infrastructure of the city; ▪ Noise in the city, if excessive, can be detrimental to the physical and mental health of the population; and ▪ The supply, storage and treatment of water now lie within the remit of Irish Water as the national water utility.
Biodiversity, Flora and Fauna	As the population of the city increases, increasing demands are made on the existing green spaces, coastline, and associated habitats and waters. It is important that the coastal zone, together with its associated ecological network, is managed and developed in a way that protects and enhances its natural heritage and landscape. There are a number of European (Natura 2000) Sites located adjacent to the city that could be impacted by the Development Plan and need to be taken into account. The Dublin City Council area is traversed by a number of key regional river systems and degradation in water quality and ecological status from upstream pollution to rivers is a significant problem for the city. The city also has a variety of open and green spaces which together form the green infrastructure of the city. Insensitive development can cause a loss of connectivity of these habitats for

Issue Area	Existing Environmental Pressures
	wildlife. Lack of protection and mitigation on construction sites can lead to localised pollution of watercourses and potential negative impacts on existing flora and fauna through the generation of noise and dust and alterations to habitats. Replacement of native species of flora and fauna by non-natives due to improper land management practices and the spread of invasive alien species (particularly in river valleys) is also a pressure. The existing wastewater treatment plant at Ringsend is operating over its design capacity and has no additional capacity to facilitate the anticipated increase in population in the city. This will potentially lead to deterioration in surface water quality, however the delivery of the Greater Dublin Strategic Drainage Supply project would free up some capacity at Ringsend. Potential increased flood risk from changed land-use patterns, climate change and predicted sea rise level could result in loss or alteration of habitats through erosion and alteration of levels. An increase in the frequency of high rainfall events due to climate change can result in sudden elevated levels of pollutants contaminating aquatic habitats. Existing faulty connections and combined sewer overflows resulting in contamination of surface waters with effluent and degradation of aquatic habitats. Pressures can also arise on coastal areas due to increased commercial, industrial and recreational activities, including more activity in Dublin Bay.
Air Quality and Noise	Air quality in Dublin City is currently good. In particular years Dublin's air quality has shown significant improvement in the levels of black smoke, lead, sulphur dioxide, benzene and carbon monoxide (CO). Emissions from the transport sector are the main, but not the only threat to air quality in the Dublin region. Other issues include the construction industry, uncontrolled burning of waste and localised emissions from a small number of industries. Noise mapping undertaken as part of the Dublin Agglomeration Noise Action Plan indicated that traffic congestion and movement were the issues of concern regarding noise pollution. Of the 527,612 people living in the Dublin City Council area, 47% of the population are exposed to sound levels from traffic sources above the desirable day time level of 55 dB (A) with 5% exposed to day time sound levels above 70 dB (A). Railway, industrial, and aircraft noise does not have a major impact on overall noise levels. The majority of noise complaints in 2013 related to the general commercial activities of the city followed by commercial music complaints and complaints related to construction.
Climate	The two single greatest issues facing the city in relation to climate change relate to increased amounts of greenhouse gas (GHG) emissions from transport movements, and the danger posed by flooding events which will, in part, occur as a result of the impacts on the former. Solutions require reductions in unsustainable transport movements, and the amelioration of potential flooding events. Changes in sea level and/or changes in the occurrence of severe rainfall events as a result of climate change could adversely impact upon the city's human beings, its biodiversity and its economy. Codema as Dublin City's energy authority, and in association with Dublin City Council, produced a *Sustainable Energy Action Plan* (SEAP) for the period 2010-2020 and monitors sustainability indicators to track progress. The aim of the plan is to reduce the city's energy consumption by 33% and associated emissions by 20%, by 2020. Codema's Monitoring and Progress Report on the SEAP noted that Dublin

Issue Area	Existing Environmental Pressures
	City is on track to meeting the 33% energy reduction target according to the Sustainable Energy Authority of Ireland's benchmarking system. Waste and agriculture are not major sources of GHG emissions within the city boundary. In 2011, Dublin City (11.5% of the national population) released approximately 2.95 million tonnes of CO_2. On average, a Dubliner released 5.6 tonnes of CO_2 per year, less than the national average of 12.6 tonnes in 2011 (CSO Environmental Indicators, 2014). Overall, CO_2 emissions dropped significantly by 43% over the period 2006-2011, mainly due to changes in fuel usage and decreases in emissions from the electricity grid. This puts Dublin more in line with other peer cities such as London (4.9t CO_2 per capita). Dublin City in 2011 consumed 10.14 TWh of primary energy per year (compared to 22.0 TWh in 2006), in the form of electricity, oil, natural gas and renewable energy. In terms of more recents calculations of energy consumption, as part of Dublin City's Sustainability Report for 2013, Codema estimated the city's energy usage (in terms of megawatts/hour/capita) decreased approximately 18% in the period 2006-2011. Dublin City encourages generation and use of sustainable energy and the council works continuously with Codema on projects that aim to reduce energy use.
Landscape	The landscape in Dublin City is characterised by its predominantly urban fabric, its diverse styles of building of varying heights and its green infrastructure – the network of open spaces and parks that contribute to the natural heritage aspect of landscape in an urban environment. Creating landscape linkages within an urban fabric that has reached almost full development can be difficult, and a key challenge lies in providing accessible public landscape that meets the perception and demands of a European capital city. A balance must be struck between competing demands or incompatible uses within the public landscape, such as between biodiversity and recreational uses. Changes in the private landscape can occur through development and densification, from small-scale removal of front residential gardens for parking to larger scale changes in the landscape associated with institutional facilities when redeveloped. A key issue is to ensure that opens space amenities, including the natural environment, are connected as main features of the city's character.
Soils and Geology	The soils in Dublin City are 'urban' in nature i.e. soils which have been disturbed, moved and manipulated by human activities. Urban soils are generally overlain by a non-agricultural, man-made layer formed from mixing, infilling or contamination by industrial uses. There are existing contaminated grounds due to historical and industrial activities at some sites (e.g. vitriol plants, glass manufacture, iron works, fertiliser plants etc.). Contaminated soils may also place technical or financial pressures on development and contaminants bound to organic matter in soils can be released due to disturbance, dredging and removal of the soil. Other pressures to soils include structural degradation, compaction, erosion (e.g. from recreational activities), invasive alien species, and reduced groundwater recharge/holding capacity by increased soil impermeability from development. The potential increased flood risk from changed land use patterns, climate change and predicted sea rise level could result in loss of soil organic matter through erosion and alteration of levels. Additionally increased volumes of surface water run-off due to conversion of permeable landscapes to impermeable can cause increased flooding, erosion and alteration of soils and their associated habitat. The lack of a Soil Framework Directive means there is no legislative or policy enforcement for the protection of soils.
Water	Some surface waters are at significant risk of failing to achieve the WFD objective of '*good'* status in 2015. Of the transitional waterbodies present in Dublin City, the Lower Liffey Estuary is currently at '*good*' water status while the Tolka and North Bull Island Estuaries are at '*moderate*' status. The Dublin Bay coastal waterbody is

Issue Area	Existing Environmental Pressures
	at '*good*' status, and both groundwater bodies in Dublin City are currently at '*good*' waterbody status. All river waterbodies however are currently at *'moderate'* to *'poor'* status. It should be noted that the quality of river waters flowing into the Dublin City Council area are to a large extent determined by activities in the upstream catchments in adjoining local authorities. However, the management of water quality on a single national river basin district under the Water Framework Directive should lead to a more integrated approach to the management of the all river catchments. The main pressures to rivers in Dublin City are upstream pollution, combined sewer overflows, misconnections of wastewater from individual houses and urban runoff. Flooding is a natural process that can happen at any time in a wide variety of locations and plays a role in shaping the natural environment. Dublin City is most vulnerable to two key sources of flooding - fluvial and coastal. The challenge for Dublin City is to reduce the flood risk in the city to the National Flood Standards to above 1% annual exceedance probability (AEP) (or roughly 100 year flood event) for fluvial flooding and above 0.5% AEP (roughly 200 year flood event) for tidal flooding, as far as is reasonably possible.
Material Assets	It is considered that the completion of the Greater Dublin Strategic Drainage Study will resolve the majority of issues regarding wastewater treatment constraints up to 2031. This will allow for wastewater treatment capable of serving sustainable and in some instances, appropriate higher density development of the city and surrounding areas, without any negative impact on the achievement of the objectives of the Water Framework Directive. Long-term drinking water supplies for Dublin should be resolved through the Water Supply Project. This project aims to supply water to the Greater Dublin Area up to 2031 and beyond. The main issues in relation to transport include accommodating the needs of public transport, pedestrians, cyclists and the private vehicles given the city's limited road space, as well as traffic congestion.. As such it is imperative that there is a modal shift to more sustainable travel patterns i.e. the need to motivate greater numbers of people to cycle, walk or use public transport including regional initiatives. A range of issues has been identified for waste management in Dublin City. These include localised as well as more strategic issues: contribute to meeting the strategic Eastern-Midlands Regional Waste Plan targets; reuse of materials rather than the use of new materials in development; a proportion of building materials should be from recycled materials such as concrete, brick or stone; use of renewable materials and those low embodied energy materials and low toxic materials; biowaste is a valuable resource and its recycling should continue to be encouraged; continued encouragement of reuse, up-cycling and recycling and a move away from landfill in order to meet the targets of the Landfill Directive. Strategic waste issues related to the entire Eastern-Midlands Region as well as Dublin City include: the assessment of historic and unregulated legacy landfill/illegal dump sites; lack of a third or fourth bin in some areas which would allow for better segregation of waste; illegal waste storage and non-compliant businesses; inconsistencies in the classification and thus inappropriate disposal of construction and demolition waste as mixed or municipal waste, given the significant potential for recycling this material; current over-reliance on the export of residual waste streams abroad for processing and recovery. The Dublin Waste to Energy plant will help towards reducing waste going to landfill as well as facilitating indigenous recovery of waste in Ireland.
Cultural Heritage (archaeological and architectural heritage)	Development which involves material alterations or additions to protected structures can detract from the special character of the structure and its settings, and have the potential to result in the loss of features of architectural or historical interest. The main issues in relation to cultural heritage are excessive parking in the front gardens of protected structures and the loss of urban fabric due to insensitive development.

As the data was complied and plan policies evolved, the likely significant effects of implementing the plan were identified, described and evaluated. This process formed a core element of the Environmental Report. The potential effects of the plan were then considered using a system of Environmental Protection Objectives (EPOs), Targets and Indicators which were formulated having regard to the issues emerging from the baseline assessment, consultations with the environmental authorities and internal consultation with other departments within the Council.

The assessment of the baseline environment also enabled those preparing the plan to consider how the environment might evolve in the absence of the proposed plan. Following the assessment, the Environmental Report made a number of recommendations for changes to the draft plan.

2.5 Consideration of Alternatives

Article 5 of the SEA Directive requires the environmental report to consider '*reasonable alternatives taking into account the objectives and the geographical scope of the plan or programme'* and the significant effects of the alternatives selected. Alternatives must be realistic and capable of implementation and should present a range of different approaches within the statutory and operational requirements of the Development Plan. It is noted that a "Do Nothing" option has not been explored, as this is not considered reasonable, given the legislative requirement to update the Development Plan.

The strategic alternatives below were considered for assessment as part of the SEA process for the Dublin City Development Plan 2016-2022, they include:

Alternative 1 – Targeted Growth around existing identified growth centres

This alternative seeks to target and consolidate growth around the Z5 city-centre mixed use zoning area as well as existing identified growth centres such as the Strategic Development and Regeneration Areas (SDRAs), the Strategic Development Zones (SDZs) and areas identified in Local Area Plans (LAPs). The Council would favour the development of vacant lands within the canal area of the city and to incentivise owners to redevelop these lands (such as through the '*New City Living Initiative'*).This alternative examines changing the wording of Z10 (Inner Suburban Sustainable Mixed-Use) land use areas to allow for residential as the prominent use outside the canals and more mixed use within the canals.

The Z10 zoning will read as follows: *'To consolidate and facilitate the development of inner city and inner suburban sites for mixed-uses, - with residential the predominant use in suburban locations and office, retail and residential the predominant uses in inner city areas.'*

Alternative 2 – Market Led Growth

The approach of '*Alternative 2*' is to promote the development of the city in a market-led manner, which would involve a dispersed model of spatial development throughout the city. The location, nature and density of new development in the city would be influenced primarily by market demand and driven by economic market forces. Higher intensity

development would not necessarily take place within designated growth centres (SDRAs/KDCs) in close proximity to transportation nodes.

Sites of high-density development have the potential to be dispersed throughout the city irrespective of the prevailing architectural and residential character or environmental amenity of the surrounding area.

Alternative 3 – Selected Concentration of growth targeted on existing Strategic Development & Regeneration Areas (SDRAs)/ Key Development Centres (KDCs) / Strategic Development Zones (SDZ): elements of a phased approach to the development of land

The third main alternative is to allow for a selected concentration of growth targeted on existing areas within the SFRAs/KDCs/SDZ areas with a phased approach to delivery of development, such as between the Docklands SDZ and other areas outside the canal area.

2.6 Mitigation

Avoidance and Mitigation of impacts was addressed where possible at all stages of the formulation of the plan itself as part of the SEA process and the draft plan was drafted to minimise adverse impacts where possible.

The SEA, AA and SFRA processes suggested various measures for integration into the Plan as provisions (policies and objectives) in order to mitigate the effects of implementing the Plan and to contribute towards environmental protection and sustainable development.

Chapter 9 of the Environmental report describes the measures to prevent, reduce and as fully as possible offset any potential significant adverse environmental effects of implementing the Dublin City Development Plan 2016-2022.

Some potential significant adverse impacts of implementing the Dublin City Development Plan 2016 – 2022 may arise as a result of policies to facilitate additional population and economic growth and development, increasing densities and generally facilitating intensification of the city, promoting increased access to recreational areas, opening up private recreational areas and promoting taller buildings in some locations of the city. While these policies are fully in line with national and regional policy to consolidate and ensure a more compact city with greater intensity of uses and to ensure that the city's role as the economic engine of the state is strengthened there is potential for significant adverse impacts on the receiving environment unless mitigated against.

Dublin City Council placed sustainability as the overarching theme from the outset of the preparation of the development plan. The creation of a compact, green and connected city made of up of sustainable neighbourhoods informed the preparation of the core strategy and the policies and objectives of the development plan from the outset. The plan also contains planning policies for a sustainable city and region which set out a new initiative to underpin the sustainable approach taken in the plan.

Policies with sustainability at their core allow them to act as mitigation measures to offset any potential adverse impacts on the environment as a result of implementing the development plan. Mitigation in the form of polices serves to formalise the mitigation measures and fully integrates them into the development plan process and during the implementation phase of the development plan

Table 2.2 below identifies the key mitigation measures which have been integrated into the Plan in response to the likely significant environmental effect which would occur as a result of Plan implementation in the absence of mitigation. The integration of these measures into the Plan occurred over a number of iterations and was informed by various communications through the SEA process with the Development Plan team who would put upfront mitigation policies/objectives into the plan.

Table 2.2: Key Mitigation Measures

Potential Significant Impacts if unmitigated	***Environmental considerations that have been integrated into the Plan.***
1.Increase in the number of flood events due to increased development pressure on the land, and hard surfacing areas of the City.	***CC1: Policy to prioritise measures to address climate change*** ***CC5: Policy to address flood risk at strategic level through the process of strategic flood risk assessment, and through improvements to the city's flood defences*** ***SI8: Policy to mitigate the effects of floods and droughts*** ***SI9: Policy to develop catchment based Flood Risk Management Plans for rivers, coastlines and estuaries.*** ***SI10: Policy to have regard to the Flood Risk Management Guidelines*** ***SI11: Policy to protect integrity of Flood Defence Infrastructure*** ***SI12:Policy to comply with the Strategic Flood Risk Assessment*** ***SI13: Policy regarding Basements and Flooding*** ***SI14: Policy to protect coastline from flooding*** ***SI15: Policy to minimise the risk of pluvial flooding*** ***SI16: Policy to minimise flood risk from all other sources*** ***SI17: Policy to require an environmental assessment of al proposed flood protection or flood alleviation works*** ***SI18: Policy regarding use of SUDS*** ***GI2: Policy requiring AA screening for plans/projects*** ***GI4: Policy regarding GI and flooding*** ***GI9:Policy regarding multifunctional role of GI including Urban drainage and flood management*** ***Objectives (SIO8, SIO9, SIO10, SIO11, SIO12, SIO13, SIO14, GIO28,GIO29)***
2. Failure to tackle climate change and emissions from transport and issues regarding climate change.	***CC1: Policy address climate change*** ***CC2: Policy to mitigate the impacts of climate change*** ***CC3: Policy to promote energy efficiency*** ***CC5: Policy to address flood risk at strategic level*** ***SI8:Policy to mitigate the effects of floods and droughts*** ***GI9: Policy to integrate open space into the GI network for the city, providing multifunctional role including drainage, flood management, biodiversity, outdoor recreation , and carbon absorption.*** ***MT2: Policy to promote modal shift from private car to more***

	sustainable transport modes
3. Loss of biodiversity with regard to European Sites and Annexed habitats and species & loss of biodiversity to designated sites including wildlife sties and listed species.	***GI1: Policy to develop a green infrastructure network through the city thereby interconnecting strategic natural and semi natural areas etc*** ***GI2: Policy requiring AA screening for Plans and Projects.*** ***GI3: Policy to develop linear parks, particularly along waterways.*** ***GI6: :Policy to support and implement the objectives of the National Landscape Strategy*** ***GI7. Policy to protect landscapes including existing green spaces*** ***GI9: Policy to integrate open space into the GI network for the city,providing multifunctional role including drainage, flood management, biodiversity, outdoor recreation , and carbon absorption.*** ***GI10. Policy to protect/enhance public open spaces*** ***G11: Policy to seek provision of additional spaces in areas deficient such as pocket parks or development of institutional land*** ***GI14: To promote development of soft landscaping and SUDS*** ***GI15. Policy to protect character of watercourses in the city*** ***GI16: Policy to improve the natural character and ecological value of all rivers*** ***GI17: Policy to develop sustainable coastal , estuarine , canal and riverine recreational amenities*** ***GI19: Policy to promote coordinated approach to the management of Dublin Bay*** ***GI21:Polciy to reduce marine pollution in Dublin Bay*** ***GI23: Policy to protect flora, fauna and habitats,*** ***GI24: Policy to conserve and manage all NHAs, SACs and SPAs,*** ***GI25:Policy regarding habitat creation/maintenance And facilitate biodiversity*** ***GI26:Policy regarding non designated areas of ecological importance*** ***GI28: Policy to support implementation of the Dublin City Tree Strategy*** ***GI29: Policy to adopt proactive approach to tree management*** ***GI30: Policy to encourage more tree planting***
4. Short Term impacts as a result of construction work on noise and air quality in the City.	***SI24: Policy to monitor and improve air quality*** ***SI25: Policy to preserve and maintain air and noise quality*** ***Objectives(SIO20, SIO21, SIO22, SIO23, SIO24, SIO25, SIO26, SIO27, SIO28, SIO29)***
5. Potential adverse impact on quality and status of water bodies.	***SI4: Policy to promote and maintain good status in water bodies*** ***SI5:Policy regarding enhancement of aquatic ecosystems*** ***SI6: Policy to protect aquatic environment*** ***SI7: Policy to reduce pollution of groundwater*** ***GI15. Policy to maintain and improve character and of watercourses in the city*** ***GI16: Policy to protect the character and ecological value ofall rivers within DCC*** ***GI19 : To ensure co-ordinated approach to management of Dublin Bay.*** ***GI20. Policy for improvement of water quality, bathing facilities and other recreational opportunities in the coastal,***

	estuarine and surface waters ***GI21. Policy to reduce marine pollution in Dublin Bay***
5.Limitations of Wastewater Treatment Facility at Ringsend which could lead to deterioration of water based habitats and species and to the quality of water.	***SI1: Policy to support Irish Water: provision of high quality drinking water & waste water treatment facilities*** ***SI2: Policy to support Irish Water in upgrading of wastewater infrastructure & Greater Dublin Regional Wastewater Treatment Plant,& Marine Outfall and orbital sewer*** ***SI3: Policy to ensure development is permitted in tandem with available water supply and wastewater treatment***
6. Failure to comply with the drinking water regulations and to provide new development with a clean water supply	***SI1: Policy to support Irish Water: provision of high quality drinking water & waste water treatment facilities*** ***SI2: Policy to support Irish Water in upgrading of wastewater infrastructure & Greater Dublin Regional Wastewater Treatment Plant,& Marine Outfall and orbital sewer*** ***SI3: Policy to ensure development is permitted in tandem with available water supply and wastewater treatment***
7. Increase in waste levels	***SI19: Policy to support good waste management*** ***SI20: Policy regarding material sorting/recycling*** ***SI21: Policy to minimise amount of waste*** ***SI22: Policy regarding polluter pays principle*** ***Objectives(SIO15, SIO16, SIO17, SIO18, SIO19)***
8. Effects on entries to the record of Projected Monuments and Places and other archaeological heritage.	***CHC9:Policy to protect and preserve National Monuments*** ***CHC10:Objective to implement archaeological actions of Dublin City Heritage Plan 2002-6, in light of the review 2012*** ***CHC15: Policy to preserve historic elements of significance in the public realm***
9.Effects on entries to the Record of Protected Structures.	***CHC1: Policy to seek the preservation of the built heritage of the city etc*** ***CHC2: Policy to ensure that the special interest of protected structures is protected.*** ***CHC3: Policy to identify and protect exceptional buildings of late 20th Century*** ***CHC4: Policy To protect the special interest and character of Dublin's Conservation Areas.*** ***CHC5: Policy to protect Protected Structures and preserve the character and the setting of Architectural Conservation Areas.*** ***CHC6: Policy to ensure a sustainable future for historic and other buildings subject to heritage protection***
10.Potential adverse impacts arising from visual impacts on the landscape	***SC16: Policy to recognise Dublin as predominately low rise whilst also recognising the potential and need for taller buildings in a limited number of locations*** ***SC17: Policy to protect skyline of the inner city*** ***SC18: Policy regarding provision of tall buildings*** ***GI7. Policy to protect landscapes*** ***GI8. Policy regarding views and prospects in relation to Landscape and natural heritage*** ***Objective GIO8: to undertake a views and prospects study to Identify key views and prospects of the city.*** ***Objective SCO4 : to undertake a views and prospects study.***

As part of the screening process for SEA and AA a number of suggestions were made to the Development Plan Team to amend or insert a number of text changes through the SEA, AA and SFRA processes. The measures generally benefit multiple environmental components

ie. protection of biodiversity, flora and fauna, minimisation of flood risk, protection of the landscape for example. These are highlighted in **Table 2.3** below.

Table 2.3 Suggestions made to the Development Plan Team during the Screening Stage

Chapter 4 Shape & Structure of the City **SC3:** To develop a **sustainable** network of safe, clean, attractive pedestrian routes, lanes and cycleways in order to make the city more coherent and navigable.	AA Comments: The word sustainable should be inserted.
SC29: To discourage dereliction and to promote the appropriate redevelopment of vacant and brownfield lands, **in line with environmental surveys including flora and fauna,** and to prioritise the redevelopment of sites identified in Dublin Inner City Vacant Land Study 2015.	SEA Comments, Policy should be carried out in line with Environmental surveys, including flora and fauna. Invasive species

Chapter 5 – Quality Housing **QH8.** To promote the development of vacant or underutilised infill sites**, in line with environmental surveys including flora and fauna,** and to favourably consider higher density proposals which respect the design of the surrounding development and the character of the area.	SEA Comments, Policy should be carried out in line with Environmental surveys, including flora and fauna. Should consider inclusion of reference to within the canals.
Chapter 7 – Retailing **RD2**: (M274)To require that proposed retail developments for large scale or sensitive sites **in line with environmental requirements**, are accompanied by a retail design brief guided by the key principles contained in the 'Retail Design Manual – DECLG, 2012'. www.environ.ie/en/Publications	SEA comments: Policy should include reference to in line with environmental requirements
Chapter 8 - Movement and Transport **MTO31** :To initiate and/or implement the following road improvement schemes and bridges within the six year period of the development plan, subject to the availability of funding, **and environmental requirements** Roads •River Road •Richmond Road Malahide Road/R107 including North Fringe Improvements) •Blackhorse Avenue (commenced) •Clonshaugh Road Industrial Estate •Ballymun (improved town centre linkage) •Kilmainham/South Circular Road •Link from Military Road to Conyngham Road •East Wall Road/Sheriff Street to North quays •Cappagh Road Bridges •Dodder Bridge •Liffey Valley Park Pedestrian/cycle bridge • Cycle/pedestrian bridges that emerge as part of the evolving Strategic Cycle Network and Strategic Green Infrastructure Network. • Newcomen Bridge (upgrading for pedestrian and cyclists use) • Three new bridges proposed as part of the North Lotts and Grand Canal Dock SDZ.	Objective should include reference to include 'environmental requirements in text.

Chapter 9 Sustainable Environmental Infrastructure **SI4:** To promote **& maintain** the achievement of at least good status in all water bodies in the City.	SEA: Policy should refer to 'maintain' good status also.
SI8: To mitigate the effects of floods and droughts, **subject to Environmental Assessment.**	AA Comment: Policy should have regard to AA screening .
GIO19. To maintain beaches at Dollymount, Sandymount, Merrion and Poolbeg/Shelly Banks to a high standard, and to develop their recreational potential as a seaside amenity, in order to bring them to 'Blue Flag' , standard**, subject to Article 6 Assessment of the Habitats Directive.**	AA Objective should have regard to Article 6 Assessment.
GI2. That any plan/project, either individually or in ncombination with other plans or projects that has the potential to give rise to significant effect on the integrity of any ~~Natura 2000~~ **European** Site(s) shall be subject to an appropriate assessment in accordance with Article 6(3) and 6(4) of the EU Habitats Directives.	AA Comment: Any reference to Natura 2000 site should read European Site This should be amended throughout
GI9: To incorporate open space into the green infrastructure network for the city providing a multi-functional role including urban drainage, flood management, biodiversity, outdoor recreation and carbon absorption.	SEA: Reference should be amended to insertion of word flood management on foot of comments from JBA consulting.(SFRA)
GI18. To liaise with relevant state agencies responsible for the city's waterways, including Waterways Ireland, ~~Eastern Regional Fisheries Boards~~ **Inland Fisheries Ireland, the Environmental Protection Agency** and Dublin Port Company	SEA: This should be amended to read Inland Fisheries Ireland not Easter Regional Fisheries. Also include reference to EPA.
GI21. To support initiatives to reduce marine pollution in Dublin Bay in partnership with other organisations and to raise awareness by Bay users and the general public, **and also to have regard to the Marine Strategy Framework Directive (2008/56/EC)**	SEA: To have regard to the Marine Strategy Framework Directive, 2008
GI23. To protect flora, fauna and habitats, which have been identified by ~~the~~ **Articles 10 and 12 of** the Habitats Directive, Birds Directive, Wildlife Act 1976 (as amended), the Flora Protection Order (S.I. no. 84 of 1999), **the Birds & Natural Habitats Regulations , 2010, and** and the European Communities (Natural Habitats) Regulations 1997 (S.I. no. 94 of 1997)	SEA: Should be amended to include Birds and Natural Habitats Regulations 2010, Article 10 & 12 of the Habitats Directive.
GI24. To conserve and manage all Natural Heritage Areas, Special Areas of Conservation and Special Protection Areas designated, or proposed to be designated, by the ~~Department of Environment, Heritage and Local Government.~~ **Department of Arts, Heritage and the Gaeltacht**	SEA: Reference should be amended to Department of Arts, Heritage and the Gaeltacht
Chapter 12 -Sustainable Communities & Neighbourhoods **SN13** To facilitate multi-campus style school arrangements where appropriate, **in close proximity to residential neighbourhoods and transportation routes,** and to promote an urban typology of school building design sustainable in a city context and which responds to the local character or streetscape and reflects the civic importance of a school to a local community	SEA Comments: Suggest that this reads in proximity to residential neighbourhoods and main transport routes.

Chapter 3 – Environmental Report and Submissions and Observations

3.1 Introduction

This section deals with how both the Environmental Report and submissions and observations from environmental authorities and members of the public, received throughout the process of preparing the development plan and relevant to the SEA process, were taken into account into the preparation of the Plan.

There have been three periods of consultation:

1) Consultation on the pre-draft stage, and Scoping Report. A period of public consultation ran from 10th November 2014 – 14th January 2015

2) Consultation on the draft plan, Environmental Report, Natura Impact Report, & Strategic Flood Risk Assessment. This took place from 1st October 2015 – 11th December 2015.

3) Consultation on the Amendments to the draft plan, SEA/AA Screening Report. The amendments went back on public display from the 21st June – 19th July 2016.

At all stages of consultation the content of the submissions received have been considered by the Plan, SEA and AA teams.

3.2 SEA Scoping Submissions

In line with best practice, a Scoping Issues Paper was prepared by the planning authority to facilitate the consultation process. Initial public consultation was carried out in December 2014 with the issuing of the Scoping Issues Paper (22nd December 2014) to the above-mentioned statutory environmental authorities.

Letters were sent to all the Environmental Authorities on the 26th of February 2015, inviting them to a meeting.

A meeting was also convened between Dublin City Council and the Environmental Protection Agency (EPA), which informed the Scoping Report.

Written feedback was received from the Environmental Authorities during the Issues Paper Consultation Period, which was taken on board. Following feedback from the Environmental Authorities on the Scoping Issues Paper, a Scoping Report was prepared taking into account the recommendations and advice received from the Environmental Authorities and also those issues raised in the baseline studies carried out by the SEA team.

Devising the Scoping Issues Paper is considered good practice, although not statutorily required. The report presents the current understanding of the main key environmental issues and could also be used as a tool to generate further comment from stakeholders on the scope and approach of the SEA.

Under Article 6 of the SEA Directive, the competent authority, in this case Dublin City Council, is required to consult with specific environmental authorities (statutory consultees)

on the scope and level of detail of the information to the included in the Environmental Report. Under S.I. 436 of 2004 and as set out in the Planning and Development (Strategic Environmental Assessment) Regulations 2004 and S.I. 201 of 2011 amending the Planning and Development (Strategic Environmental Assessment) Regulations 2004 the statutory consultees have been established as being:

(i) Environmental Protection Agency (EPA),

(ii) Department of Environment, Community and Local Government,

(iii) Department of Arts, Heritage and Gaeltacht Affairs (if potential significant impacts in relation to the architectural or archaeological heritage or to nature conservation)

(iv) Department of Agriculture, Fisheries and Food (if potential significant effect on marine environment / fisheries),

(v) Department of Communications, Energy and Natural Resources (if potential significant effect on marine environment / fisheries),

(vi) The Managers of the adjoining planning authorities (Ie.Fingal County Council, Dunlaoghaire- Rathdown County Council and South Dublin County Council).

Note: It should be noted that some of the Government Departments have since changed name. The Department of the Environment, Community and Local Government is now known as the 'The Department of Housing , Planning, Community and Local Government', The Department of Arts, Heritage and Gaeltacht Affairs is now known as 'The Department of Arts, Heritage, Regional, Rural and Gaeltacht Affairs', The Department of Agriculture, Fisheries and Food is now know as 'The Department of Agriculture, Food and the Marine, and finally the Department of Communications, Energy and Natural Resources is now known as the 'The Department of Communications, Climate Action & Environment'

The Scoping Report was sent to the statutory consultees /Environmental Authorities on the 30th of March 2015.

Submissions were made by the Environmental Protection Agency, the Department of Arts, Heritage and the Gaeltacht, and the Department of Communications, Energy and Natural Resources on behalf of Geological Survey Ireland. Submissions received from the Environmental Authorities were reviewed and incorporated into the process.

Feedback from Environmental Protection Agency (EPA)

The EPA has launched a new application for public authorities; a GIS based application, to allow key aspects of the environment to be explored, to inform the SEA screening and scoping stage of plans and programmes. The Plan should include commitment to integrate and implement relevant aspects of the update to the River Basin Management Plans and associated programme of measure. Commitment to provide the required infrastructure needed to cater for development, and to collaborate with Irish Water in seeking to resolve these issues and to ensure provision of adequate and appropriate critical water & waste water infrastructure to cater for future development in the area. The SEA should consider the potential effects on all designated sites with the Plan area and adjacent to the plan area and in particular consideration should be given for cumulative / in-combination effects of the pan. Mitigation measures which address negative environmental issues should incorporate aspects of adjacent or higher level plans or programmes. A Flood Risk Assessment should be undertaken, and this should be taken into consideration for any new or existing zonings. Relevant aspects of the CFRAMS should be highlighted, and to implement relevant aspects.

The importance of Green Infrastructure, the protection and enhancement of biodiversity, ecological corridors/linkages wetlands etc were highlighted in the submission. Consideration should be given to habitat mapping. Consider a review of the existing County Heritage Plan.

Feedback from Department of Environment, Heritage and Local Government (DoEHLG)

No Feedback Received.

Feedback from Department of Communications, Energy and Natural Resources (DCENR) on behalf of Geological Survey of Ireland).

In relation to soils and water, SEA should contain information on soils, geology, geological, heritage, surface water and groundwater. Data is available on the GSI website. Geological heritage is part of Dublin City's natural heritage and should feature in the Soils Geology chapter of the SEA. Refer to GSI website for information on material assets mapping, air, noise and renewable energy sources (wind farms etc)

Feedback from the Department of Arts, Heritage and the Gaeltacht

The importance of green infrastructure/heritage is set out in the issues paper but not nature conservation. Submission sets out the legislation that the SEA/AA should adhere to. Plan should recognise importance of protected species, need to protect biodiversity. Include provisions to encourage management of features of landscape which are important to flora and fauna. Importance of hedgerows, bats and other protected species, and of rivers and wetland areas which are important source of biodiversity. Plan should recognise importance of protected species, need to protect biodiversity. Include provisions to encourage management of features of landscape which are important to flora and fauna. The plan should take account of the guidelines for Planning Authorities on Flood Risk Management. Ground and surface water should be protected. The draft plan should be screened for AA. Look at cumulative and ex-situ impacts, and in combination effects with other local authorities. In terms of amenity development they pointed out the negative impacts on biodiversity and designated sites particularly by the coast and along rivers as a result of development such as walking, cycling routes, seating, lighting, loss of riparian zone and moving of riparian zone which can lead to erosion and added disturbance by humans. With regards to the SEA they comment that it is important that the SEA process should take place in consultation with the teams working on the draft plan and appropriate assessment, as each process can help inform the other to ensure that the objectives and policies in the draft have no significant effects on the natural heritage.

Feedback from Adjoining Local Authorities

No feedback was received from the adjoining local authorities in the Dublin Region i.e. Dun Laoghaire – Rathdown County Council South Dublin County Council and Fingal County Council.

3.3 The Draft plan and Environmental Report Consultation

The Draft Dublin City Development Plan and associated environmental reports relating to Strategic Environmental Assessment (SEA), Appropriate Assessment (AA) and Strategic Flood Risk Assessment (SFRA) processes were placed on public display from 1st of October 2015 to the 11th of December 2015.

Following the publication of the draft plan, a total of 1,484 submissions/observations were received from the public and statutory agencies. All of the submissions were responded to in the Chief Executive's Report to Members in March 2016.

The following observations were received in relation to the Strategic Environmental Assessment, Environmental Report from the Environmental Protection Agency (EPA) and from the Department of Arts, Heritage and Gaeltacht Affairs (DAHG).

With respect to issues raised in the submissions from the EPA, some were resolved in the Chief Executives Report, and for others they were addressed by way of the Addendum to the SEA Environmental(ER). These are outlined in the **table 3.1** below.

Table 3.1 Summary of issues in Relation to SEA

Submission	Aspects of Submissions in Relation to SEA	Response/Outcome
Environmental Protection Agency (EPA)	The EPA note Dublin City Councils commitment to progress the Greater Dublin Waste Water Treatment Plan Marine Outfall and orbital sewer. They recommend that DCC ensure that this project is progressed in accordance with the requirements of the EIA, Habitats, Water Framework and Floods Directive	In the CE report on Submissions (March 2016) it was recommended that new text be inserted into Chapter 2 Vision and Core Strategic under Section 2.2.7 (page 12 of Plan) to read '' ***All future development of the City will be carried out in accordance with the requirements of the Habitats, Birds , Water Framework, Floods, SEA and EIA Directives'.*** This was addressed as part of the Amendments to the Plan. See Ref No. 2.3, in the CE Report, page 10. (June 2016)
Environmental Protection Agency (EPA)	They note the wide ranging commitment to future sustainable development in areas such as housing, environmental infrastructure,	In the CE report on Submissions (March 2016) it was recommended that new

	movement and transport and SDRAs. They recommend a specific objective to ensure that for any planned/future development projects including infrastructural upgrades , new roads, community facilities, cycle paths etc, that the requirements of the EIA, Habitats, Birds, Water Framework and Floods Directive respectively be taken into account.	text be inserted into Chapter 2 Vision and Core Strategic under Section 2.2.7 (page 12 of Plan) to read '' ***All future development of the City will be carried out in accordance with the requirements of the Habitats, Birds , Water Framework, Floods, SEA and EIA Directives'.*** This was addressed as part of the Amendments to the Plan. See Ref No. 2.3, in the CE Report, page 10. (June 2016)
Environmental Protection Agency (EPA)	They note commitment to policies SI1 and SI2 and related objectives SIO1, and SIO2 to collaborate with Irish Water in promoting investment in water and drainage networks.	This was noted.
Environmental Protection Agency (EPA)	In relation to the Non Technical Summary (NTS) – To include key environmental summary maps which highlight the key environmental sensitivities /vulnerabilities in the Plan Area. To include overview information in relation to the key mitigation and monitoring measures.	An Addendum to the Environmental Report was prepared to address this issue, See Addendum 1 (March 2016). See Appendix 1 for Updates to the Environmental Report. The ER Report will be updated to take on board these comments. New section on Environmental Sensitivity Mapping in NTS, and also in Section under Mitigation to include table of key Mitigation Measures included in the Plan. (this table was updated from original ER, to take on board any new revised policies/objectives and also renumbering of policies and objectives). New section in NTS to show monitoring measures(see Revised Table 8 in NTS).
Environmental Protection Agency (EPA)	Section 3.5 under Relationships with other relevant Plans and Programmes. To include reference to the Proposed National (Climate) Mitigation Plan (NMP), and to include a commitment to integrating any relevant recommendations of the NMP following its	An Addendum to the Environmental Report was prepared to address this issue, See Addendum 1 (March 2016) To update ER to take on board

	adoption.	reference to the Proposed National Climate Mitigation Plan (NMP). See Appendix 1. Also to Amend Table .3.3 in Section 3 accordingly.
Environmental Protection Agency (EPA)	Chapter 4 Baseline: Section 4.14.5.1 under Foul Sewage Treatment, include reference to recently published Focus on Urban Wastewater Treatment in 2013(2014).	An Addendum to the Environmental Report was prepared to address this issue, See Addendum 1 (March 2016) See Appendix 1 for updates to Section 4.14.5.1 of the Environmental Report.
Environmental Protection Agency (EPA)	Section 4.9.9.2 This should be updated to include reference to the adopted National Landscape Strategy under Protection of City Landscape.	An Addendum to the Environmental Report was prepared to address this issue, See Addendum 1 (March 2016) See Appendix 1 for updates to Section 4.9.9.2 of the Environmental Report
Environmental Protection Agency (EPA)	Chapter 5: Environmental Protection Objectives: the heading Geological Features should be considered under EPO L1 Landscape and Soils.	An Addendum to the Environmental Report was prepared to address this issue, See Addendum 1 (March 2016) Although this was not mentioned in the EPO L1, this would have formed part of the assessment and Geological Features would have been considered in the assessment.
Environmental Protection Agency (EPA)	Table 10.1 Selected Targets, Indicators, Targets and Monitoring Sources: This is to include a commitment to reviewing as part of the monitoring programme the effectiveness of mitigation measures during the lifetime of the plan. Consideration to linking monitoring with the interim/mid-term plan review and reporting.	An Addendum to the Environmental Report was prepared to address this issue, See Addendum 1 (March 2016) See Appendix 1 for updates to Section 10.4 of the Environmental Report, under Reporting and Responsibility.
Environmental Protection	EPA referred to standards set out in Chapter 16 with regards to appropriate remediation of contaminated lands prior to redevelopment and	On foot of this submission new section was inserted into Chapter 9 on Soil Remediation

Agency (EPA)	want to see these commitments reflected in a specific policy.	and also new Policy SI21A. See CE Report March 2016 (Page 168-169).
Environmental Protection Agency (EPA)	The EPA referred to policies in the draft plan on Sustainable Urban Drainage Systems and wanted to see a commitment to on-going maintenance and monitoring of these drainage systems should be reflected in the plan.	On foot of submission new text was recommended in Section 9.5.4 , page 76 of draft plan '***'Dublin City Council will carry out on-going maintenance and monitoring of the sustainable drainage systems within the public domain''***. (See CE Report March 2016, page 166-167)
Eastern Midlands Regional Assembly	Support the requirement for additional infrastructure capacity in water and wastewater to facilitate targeted growth under the RPGs.	This was noted.
Office of Public Works	The OPW in their submission refer to the Justification Text which is provided to ensure transparency and a consistent approach where development needs are weighted against risk. The submission points out that a precautionary approach suggested that this should be carried out with due care for all development in known or suspected flood risk areas, ie for historically zoned areas as well as those under construction for future developments. The OPW welcomes the commitment by DCC to adhere to these Guidelines and the production of a SFRA. The OPW acknowledges that a stage 2 SFRA has been produced. They note that although the flood maps are based on best available data, that maps are include existing flood defences. The Flood Zone Maps should be based on the undefended scenario as this will allow for assessment of residual risk due to failure/overtopping of existing defended. Consideration should be given to the benefit provided by flood defences bit only once the Justification Test has been applied and passed, The Defence standard should be clearly outlined eg. 1 in 1000 year fluvial or 1 in 200 year coastal and that an assessment of the defence in terms of structural integrity is also important. OPW considers that as a result of the flooding of the River Poddle and other such streams a blockage analysis should be carried out . They also point out that the ESB has inundation maps in the event of the unlikely occurrence of infrastructural	On foot of the submission from the OPW a number of amendments were made to the SFRA and also some of the flood maps. Amendments proposed to the SFRA are documented in Appendix 2.

	failure or breach. OPW state that the LA should apply the appropriate level of FRA recommended in the Guidelines. A balanced view of land usage and development should be taken and this can be achieved in full compliance with the Guidelines.	
Department of Arts, Heritage and Gaeltacht Affairs (DAHG).	To update and amend the legislation in SEA, NIR. The Wildlife Acts can be quoted as the Wildlife Acts 1976 – 2012. • The Flora Protection Order in force is the Flora (Protection) Order, 2015, S.I No. 356 of 2015 • The European Communities (Natural Habitats) Regulations 1997 have been revoked • The Birds and Natural Habitats Regulations in force are: • The European Communities (Birds and Natural Habitats) Regulations 2011, S.I NO 477 of 2011;The European Communities *Birds and Natural Habitat)(Amendment) Regulations 2013, S.I No. 499 of 2014 and The European Communities (Birds and Natural Habitats)(Amendment) Regulations 2015, S.I No. 355 of 2015-12-15 These can be called together as the European Communities (Birds and Natural Habitats Regulations 2011 to 2015.	An Addendum to the Environmental Report was prepared to address this issue, See Addendum 1 (March 2016) See Appendix 1 for updates to the Environmental Report.
Department of Arts, Heritage and Gaeltacht Affairs (DAHG).	To amend Table 6 of the SEA Environmental Report. Take out reference to deliver the objectives of the Dublin City Biodiversity Action Plan 2008-2012. Objective GIO20 is to support the Biodiversity Action Plan 2015-2019. This needs to be amended. This should be amended in Objective GIO120 to read the Dublin City Biodiversity Action Plan 2015-2020.	An Addendum to the Environmental Report was prepared to address this issue, See Addendum 1 (March 2016) References to the Biodiversity Action Plan 2015-2019 have been updated. Objective GIO20 has now been renumbered GIO23 and reads' To support the implementation of the 'Dublin City Biodiversity Action Plan 2015-2020', including inter alia (a) the conservation of priority species, habitats and natural heritage features, and (b) the protection of designated sites'. Table 6 on the NTS has now been renumbered Table 8 and has been updated. See Appendix 1.

Department of Arts, Heritage and Gaeltacht Affairs (DAHG).	Draft Waterways Heritage Plan to be added to Table 3.3.	An Addendum to the Environmental Report was prepared to address this issue, See Addendum 1 (March 2016) See Appendix 1 for updates to the Environmental Report. To amend Table 3.3 in Section 3 of the Environmental Report
Department of Arts, Heritage and Gaeltacht Affairs (DAHG).	Details of Codling Fault Zone SAC are now on www.npws.ie and information should be updated	An Addendum to the Environmental Report was prepared to address this issue, See Addendum 1 (March 2016)
Department of Arts, Heritage and Gaeltacht Affairs (DAHG).	To update section 4.14.1 to include the Bohernabreena reservoir.	An Addendum to the Environmental Report was prepared to address this issue, See Addendum 1 (March 2016) See Appendix 1. Section 4.
Department of Arts, Heritage and Gaeltacht Affairs (DAHG).	Section 8.3 to be updated to consider projects, and in particular ex-situ impact of a new water source from the River Shannon to be considered.	An Addendum to the Environmental Report was prepared to address this issue, See Addendum 1 (March 2016) It is acknowledged that there could be potential ex-situ impacts of a new water source from the River Shannon, but it should be noted that a separate SEA/EIA will be undertaken for any new water source that will deal with direct and indirect impacts. This is outside the DCC plan boundary.
Irish Water (IW)	IW state set out their objectives with regard to both drinking water and wastewater strategic infrastructure capacity. IW will endeavour to secure provision of the infrastructure necessary to support the evolving population changes and economic activity, subject to necessary capital investment. All capital investment beyond the Capital Investment Plan 2014-2016 is subject to the agreement fo the Commission for Energy Regulator (CER). IW is currently in the process	New text was added to Section 9.5, Section 9.5.1 Water Supply & Waste water, insert new text in 3rd paragraph (page 72 draft plan), ‘’Irish Water is preparing the next Investment Plan (2017-2021)’’.

	of preparing a submission to the CER on the National Investment programme for the next Investment Plan 2017-2021. IW welcomes the policies and objectives in relation to Water services in the draft plan.	

3.4 Material Amendments to the draft plan

The amendments were placed on public display for a further period of public consultation with the addendum to the Environmental Report and supporting environmental assessments from the 21st June 2016 until the 19th of July 2016. A total of 298 submissions/observations were received. As 2 of the submissions were received after the prescribed deadline they were excluded from further consideration. These included submissions from members of the public and statutory consultees. All submissions were summarised in the report by the Chief Executive dated August 2016. Some of the submissions raised issues of particular significance to the SEA and are detailed in **Table 3.3** below.

Only proposed material alterations which comprise or affect Plan Provisions e.g Policies and objectives come under the scope of this assessment. Changes to other parts of the plan (e.g text which sets out the context for policies and objectives but does not interact with these provisions) are not included within the scope of this assessment. The proposed material alterations which were considered include:

- Proposed changes to the Draft Provisions (eg. Policies and objectives)
- The proposed addition of a number of new plan provisions and
- Proposed changes to some of the draft plan maps.

The screening assessment comprised assessing each of the proposed amendments against the Environmental Protection Objectives to determine if they could have potentially positive, negative, uncertain or neutral impacts.

Based on the screening exercise, the Planning Authority determined in accordance with Section 12(7) (aa) of the Planning and Development Act 2000 (as amended) that the likely impacts of the environment of implementing the proposed material amendments would be either positive or neutral.

Table 3.3 Environmental Protection Objectives

Environmental Receptor	Environmental Protection Objective
Population & Human Health (PHH1)	To create a sustainable compact city and a high quality safe environment in which to live, work and/ or visit.
Biodiversity / flora & fauna	To protect and where appropriate, enhance the diversity of habitats, species, ecosystems and geological features.

(BFF1)	
Climatic Factors (CF1)	Contribute to the mitigation of/ and adaptation to climate change and implement requirements of Strategic Flood Risk assessment.
Air Quality (AQ1)	Minimise emission of pollutants to air associated with development activities and maintain acoustic quality.
Water (W1)	To protect and where necessary improve the quality and management of watercourses and groundwater, in compliance with the requirements of all water and habitat based legislation including the River Basin Management Plan of the Eastern River Basin District.
Material Assets (MA1)	To make best use of Dublin city's infrastructure and material assets and to promote the sustainable development of new infrastructure to meet the needs of the City's population
Cultural Heritage (CH1)	To protect and where appropriate enhance the character, diversity and qualities of Dublin city's cultural, including architectural and archaeological, heritage
Landscape and Soils (L1)	To protect and where appropriate enhance the character, diversity and special qualities of Dublin City's landscapes and soils and Geological features

Table 3.4 - Aspects of Submissions in Relation to SEA

Submission	**Aspects of Submissions in Relation to SEA and or policies/objectives**	**Response/Outcome**
Department of Arts, Heritage, Regional & Rural and Gaeltacht Affairs	The Department consider that some of the proposed amendments may have the potential to impact on the natural heritage. These include the proposed upgrading of bridges, the new objectives SIO12A for coastal defence works including Sandymount and Clontarf, and the Amendment to GI15 (ref. 10.6) it is unclear what the amendment to GI15 (including day lighting where safe and feasible) means exactly. Proposed amendment regarding bridges and GI15 have been deemed to have no significant impact on European sites (AA screening) and no impact on SEA. It would appear that SIO12A has not been assessed. Depending on the nature of the erosion protection there is a potential for a significant effect on European Sites and this issue needs to be screened for AA. In addition the AA will need to consider impacts on roosting and feeding areas for birds	In response to this , the Proposed Policy SIO12A was deleted, and a new policy was recommended after SI16, ''***SI16A To require an environmental assessment of all proposed flood protection or flood alleviation works***.'' With regard to the impact of bridges etc, an overriding statement has been put into the plan which will ensure that all developments relating to movement and transport infrastructure , including any new or upgrading of bridges, will be subject to Article 6 EU

	and impacts on annexed habitats. In combination effects of erosions protection need to be assessed. Any AA screening assessment made must include complete and precise findings and a conclusion capable of removing all reasonable scientific doubt as to the effect of the amendments proposed on qualifying interests on European Sites.	Habitats Directive Assessment to ensure that there are no likely impacts on the integrity of European sites. Wording of Policy GI15 was further amended, to include the sentence ‘***’opening up to daylight where safe and feasible”***
Environmental Protection Agency	The EPA submission notes that the proposed new objectives GIO18A in relation to the Local Authority implementing a Maintenance and improvement plan for the length of the RiverDodder. The plan should reflect the relevant recommendations of the Eastern Catchment Flood Risk Assessment and Management – CFRAMs and associated Unit of Measurement. There is merit in linking the environmental related aspects of the proposed environmental management plan for the Dodder to ensure a co-ordinated flood risk management approach.	It was recommended that Objective GIO18A be amended to insert new text at end to read ***‘’ This plan should reflect the relevant recommendations of the Eastern Catchment Flood Risk Assessment and Management and associated Unit of Measurement Flood Risk Management Plan(s) and associated Environmental Reports’’***
Environmental Protection Agency	The EPA welcome the proposed additional policy CEE13 (Reference number 6.3) which commits to supporting the preparation and implementation of a strategic regional tourism related plan for the Dublin City region. There is a need to ensure that development is closely linked to the ability to provide the necessary critical service infrastructures and also a need to ensure that the proposed plan will provide an appropriate level of protection to environmental sensitivities /vulnerabilities.	Material Amendment 2.3 requires that ‘***’All future development of the City will be carried out in accordance with the requirements of the Habitats, Birds, Water Framework, Floods, SEA and EIA Directives’’***
Environmental Protection Agency	The EPA note the additional amendments to the text in Section 8.3 Challenges (Reference number 8.3) There is also merit in acknowledging that the Department of Transport , Tourism and Sport is currently preparing the National Policy Framework for Alternative Fuels Infrastructure for the Transport Section (AFF) . In this regard the Plan should support where appropriate the relevant aspects of the AFF upon its finalisation.	Additional Text was inserted in Section 8.3 to read ‘’increasing significantly the existing mode share for active modes, i.e walking and cycling, and supporting the forthcoming National Policy Framework for Alternative Fuels Infrastructure. ‘’(See CE Report on Submissions Received on Proposed

		Amendments , P 34, August 2016)

3.5 SEA Assessment of the Proposed Modifications

Only proposed material alterations which comprise or affect Plan Provisions (e.g Policies, objectives come under the scope of this assessment. Changes to other parts of the plan (e.g text which sets out the context for policies and objectives but does not interact with these provisions) are not included within the scope of this assessment. The proposed material alterations which were considered include:

- Proposed changes to the Draft Provisions (eg. Policies and objectives)
- The proposed addition of a number of new plan provisions and
- Proposed changes to some of the draft plan maps.

The screening assessment comprised assessing each of the proposed amendments against the Environmental Protection Objectives to determine if they could have potentially positive, negative, uncertain or neutral impacts.

Based on the screening exercise, the Planning Authority determined in accordance with Section 12(7) (aa) of the Planning and Development Act 2000 (as amended) that the likely impacts of the environment of implementing the proposed material amendments would be either positive or neutral.

Section 4 Reasons for Choosing the Plan as Adopted

4.1 Introduction

This section of the Environmental Statement describes the different development scenarios that were assessed by Dublin City Council as part of the preparation of the Development Plan and the SEA process and the reasons for choosing the plan as adopted, in light of the reasonable alternatives dealt with in accordance with Article 9 of the Directive.

4.2 Context for considering Alternatives

Article 5 of the SEA Directive requires the environmental report to consider '*reasonable alternatives taking into account the objectives and the geographical scope of the plan or programme'* and the significant effects of the alternatives selected. Alternatives must be realistic and capable of implementation and should present a range of different approaches within the statutory and operational requirements.

The consideration of Development Plan alternatives is a real-world exercise that recognises that the plan must work within an existing context of National and Regional Strategic Plans, climate change, and an Irish and European legislative framework that has sustainable development at its core. It is not an '*open-book'* exercise, where every conceivable option/alternative is examined. Therefore, in selecting realistic alternatives that could be evaluated, '*no development'* was considered an unreasonable alternative, as it is unlikely to be delivered and would not reflect the statutory and operational requirements of the Development Plan.

The development of the alternatives for the new Development Plan included a workshop between the SEA team and the Development Plan team of Dublin City Council where the main strategic issues facing the City and potential development options/scenarios were discussed. A follow up meeting was also held.

4.3 Parameters for Proposed Alternatives

The parameters for the proposed alternatives have regard to the policies set out in the National Spatial Strategy and the Regional Planning Guidelines (RPGs) which recognise Dublin City's key role in the economic and social development of the state. It is noted that the Regional Planning Guidelines will be replaced by Regional Spatial and Economic Strategies (RSES) during the period of the new Development Plan. The new RSES will update population targets and will take into account the shortfall in targets in the region having regard to the sustained economic downturn during the period 2008-2013 (6 years) which straddled two Development Plan periods.

The Dublin City Development Plan 2016-2022 sets out a vision and overall strategy for the proper planning and sustainable development of the city for a six year period. It also sets out guiding policies and objectives for the development of the city in terms of its physical growth, economic, social and cultural activities and environmental protection and enhancement.

The core strategy of the existing Development Plan seeks to create a compact, quality, green, well-connected city with a mix of uses that generates real long-term economic recovery with sustainable neighbourhoods and socially inclusive communities. It establishes a spatial hierarchy for the city, which prioritises the inner city, key developing areas, key district centres, and strategic development and regeneration areas. The strategy seeks to: expand the city centre towards the Docklands, Heuston and Grangegorman; develop sustainable urban villages such as Rathmines and Crumlin; and make new developing / regeneration areas such as the North Fringe and Docklands.

4.4 Alternatives Considered for SEA

For the purposes of Dublin City Council's development plan review, three possible realistic alternatives were identified based on the overall strategy of gaining maximum benefit from existing assets, such as public transport social and green infrastructure. Other potential alternatives were considered which included a targeted review of residual Z9 lands (Amenity/Open Space Lands/Green Network) for potential residential use but was discounted from the outset as it was considered that these lands play an important role serving the City's recreational needs.

The possibility of rezoning some Z6 (Employment/Enterprise) lands for residential use close to public transport links and SDRAs, was also examined but was considered to be a longer term option(i.e., outside the scope of this City Plan period). Mindful of the objective to maintain a strong employment base within the city, the current Development Plan outlines that the Z6 (Employment/Enterprise) zoned lands constitute an important land bank for employment use in the city, which it is considered strategically important to protect.

It is preferable that potential alterations to land use zoning objectives are predicated on a proximity principle to public transport and existing social infrastructure (schools retail etc.). In addition to this, the strategy considered should be to appraise sites from a sequential perspective from areas identified in the core strategy which already have key social infrastructure in place. The development of such areas will ultimately underpin and make the best use of the substantial investment in social infrastructure throughout the city.

The following alternatives would all form part of the overall development strategy for the Development Plan. The emphasis is to accommodate potential future residential/commercial development at appropriate locations proximate to existing public transport corridors and to Key District Centres(and existing social/green infrastructure). The consideration of alternatives will also seek to protect strategic economic lands and green infrastructure and cultural heritage assets. The proposed alternatives are described in detail below.

4.5 Alternative 1 – Targeted Growth around existing identified growth centres

Description of Alternative

This alternative seeks to target and consolidate growth around the Z5 city-centre mixed use zoning area as well as existing identified growth centres such as the Key District Centres (KDCs), the Strategic Development and Regeneration Areas (SDRAs), the Strategic Development Zones (SDZ) and areas identified in Local Area Plans (LAPs). The Council would favour the development of vacant lands within the canal area of the city and to incentivise owners to redevelop these lands (such as through the '*New City Living Initiative*')

This alternative examines changing the wording of Z10 (Inner Suburban Sustainable Mixed-Use) land use areas to allow for residential as the prominent use outside the canals and more mixed use within the canals.

The Z10 zoning will read as follows:-

'To consolidate and facilitate the development of inner city and inner suburban sites for mixed-uses, - with residential the predominant use in inner suburban locations and office, retail and residential the predominant uses in inner city areas.'

Planning Considerations

This alternative approach is to develop the city in a planned and sustainable manner in order to ensure a balance between development and conservation/environmental protection. The approach takes a long-term vision to manage and plan for growth, in order to achieve long-term sustainability. This approach seeks to promote balanced and sustainable economic, social and cultural development to enable the city to fulfil its role as the key driver of economic growth for the state.

The existing Plan's Core Strategy remains robust and the intention is to strengthen and consolidate the robust city-centre mixed use zoning areas (Z5) with active promotion of the inner city as an attractive place for urban living, the delivery of housing regeneration projects, (to also include to incentivise the use of vacant sites which have been identified which account for 61.4 ha of land in the inner City). The Development Plan identifies a number of Strategic Development and Regeneration Areas in addition to the Inner City which represent significant areas of the inner and outer city with substantial development capacity and the potential to deliver the residential, employment and recreational needs of the city.

Key Developing areas or SDRAs for growth and infrastructure development and enhancement would continue be identified and promoted. Higher density development would be focussed into suitable strategic locations in the city such as SDZs. Areas for development/redevelopment would be identified to accommodate new urban development (such as vacant lands) and deliver the maximum quantitative efficiency of new population density and floorspace.

Economic and population growth in targeted strategic locations, such as Key Developing areas would be likely to safeguard the amenities and character of established residential areas and at the same time to facilitate the essential growth of the city in line with regional plans and forecasts.

Targeted growth at strategic locations throughout the city would benefit socially and economically deprived areas of the inner city where the need of access to services and employment is greatest, resulting in environmental improvements to these areas.

4.6 Alternative 2 – Market Led Growth

Description of Alternative

The approach of '*Alternative 2*' is to promote the development of the city in a market led manner, which would involve a dispersed model of spatial perspective throughout the city. The location, nature and density of new development in the city would be influenced primarily by market demand and driven by economic market forces. Higher intensity development would not necessarily take place within designated growth centres (SDRA's/KDCs) in close proximity to transportation nodes.

Sites of high-density development have the potential to be dispersed throughout the city irrespective of the prevailing architectural and residential character or environmental amenity of the surrounding area.

Planning Considerations

A *'market led'* approach would over time achieve consolidation, albeit in an ad hoc manner, and not necessarily in locations close to public transport or services. All areas of the city would be potentially available for increases in density, including the suburbs, outer city, open spaces, environmentally vulnerable areas etc. A more flexible, market-driven approach to developing the city would prevail with the majority of the city area available for higher-intensity development.

For the purposes of evaluation, the '*market led'* approach assumes that the areas proposed for development would occur on lands more distant from key services and in potential conflict with conservation areas.

Facilitating higher densities on all 'infill' and 'Brownfield' sites, throughout the City, would likely result in a dispersed pattern of settlement with sporadic pockets of high density development. The absence of a coherent spatial strategy for high density development would inhibit the development of an integrated high quality viable public transport system.

Speculative development pressure would most likely increase on inappropriate sites, including conservation areas, recreational and sporting facilities. The established character of the city including built and natural heritage assets has the potential to be undermined with detrimental results.

Sites of high-density development would be dispersed throughout the city irrespective of the prevailing architectural and residential character or environmental amenity of the surrounding area. This could result in adverse consequences such as physical and social infrastructural pressure, loss of environmental quality, natural/built heritage and architectural character and accelerated economic obsolescence. This approach would erode the character and quality of residential neighbourhood areas in the city.

4.7 Alternative 3 - Selected Concentration of growth targeted on existing SDRAs/KDC/SDZ areas – Elements of a phased approach to the development of land.

Description of Alternative

The third main alternative being considered by the Council is to allow for a selected concentration of growth targeted on existing areas within the SDRAs/KDCs/SDZ areas with a phased approach to delivery of development, such as between the Docklands SDZ and other areas outside the canal area.

Planning Considerations

The NSS places particular emphasis on the physical consolidation of the metropolitan area, which incorporates the entire functional area of Dublin City Council. This necessitates the sustainable development of all vacant and under-used lands with a focus on areas close to public transport corridors as well as areas of under-utilised physical and social infrastructure.

The phasing of the development of lands within the administrative area of Dublin City Council is not favoured as the lands within Dublin are considered to be the '*core area'* of the city region. As such it is not appropriate to impose phasing on the development of lands within Dublin City which are the key driver of economic growth within the state.

Any potential constraints in the KDCs could be resolved within the lifetime of the new City Plan and therefore it is not considered appropriate to artificially constrain development through the phasing of lands which may come on stream for development where identified constraints have been resolved.

It is also important that the Z5 City Centre lands are not given a lower preference in respect of development as they represent the core area of the city region.

All of the lands within Dublin City could be considered to be in a first phase of any development as all the land is considered to be of equal importance to the city in terms of creating sustainable communities etc.

Uncertainty in respect of phasing would lead to confusing signals to the market and the ability to deliver development at appropriate locations.

The settlement hierarchy and land use zoning approach reflects the over-arching objective to achieve sustainable development with mixed use neighbourhoods throughout the city in close proximity to employment, local services and high quality public transport in accordance with national and regional guidance.

4.8 *'Do-Nothing'* Scenario

The '*do-nothing'* scenario is not considered to be a reasonable alternative as the review of the existing, and the making of a new, development plan is required under planning legislation which is to be undertaken every 6 years.

4.9 Testing the Development Plan Alternatives

The three alternatives outlined above have been assessed against the set of Environmental Protection Objectives, as shown in **Table 4.1**.

Table 4.1 – Strategic Environmental Protection Objectives

Environmental Receptor	Environmental Protection Objectives (EPOs)
Population & Human Health **(PH1)**	To create a sustainable compact city and a high quality safe environment in which to live, work and/ or visit.
Biodiversity / flora & fauna **(BFF1)**	To protect and where appropriate, enhance the diversity of habitats, species, ecosystems and geological features.
Climatic Factors and Air Quality **(CF1)**	Contribute to the mitigation of/and adaptation to climate change and implement requirements of Strategic Flood Risk assessment.
Climatic Factors and Air Quality **(AQ1)**	Minimise emissions of pollutants to air associated with development activities and maintain acoustic quality.
Water **(W1)**	To protect and where necessary improve the quality and management of watercourses and groundwater, in compliance with the requirements of all water and habitat based legislation including the River Basin Management Plan of the Eastern River Basin District.
Material Assets **(MA1)**	To make best use of Dublin city's infrastructure and material assets and to promote the sustainable development of new infrastructure to meet the needs of the City's population
Cultural Heritage **(CH1)**	To protect and where appropriate enhance the character, diversity and qualities of Dublin city's cultural, including architectural and archaeological, heritage
Landscape and Soils **(L1)**	To protect and where appropriate enhance the character, diversity and special qualities of Dublin City's landscapes and soils

4.10 Alternative Assessment approach

The approach used for assessing the alternatives to the Development Plan is an objective led approach using assessment matrices, in line with current best practise for SEA. The assessment matrix tests whether the alternatives will have likely significant impacts (positive

and negative, direct and indirect, cumulative and synergistic) for the defined Strategic Environmental Protection Objectives as outlined in **Table 4.1** of the Environmental Report.

The assessment matrices contain a comparison of each of the alternatives against each of the Strategic Environmental Protection Objectives with an assessment rating assigned for the purposes of comparison. As outlined in the Environmental Report, a plus (+) indicates a potential positive impact, minus (-) indicates a potential negative impact, a (?) outlines that in the absence of further detail the impact is unclear, and a neutral or no impact is indicated by a zero (0). Combinations of these symbols are also possible, e.g. (+/-) indicates that both positive and negative impacts are likely or (0/-), which indicates that impact may be neutral or negative depending on how the policy or objective within the scenario is delivered. It should be noted that where impacts are increased, this increased level of impact has been recorded with double symbols, e.g. ++ or --.

4.11 Evaluation of Development Plan Alternatives

Table 4.2 below provides a summary overview of the assessment of each of the three Alternatives against the Environmental Protection Objectives.

Table 4. – Assessment of the Development Plan Alternatives

Environmental Protection Objectives (EPOs)	Alternative 1- Targets Growth around existing identified growth centres	Alternative 2 – Market Led Growth	Alternative 3 – Selected Concentration of growth targeted on existing SDRA/ KDC/SDZ areas – elements of a phased approach to the development of land
PH1	++	-	+ / -
BFF1	+ / -	-	+ / -
CF1	+ / 0	+ / -	+ / 0
AQ1	+	? / -	+ / -
W1	+ / -	-	+ / -
MA1	+	-	+ / -
CH1	+ / -	- / ?	- / ?
L1	+ / 0	-	+ / 0

Positive	Very Positive	Insignificant/ No impact	Negative	Very Negative	Uncertain
+	++	0	-	--	?

4.12 Reasons for choosing the draft plan in light of the other reasonable alternatives

Based on the assessment of the alternatives, it was concluded that Alternative 1, the Targeted Growth around existing identified growth centres scenario is the preferred scenario.

This alternative seeks to target and consolidate growth around the Z5 city-centre mixed use zoning area as well as existing identified growth centres such as the Key District Centres(KDCs), the SDRAs, the Strategic Development Zones and areas identified in Local Area Plans. The Council would favour the development of vacant lands within the canal area of the city and to incentivise owners to redevelop these lands. This alternative examines changing the wording of Z10 (Inner Suburban Sustainable Mixed-Use) land use areas to allow for residential as the prominent use outside the canals and more mixed use within the canals.

Economic and population growth in targeted strategic locations, such as key development areas would be likely to safeguard the amenities and character of established residential areas and at the same time to facilitate the essential growth of the city in line with regional plans and forecasts.

The alternative scenario are reasonably distinct and provide an overview of the options available in formulating and integrating the consideration of alternatives into the Core Strategy for the City Plan, having regard to national and regional plans. Having evaluated the alternative scenarios, the potential impacts of each are identified thus informing the selection of a preferred alternative for the City Development Plan.

Chapter 5 – Monitoring

5.1 Introduction

The SEA Directive requires that the significant environmental effects of the implementation of plans and programmes are monitored.

This section details the measures which will be used in order to monitor the likely significant effects of implementing the Plan. Monitoring can enable, at an early stage, the identification of unforeseen adverse effects and the undertaking of appropriate remedial action.

5.2 Indicators and Targets

Monitoring is based around indicators which allow quantitative measures or trends and progress over time relating to Strategic Environmental Objectives indentified in Table 4/1, and used in the evaluation. Each indicator to be monitored is accompanied by the target(s) which were identified with regard to the relevant strategic actions.

Table 5.1 sets out the Monitoring Programme including the targets, indicators and department responsible for carrying out the monitoring. The Monitoring programmes may be updated to deal with specific environmental issues inducing unforeseen effects as they arise. Such issues may be identified by the Council or identified to the Council by other agencies.

5.3 Data Sources

Measurements for indicators generally come from existing monitoring sources, such as those maintained by the Dublin City Council and other relevant authorities, eg. the Environmental Protection Agency (EPA), the National Parks and Wildlife Service (NPWS) and the Central Statistics Office (CSO). The Development Management process in Dublin City Council will provide passive monitoring of various indicators and targets as applications come in. In the case where significant effects, including positive, cumulative or indirect impacts have the potential to occur , i.e in the case of entries to the RMP, or RPS or impact on ecological networks for example, as a result of undertaking of individual projects, such instances should be indentified and recorded and should feed into the monitoring process.

5.4 Responsibility for and Frequency of Monitoring

Dublin City Council will be responsible for monitoring and reporting on feedback. The City Council will prepare a standalone Monitoring Report of implementing the Plan which will be prepared in advance of the review of the Plan.

Dublin City Council is responsible for the implementation of the SEA Monitoring Programme including:

- Linking SEA monitoring output with the mid-term review of the Development Plan
- Monitoring specific indicators and identifying any significant effects , including cumulative effects
- Reviewing the effectiveness of monitoring/mitigation measures during the lifetime of the Plan, and
- Identifying any cumulative effects

.

Table 5.1 Monitoring

Environmental Receptor	Environmental Protection Objective	Target	Indicator	Frequency of Reporting	Department Responsible
Population and Human Health	To create a sustainable compact city and a high quality healthy safe environment in which to live, work and/ or visit.	Sustainable densities achieved in new residential/ mixed use schemes	Average density of new residential development	Every 2 years	***Planning & Property, Development Department (PPDD)***
		Increase the number of residential properties	Percentage increase of residential properties	Every 2 years	(PPDD)
		Improved access to community and recreational facilities	Percentage increase in the number of schools/ creches/ community parks/ sports facilities and primary health centres	Every 2 years	(PPDD)
Biodiversity, Flora and Fauna	To protect and where appropriate, enhance the diversity of habitats, species, ecosystems and geological features.	Maintain the favourable conservation status of all habitats and species which are within designated sites protected under national and international legislation and also habitats and species	Number of developments granted planning permission within designated sites.	Every 2 years	(PPDD) Parks & Landscape Services
			Number of Natura Impact Statements submitted to Dublin City	Every 2 years	Parks & Landscape Services

Environmental Receptor	Environmental Protection Objective	Target	Indicator	Frequency of Reporting	Department Responsible
		outside of designated sites.	Council		
			Percentage increase or decrease of bat and otter populations in Dublin City	Every 2 years	Parks & Landscape Services
		Deliver the objectives of the ***Dublin City Biodiversity Action Plan 2015-2020***	Number of objectives/ policy actions delivered by the biodiversity plan	Every 2 years	Parks & Landscape Services
		Implementation of the actions from the green infrastructure strategy for Dublin City	Number of projects delivered by the green infrastructure strategy	Every 2 years	(PPDD) Parks & Landscape Services
			Totals of, or reduction in the quantum of greenfield lands; length of linked green corridors		(PPDD) Parks & Landscape Services
		Control and protect against the spread of noxious weeds and invasive species	Number of projects within the City that have identified noxious weeds and invasive	Every 2 years	(PPEEDD) Parks & Landscape Services

Environmental Receptor	Environmental Protection Objective	Target	Indicator	Frequency of Reporting	Department Responsible
			species		
		Achieve the objectives of the Tree Strategy and Canopy Survey for Dublin City	Percentage increase of tree planting within Dublin City	Every 2 years	(PPDD) Parks & Landscape Services
			Tree Canopy cover within the city area to contribute to carbon sequestration (no. of trees)	Every 2 years	Parks & Landscape Services
		Implementation of setback/ buffer zones of 10m for development along watercourses	Number of planning applications adhering to the 10m buffer zone setback	Every 2 years	(PPDD)
		Increased provision for soft landscaping in existing and new developments	Amount of open space provided in planning applications for Z10 and Z15 lands	Every 2 years	(PPDD)
Climatic Factors	Contribute to the mitigation of/ and adaptation to climate change and implement requirements of Strategic Flood Risk assessment.	Maintain air quality status and meet value targets for named pollutants in line with Air Quality Framework Directives	Values of monitored pollutants in the air, including the levels of Nitrogen Oxides (NO_x) and Particulate matter	Every 2 years	Roads & Traffic – Noise & Air Section

Environmental Receptor	Environmental Protection Objective	Target	Indicator	Frequency of Reporting	Department Responsible
Air Quality	Minimise emissions of pollutants to air associated with development activities and maintain acoustic quality.		(PM_{10}) not breach regulation limits		
		Decrease greenhouse gas emissions in line with national targets	Average energy consumption of new residential housing stock, tonnes of CO_2/ year	Every 2 years	Energy Division
		Increase energy efficiency (reduce energy waste) from renewable energy sources in line with the National Energy Efficiency Action Plan	Number of objectives implemented from Dublin City Energy Strategy	Every 2 years	Energy Division
			Number of permitted developments that include district heating	Every 2 years	Energy Division
			Number of permitted developments incorporating solar renewables	Every 2 years	Energy Division
			Number of (social) housing units, public buildings and community centres	Every 2 years	Energy Division

Environmental Receptor	Environmental Protection Objective	Target	Indicator	Frequency of Reporting	Department Responsible
			connected to district and group heating systems		
		Produce noise maps for Dublin City and ensure they are updated	Number of zonings that conflict in relation to acoustic increases	Every 2 years	Roads & Traffic – Noise & Air Section
		Increase modal shift to public transport, walking and cycling	Percentage / quantum of population travelling to work by public transport, walking and/ or cycling.	Every 2 years	Roads & Traffic
		Compliance with the requirements of the Development Plan's Strategic Flood Risk Assessment	Percentage of planning applications compliant with the SFRA	Every 2 years	Environment & Engineering – Water Division
		Compliance with the OPW's Guidelines for Planning Authorities – The Planning System and Flood Risk Management	Percentage of planning applications incorporating flood risk assessment and conditions requiring appropriate flood resilient measures for	Every 2 years	(PPDD) Environment & Engineering – Water Division

Environmental Receptor	Environmental Protection Objective	Target	Indicator	Frequency of Reporting	Department Responsible
			new developments		
		Implement Sustainable Urban Drainage Systems in all new developments	Number of Sustainable Urban Drainage Systems implemented in new planning applications	Every 2 years	(PPDD) Environment & Engineering – Water Division
Water	To protect and where necessary improve the quality and management of watercourses and groundwater, in compliance with the requirements of all water and habitat based legislation including the River Basin Management Plan of the Eastern River Basin District.	Achieve and maintain good status of all surface water bodies.	Improvement in Status of Water Body as per RBMP	Every 2 years	Environment & Engineering – Water Division
		All designated bathing waters to comply with the requirements of the Bathing Water Quality Regulations 2008 (S.I. 79 of 2008)	Bathing waters comply with requirements of Bathing Water Regulations	Every 2 years	Environment & Engineering – Water Division
		Identify and provide Surface Water pipelines as appropriate	Lengths of new Surface Water pipeline installed	Every 2 years	Environment & Engineering – Water Division
Material Assets	To make best use of Dublin city's infrastructure and material assets and to promote the sustainable development of new infrastructure to meet the needs of the City's population	Develop public transport, cycleways and road infrastructure to facilitate sustainable growth and travel patterns	Percentage change in commuting modal shift to sustainable travel modes	Every 2 years	Environment & Transportation
		Extend and improve the	Number of new cycling	Every 2	Environment &

Environmental Receptor	Environmental Protection Objective	Target	Indicator	Frequency of Reporting	Department Responsible
		cycling and walking network	and walking schemes implemented	years	Transportation
		Comply with the Eastern Midlands Waste Management Plan and operate sustainable waste management practices	Quantum of residential and commercial waste reused and recycled	Every 2 years	Engineering – Waste Management
		Protect and enhance green infrastructure	Number of greenfield sites developed	Every 2 years	(PPDD) Parks & Landscape Services
Cultural Heritage	To protect and where appropriate enhance the character, diversity and qualities of Dublin city's cultural, including architectural and archaeological, heritage	No loss or adverse impact on the fabric or setting of monuments on the Record of Monuments	Number of planning applications with archaeological conditions that were complied with	Every 2 years	(PPDD)
		No loss of or adverse impact on the architectural heritage value or setting of protected structures and monuments	Loss of, or adverse impact on protected structures, architectural conservation areas or NIAH structures	Every 2 years	(PPDD) City Architects - Conservation
			Number of archaeological sites	Every 2 years	(PPDD) City Architects -

Environmental Receptor	Environmental Protection Objective	Target	Indicator	Frequency of Reporting	Department Responsible
			with archaeological conditions attached		Conservation
		No loss of or adverse impact on structures recorded on the National Inventory of Architectural Heritage	Number of protected structures put at risk or on the derelict sites register	Every 2 years	(PPDD) City Architects - Conservation
		Revision of the Dublin Heritage Plan 2002-2006, to ensure enhancement of key sites	Number of conservation plans implemented through the Dublin Heritage Plan	Every 2 years	(PPDD) City Architects – Conservation City Archaeologist
			Number of proposed plans and schemes screened/ assessed by the Conservation Officer for the City and City Archaeologist	Every 2 years	(PPDD) City Architects – Conservation City Archaeologist
			Number of Architectural Conservation Areas designated	Every 2 years	(PPDD) City Architects - Conservation
Landscape and Soils	To protect and where appropriate enhance the character, diversity and special	Develop new areas of open space and increase number of trees	Number of new parks/ open spaces, change in area of the parks and	Every 2 years	(PPDD) Parks & Landscape

Environmental Receptor	Environmental Protection Objective	Target	Indicator	Frequency of Reporting	Department Responsible
	qualities of Dublin City's landscapes and soils and geological features		number of trees planted		Services
		Create a well-connected city landscape consisting of linear connections (e.g. river corridors and networks)	Length of existing and new linked landscape corridors	Every 2 years	(PPDD) Parks & Landscape Services
		Develop brownfield lands and vacant sites	Total area of brownfield lands and vacant sites developed	Every 2 years	(PPDD) Parks & Landscape Services

Appendix 1 Updates to the Environmental Report

The Environmental Report will be updated to take on board submissions from the Environmental Authorities. The Environmental Report will also be updated to contain the Final Set of policies and objectives. These may differ from the original draft Plan and Environmental Report, and also the numbering may have changes. This will have implications for other sections including Section 9 Mitigation. All updates to the Environmental Report will be shown in ***italic and bold font.***

- **Non Technical Summary**

Insert new section on Environmental Sensitivity Mapping and also to include the main Environmental Sensitivity maps (see maps 1- 10 below) in the Non – Technical Summary after Table 3, page 14.

Environmental Sensitivity Mapping

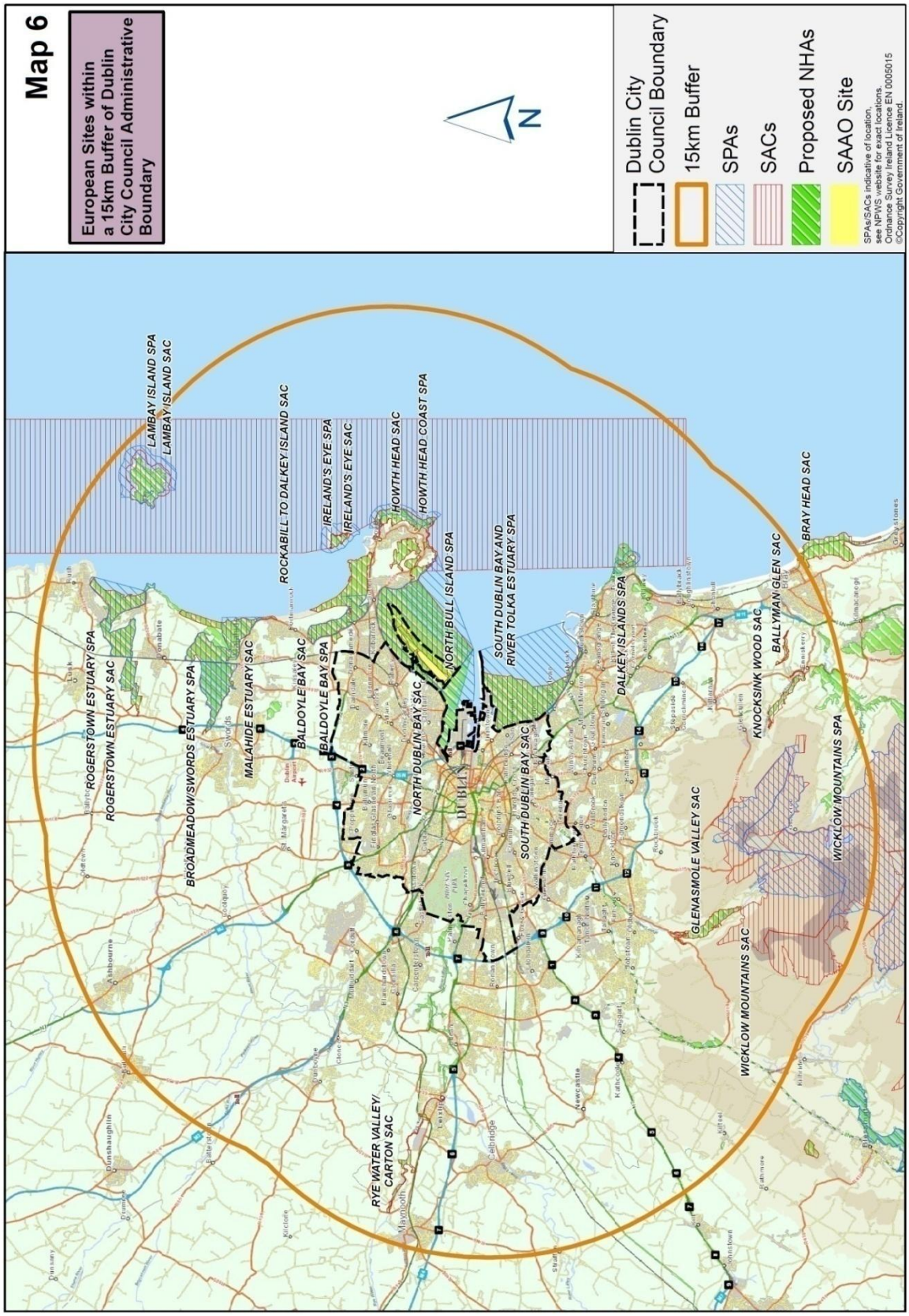
Environmental sensitivity mapping is a useful tool for identifying at a strategic level (in this case at the extent of a capital city) environmentally sensitive areas. Such sensitivity mapping can be seen as being based on the principles of SEA by presenting a visual overview of the relative sensitivity of areas, particularly where they overlap, in order to provide a more strategic and informed approach to planning and the selection of alternatives; sensitive environmental receptors have less capacity to absorb changes to their conditions. An Environmental Sensitivity Map (ESM) has thus been compiled for the Dublin City County administrative area.

The environmental factors which have been considered in compiling the ESM for Dublin City are summarised below and cover a range of categories from biodiversity and water to landscape and cultural heritage:

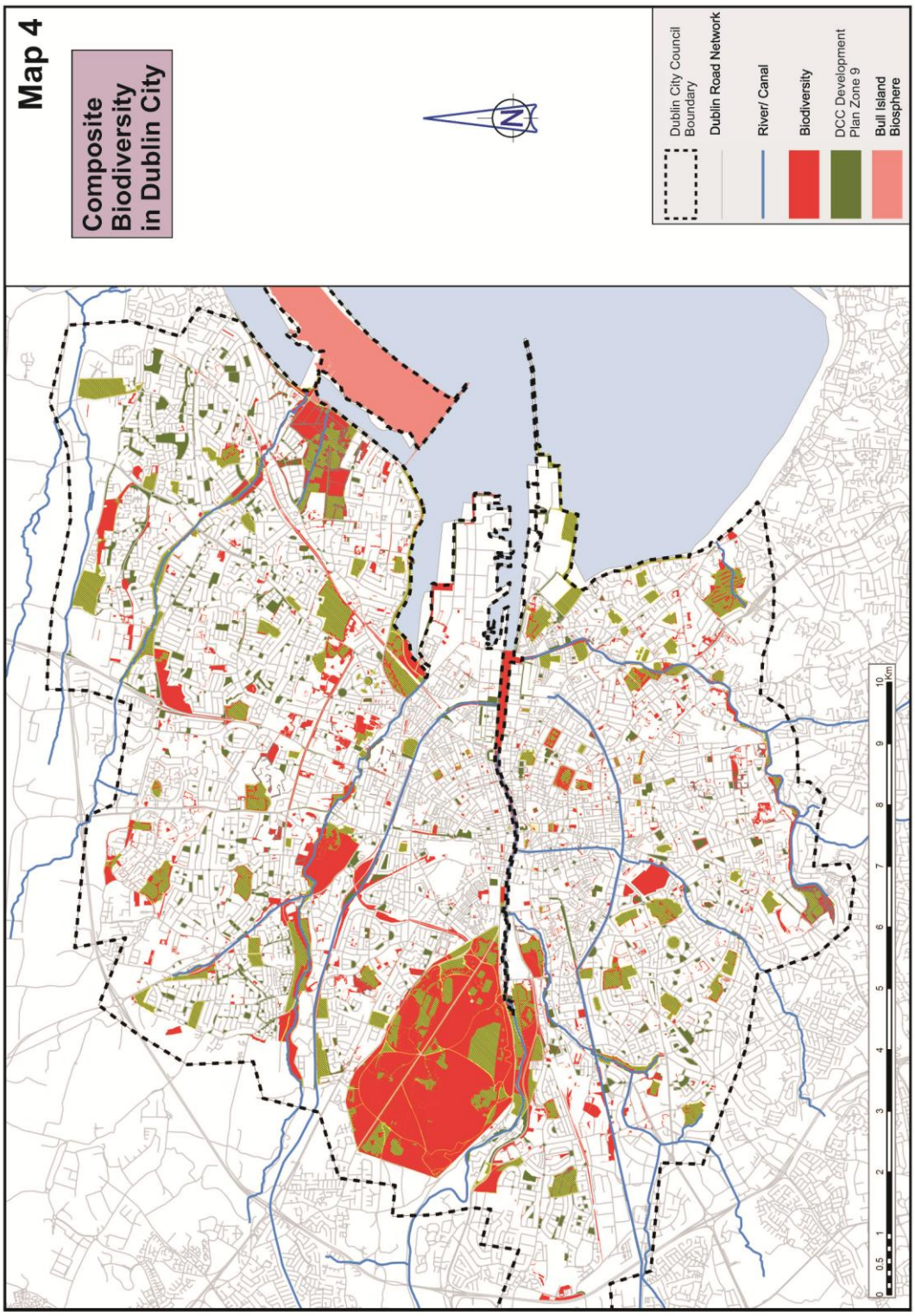
- ***European ecological designations including Special Areas of Conservation (SACs) and Special Protection Areas (SPAs);***
- ***National ecological designations such as proposed Natural Heritage Areas (pNHAs);***
- ***Dublin City Parks Biodiversity Survey and habitat mapping;***
- ***Tree preservation orders (TPOs);***
- ***Rivers and canals;***
- ***Flood zone ('A' and 'B') extents;***
- ***Water quality and groundwater vulnerability;***
- ***WFD Register of Protected Areas;***
- ***Special Amenity areas and parks/open spaces;***
- ***Record of Monuments and Places (RMP);***
- ***Architectural Conservation Areas (ACAs); and***
- ***Geological Heritage Areas (GHAs) and County Geological Sites (CGCs).***

A number of these sensitivities were mapped (see Maps 1- 9 below). The environmental factors above were assigned to a weighting category of High, Medium or Low. The weighted data was brought in to a geographic information system (GIS) to allow spatial overlay and calculation of the overall sensitivity. The colour scheme gives an indication of the relative sensitivity of the environment with darker red indicating high sensitivity and greys representing areas better able to absorb change. While it is acknowledged that there are limitations and an element of subjectivity to ESM, where there is a concentration of sensitive areas or overlap it becomes readily apparent where increased development in such areas could cause deterioration of the environment without appropriate mitigation measures being taken. (See Map 10 below)

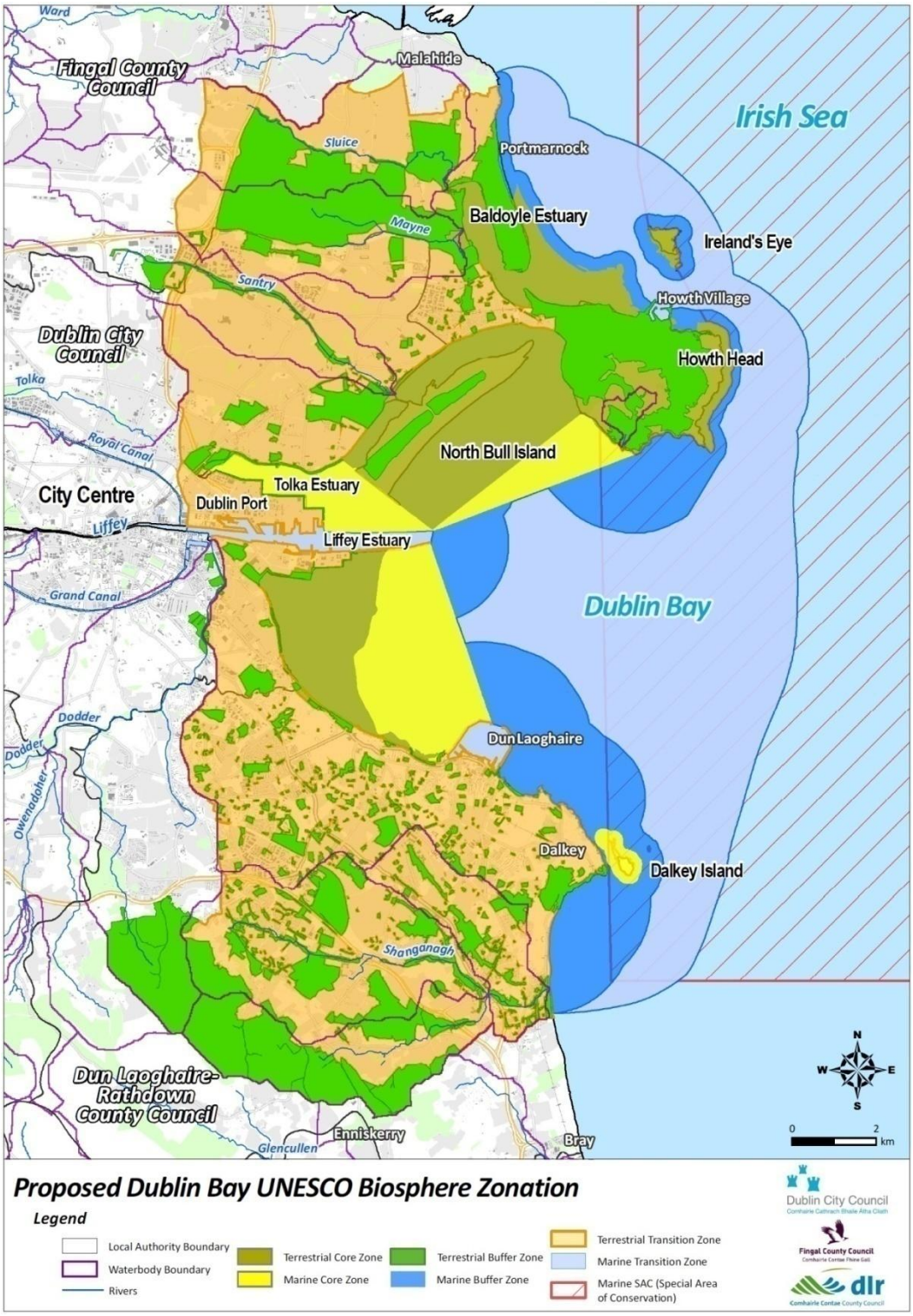
Map 1: European Sites within a 15km Buffer of Dublin City Council Administrative Area



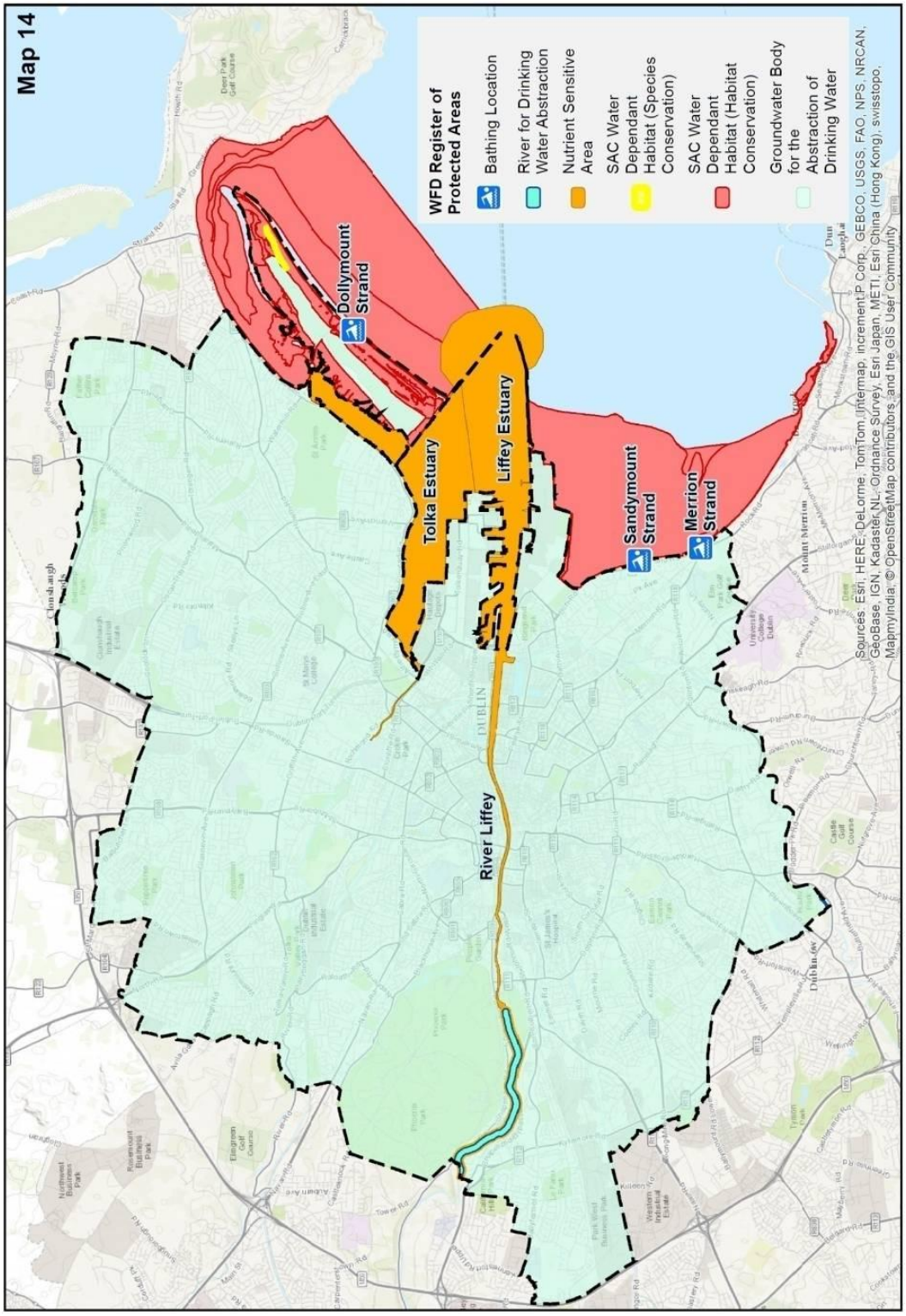
Map 2: Composite Biodiversity Map



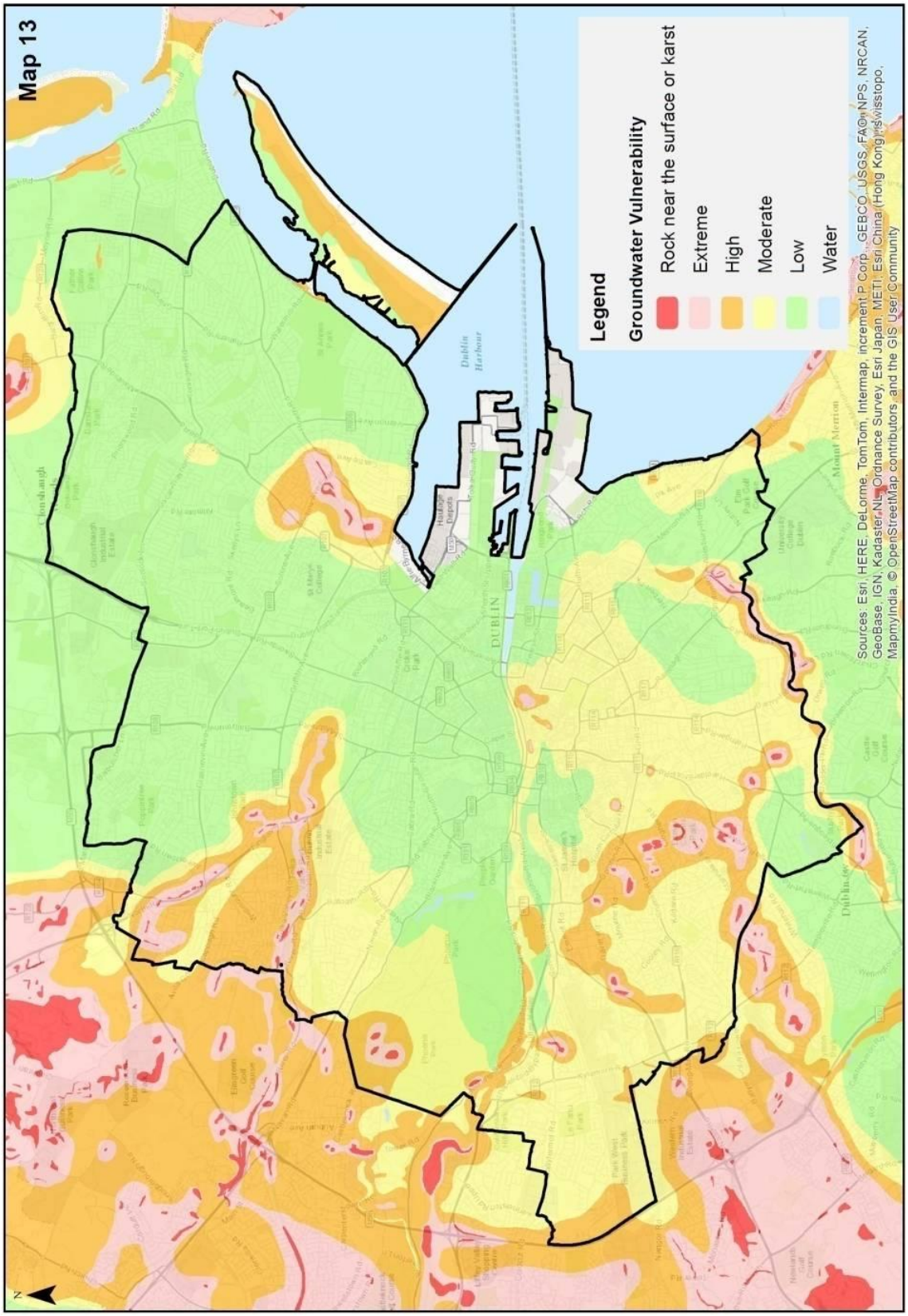
Map 3: Proposed Dublin Bay UNESCO Biosphere Zonation



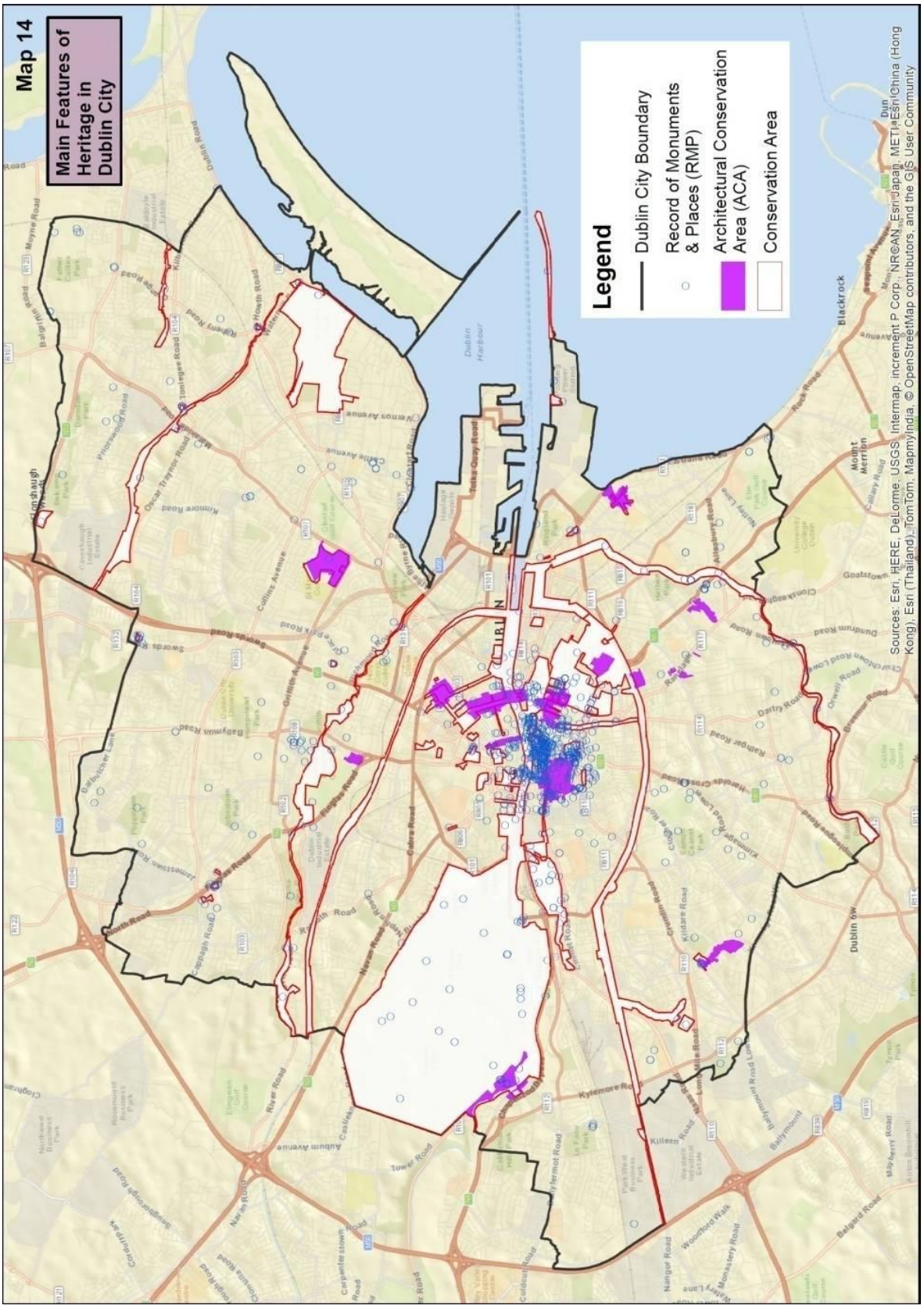
Map 4 WFD Register of Protected Areas



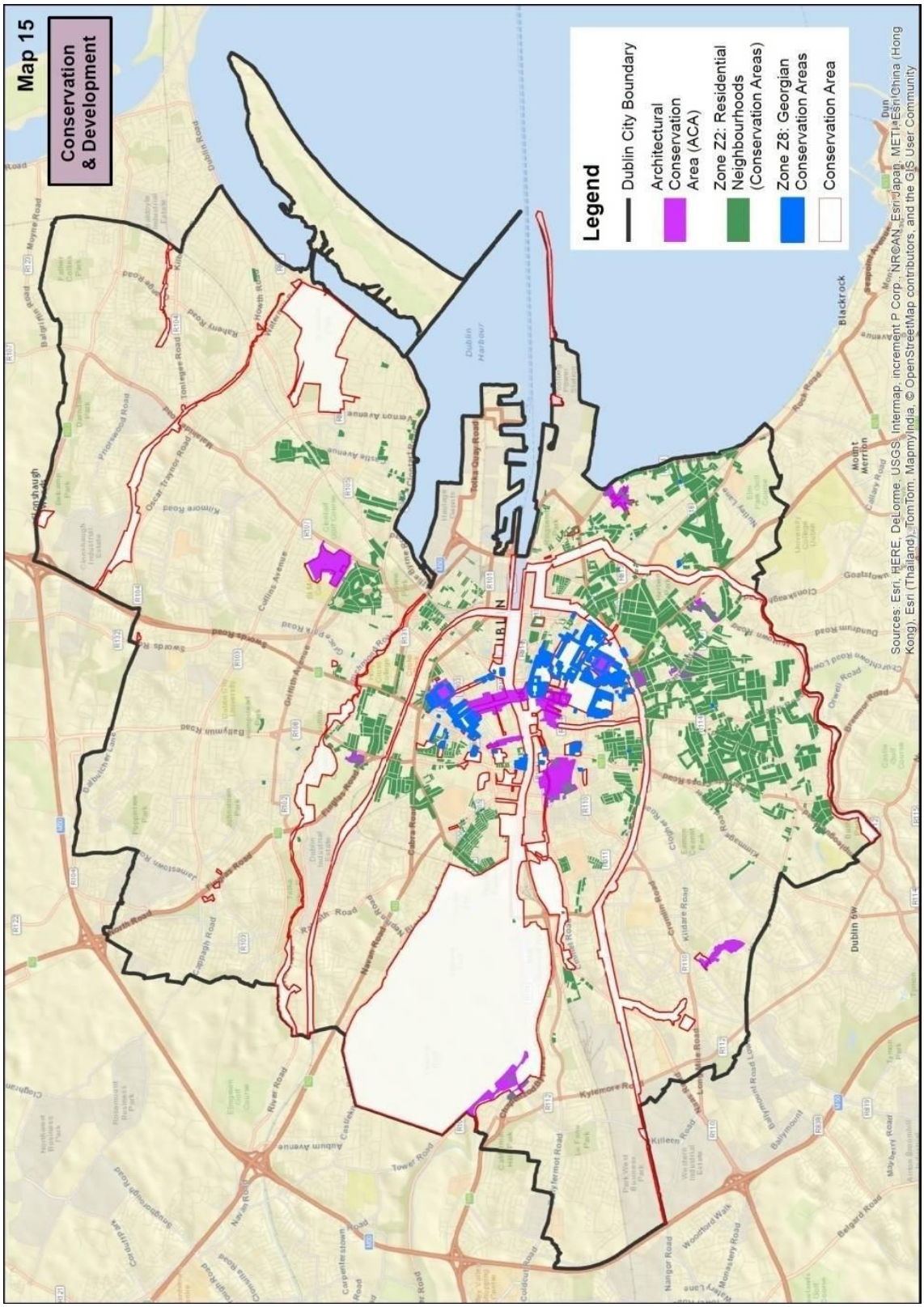
Map 5 Groundwater Vulnerability



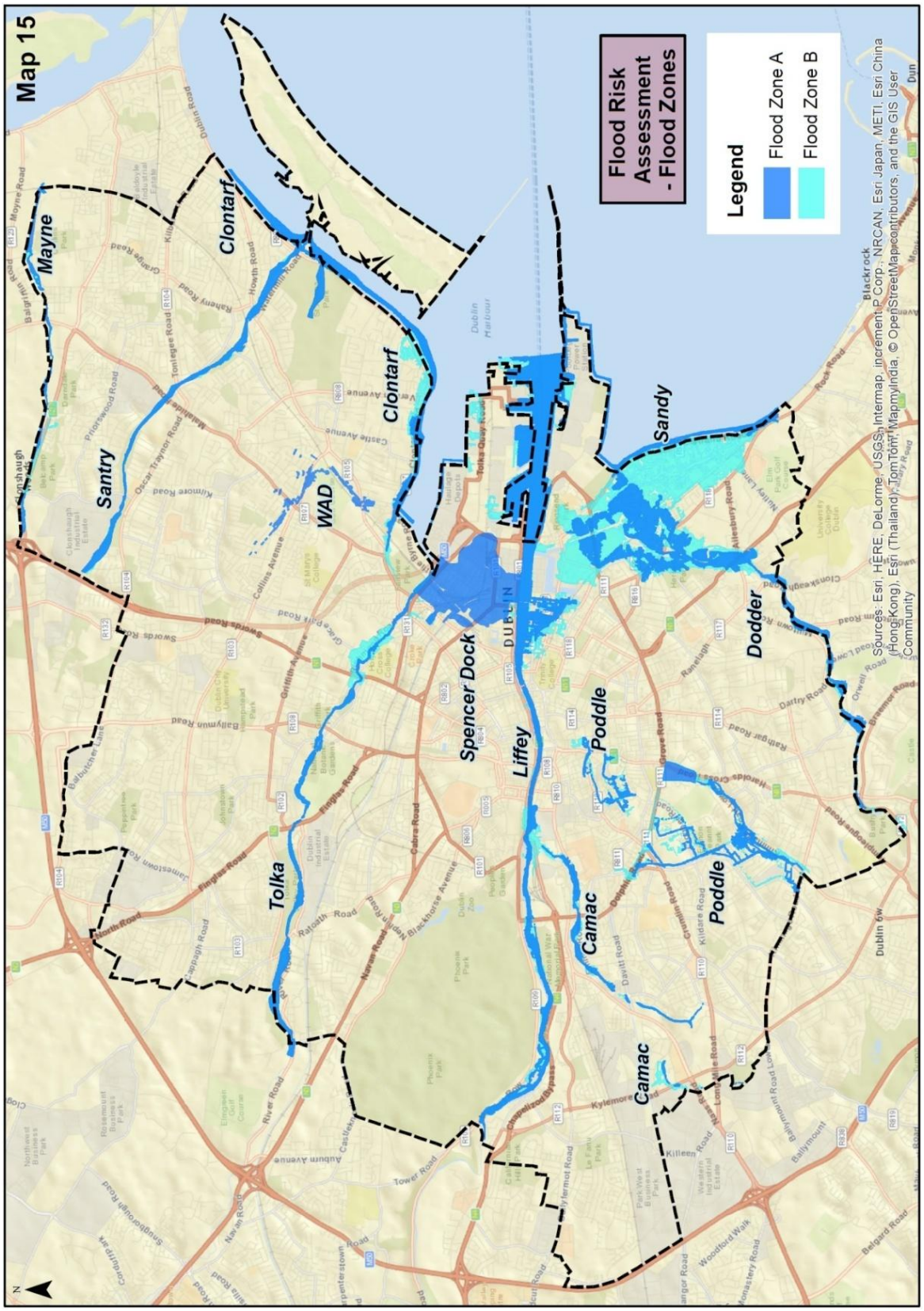
Map 6: Cultural Heritage including Archaeology & Architectural Heritage



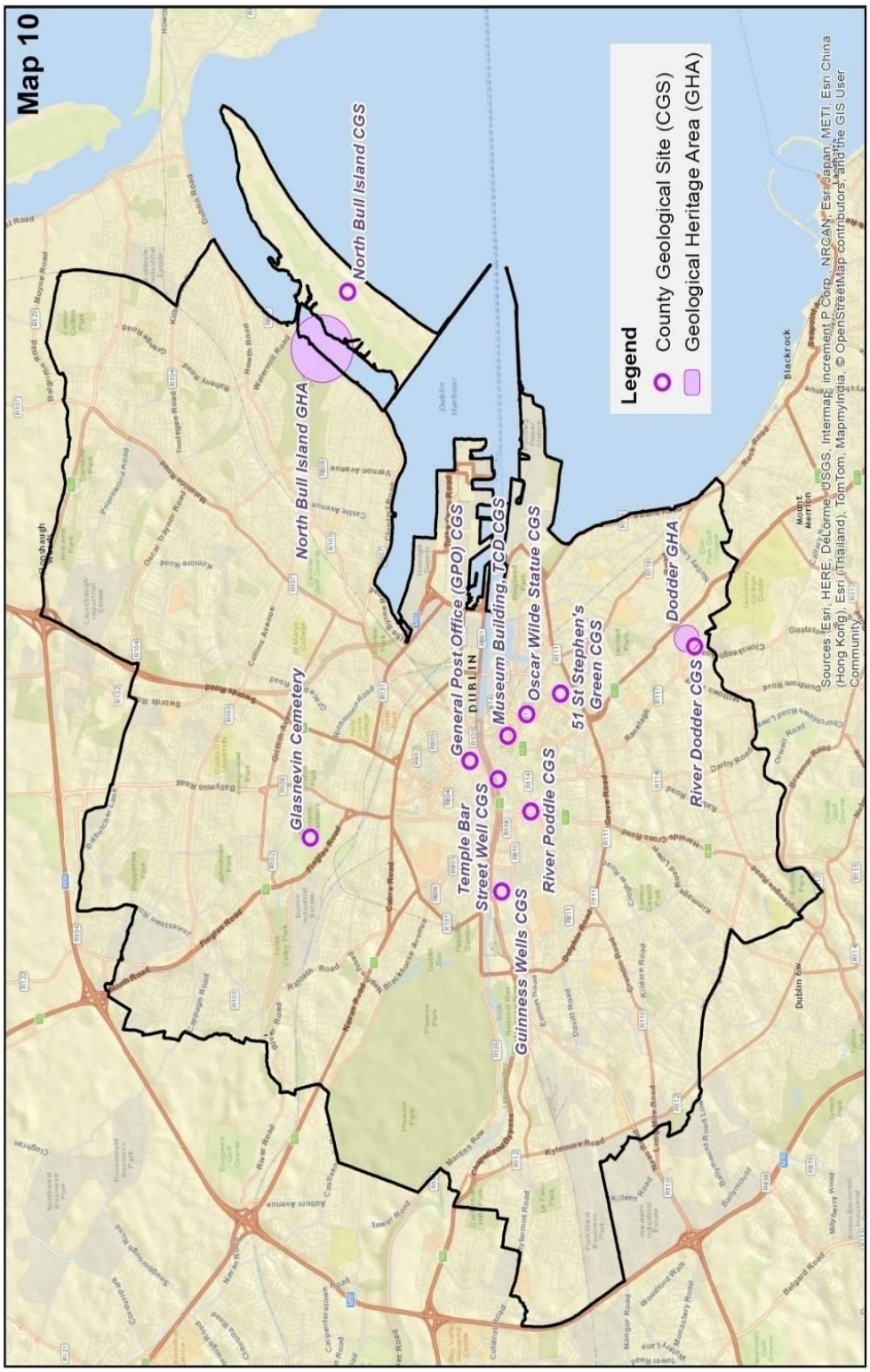
Map 7: Conservation & Development



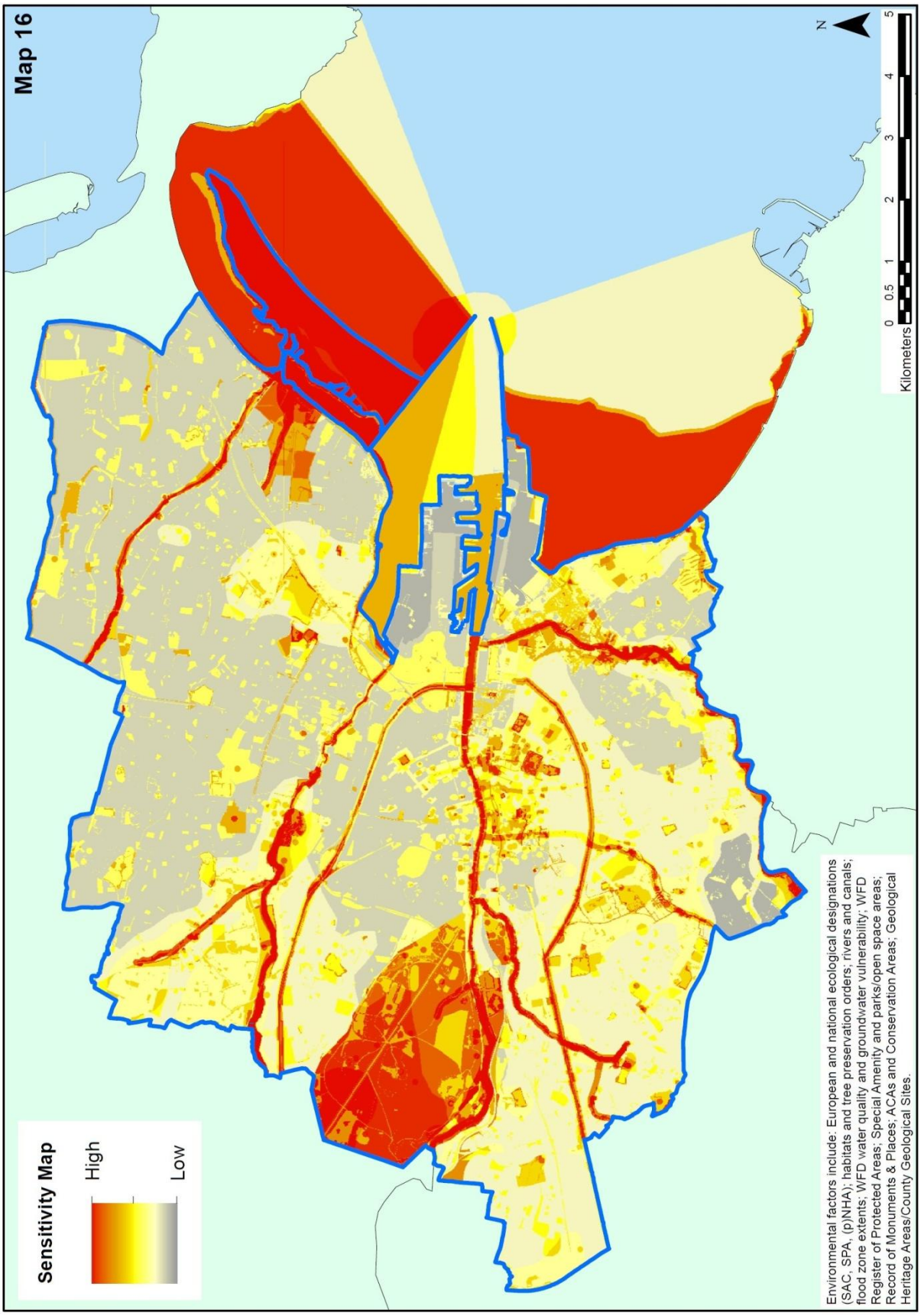
Map 8: Flood Zones



Map 9: Location of Geological Heritage in Dublin City



Map 10: Sensitivity Map



- **Non Technical Summary**

New Section to be included in Non Technical Summary. Insert Table 7 which shows key mitigation policies included in the Plan to offset any potential impacts on policies and objectives. This table is to be amended to take on board any additional policies that were put into the plan and also any updates to numbering of policies. This table was updated to take on board all the high level policies that have been put into the plan with new/revised numbering.

Table 7 below identifies the key mitigation measures which have been integrated into the Plan in response to the likely significant environmental effect which would occur as a result of Plan implementation in the absence of mitigation. The integration of these measures into the Plan occurred over a number of iterations and was informed by various communications through the SEA process with the Development Plan team who would put upfront mitigation policies/objectives into the plan.

Table 7 Key Mitigation Measures

Potential Significant Impacts if unmitigated	*Environmental considerations that have been integrated into the Plan.*
1.Increase in the number of flood events due to increased development pressure on the land, and hard surfacing areas of the City.	***CC1: Policy to prioritise measures to address climate change*** ***CC5: Policy to address flood risk at strategic level through the process of strategic flood risk assessment, and through improvements to the city's flood defences*** ***SI8: Policy to mitigate the effects of floods and droughts*** ***SI9: Policy to develop catchment based Flood Risk Management Plans for rivers, coastlines and estuaries.*** ***SI10: Policy to have regard to the Flood Risk Management Guidelines*** ***SI11: Policy to protect integrity of Flood Defence Infrastructure*** ***SI12:Policy to comply with the Strategic Flood Risk Assessment*** ***SI13: Policy regarding Basements and Flooding*** ***SI14: Policy to protect coastline from flooding*** ***SI15: Policy to minimise the risk of pluvial flooding*** ***SI16: Policy to minimise flood risk from all other sources*** ***SI17: Policy to require an environmental assessment of al proposed flood protection or flood alleviation works*** ***SI18: Policy regarding use of SUDS*** ***GI2: Policy requiring AA screening for plans/projects*** ***GI4: Policy regarding GI and flooding*** ***GI9:Policy regarding multifunctional role of GI including Urban drainage and flood management*** ***Objectives (SIO8, SIO9, SIO10, SIO11, SIO12, SIO13, SIO14, GIO28,GIO29)***
2. Failure to tackle climate change and emissions from transport and issues regarding climate change.	***CC1: Policy address climate change*** ***CC2: Policy to mitigate the impacts of climate change*** ***CC3: Policy to promote energy efficiency*** ***CC5: Policy to address flood risk at strategic level*** ***SI8:Policy to mitigate the effects of floods and droughts*** ***GI9: Policy to integrate open space into the GI network for the city, providing multifunctional role including drainage, flood management, biodiversity, outdoor recreation , and carbon absorption.***

	MT2: Policy to promote modal shift from private car to more sustainable transport modes
3. Loss of biodiversity with regard to European Sites and Annexed habitats and species & loss of biodiversity to designated sites including wildlife sties and listed species.	***GI1: Policy to develop a green infrastructure network through the city thereby interconnecting strategic natural and semi natural areas etc*** ***GI2: Policy requiring AA screening for Plans and Projects.*** ***GI3: Policy to develop linear parks, particularly along waterways.*** ***GI6: :Policy to support and implement the objectives of the National Landscape Strategy*** ***GI7. Policy to protect landscapes including existing green spaces*** ***GI9: Policy to integrate open space into the GI network for the city,providing multifunctional role including drainage, flood management, biodiversity, outdoor recreation , and carbon absorption.*** ***GI10. Policy to protect/enhance public open spaces*** ***G11: Policy to seek provision of additional spaces in areas deficient such as pocket parks or development of institutional land*** ***GI14: To promote development of soft landscaping and SUDS*** ***GI15. Policy to protect character of watercourses in the city*** ***GI16: Policy to improve the natural character and ecological value of all rivers*** ***GI17: Policy to develop sustainable coastal , estuarine , canal and riverine recreational amenities*** ***GI19: Policy to promote coordinated approach to the management of Dublin Bay*** ***GI21:Polciy to reduce marine pollution in Dublin Bay*** ***GI23: Policy to protect flora, fauna and habitats,*** ***GI24: Policy to conserve and manage all NHAs, SACs and SPAs,*** ***GI25:Policy regarding habitat creation/maintenance And facilitate biodiversity*** ***GI26:Policy regarding non designated areas of ecological importance*** ***GI28: Policy to support implementation of the Dublin City Tree Strategy*** ***GI29: Policy to adopt proactive approach to tree management*** ***GI30: Policy to encourage more tree planting***
4. Short Term impacts as a result of construction work on noise and air quality in the City.	***SI24: Policy to monitor and improve air quality*** ***SI25: Policy to preserve and maintain air and noise quality*** ***Objectives(SIO20, SIO21, SIO22, SIO23, SIO24, SIO25, SIO26, SIO27, SIO28, SIO29)***
5. Potential adverse impact on quality and status of water bodies.	***SI4: Policy to promote and maintain good status in water bodies*** ***SI5:Policy regarding enhancement of aquatic ecosystems*** ***SI6: Policy to protect aquatic environment*** ***SI7: Policy to reduce pollution of groundwater*** ***GI15. Policy to maintain and improve character and of watercourses in the city*** ***GI16: Policy to protect the character and ecological value ofall rivers within DCC*** ***GI19 : To ensure co-ordinated approach to management of Dublin Bay.*** ***GI20. Policy for improvement of water quality, bathing***

	facilities and other recreational opportunities in the coastal, estuarine and surface waters ***GI21. Policy to reduce marine pollution in Dublin Bay***
5.Limitations of Wastewater Treatment Facility at Ringsend which could lead to deterioration of water based habitats and species and to the quality of water.	***SI1: Policy to support Irish Water: provision of high quality drinking water & waste water treatment facilities*** ***SI2: Policy to support Irish Water in upgrading of wastewater infrastructure & Greater Dublin Regional Wastewater Treatment Plant,& Marine Outfall and orbital sewer*** ***SI3: Policy to ensure development is permitted in tandem with available water supply and wastewater treatment***
6. Failure to comply with the drinking water regulations and to provide new development with a clean water supply	***SI1: Policy to support Irish Water: provision of high quality drinking water & waste water treatment facilities*** ***SI2: Policy to support Irish Water in upgrading of wastewater infrastructure & Greater Dublin Regional Wastewater Treatment Plant,& Marine Outfall and orbital sewer*** ***SI3: Policy to ensure development is permitted in tandem with available water supply and wastewater treatment***
7. Increase in waste levels	***SI19: Policy to support good waste management*** ***SI20: Policy regarding material sorting/recycling*** ***SI21: Policy to minimise amount of waste*** ***SI22: Policy regarding polluter pays principle*** ***Objectives(SIO15, SIO16, SIO17, SIO18, SIO19)***
8. Effects on entries to the record of Projected Monuments and Places and other archaeological heritage.	***CHC9:Policy to protect and preserve National Monuments*** ***CHC10:Objective to implement archaeological actions of Dublin City Heritage Plan 2002-6, in light of the review 2012*** ***CHC15: Policy to preserve historic elements of significance in the public realm***
9.Effects on entries to the Record of Protected Structures.	***CHC1: Policy to seek the preservation of the built heritage of the city etc*** ***CHC2: Policy to ensure that the special interest of protected structures is protected.*** ***CHC3: Policy to identify and protect exceptional buildings of late 20th Century*** ***CHC4: Policy To protect the special interest and character of Dublin's Conservation Areas.*** ***CHC5: Policy to protect Protected Structures and preserve the character and the setting of Architectural Conservation Areas.*** ***CHC6: Policy to ensure a sustainable future for historic and other buildings subject to heritage protection***
10.Potential adverse impacts arising from visual impacts on the landscape	***SC16: Policy to recognise Dublin as predominately low rise whilst also recognising the potential and need for taller buildings in a limited number of locations*** ***SC17: Policy to protect skyline of the inner city*** ***SC18: Policy regarding provision of tall buildings*** ***GI7. Policy to protect landscapes*** ***GI8. Policy regarding views and prospects in relation to Landscape and natural heritage*** ***Objective GIO8: to undertake a views and prospects study to Identify key views and prospects of the city.*** ***Objective SCO4 : to undertake a views and prospects study.***

- **Non Technical Summary**

To amend Table 6 page 17 of the Environmental Report (now Table 8) in the Non Technical Summary of the Environmental Report: to give correct reference to the Dublin City Biodiversity Action Plan.

Amend text as follows:

'***to the Deliver the objectives of the Dublin City Biodiversity Action Plan 2015-2020'***

- **Non Technical Summary**

Insert New Table in Non Technical Summary to show Monitoring Table.

Insert **Table 8** at end of Section on Monitoring to include Monitoring Table, and new text. Also to update Monitoring Table to take on board new name of Planning and Property Development Department (PPDD) and also to update the reference to the current 'Biodiversity Action Plan 2015-2020'.

Table 8: Selected Indicators, Targets and Monitoring Sources

Environmental Receptor	Environmental Protection Objective	Target	Indicator	Frequency of Reporting	Department Responsible
Population and Human Health	To create a sustainable compact city and a high quality healthy safe environment in which to live, work and/ or visit.	Sustainable densities achieved in new residential/ mixed use schemes	Average density of new residential development	Every 2 years	Planning and Property Development Department (PPDD)
		Increase the number of residential properties	Percentage increase of residential properties	Every 2 years	(PPDD)
		Improved access to community and recreational facilities	Percentage increase in the number of schools/ creches/ community parks/ sports facilities and primary health centres	Every 2 years	(PPDD)
Biodiversity, Flora and Fauna	To protect and where appropriate, enhance the diversity of habitats, species, ecosystems and geological features.	Maintain the favourable conservation status of all habitats and species which are within designated sites protected under national and international legislation and also habitats and species	Number of developments granted planning permission within designated sites.	Every 2 years	(PPDD) Parks & Landscape Services
			Number of Natura Impact Statements submitted to Dublin City	Every 2 years	Parks & Landscape Services

Environmental Receptor	Environmental Protection Objective	Target	Indicator	Frequency of Reporting	Department Responsible
		outside of designated sites.	Council		
			Percentage increase or decrease of bat and otter populations in Dublin City	Every 2 years	Parks & Landscape Services
		Deliver the objectives of the Dublin City Biodiversity Action Plan 2015-2020	Number of objectives/ policy actions delivered by the biodiversity plan	Every 2 years	Parks & Landscape Services
		Implementation of the actions from the green infrastructure strategy for Dublin City	Number of projects delivered by the green infrastructure strategy	Every 2 years	(PPDD) Parks & Landscape Services
			Totals of, or reduction in the quantum of greenfield lands; length of linked green corridors		(PPDD) Parks & Landscape Services
		Control and protect against the spread of noxious weeds and invasive species	Number of projects within the City that have identified noxious weeds and invasive species	Every 2 years	(PPDD) Parks & Landscape Services

Environmental Receptor	Environmental Protection Objective	Target	Indicator	Frequency of Reporting	Department Responsible
		Achieve the objectives of the Tree Strategy and Canopy Survey for Dublin City	Percentage increase of tree planting within Dublin City	Every 2 years	(PPDD) Parks & Landscape Services
			Tree Canopy cover within the city area to contribute to carbon sequestration (no. of trees)	Every 2 years	Parks & Landscape Services
		Implementation of setback/ buffer zones of 10m for development along watercourses	Number of planning applications adhering to the 10m buffer zone setback	Every 2 years	(PPDD)
		Increased provision for soft landscaping in existing and new developments	Amount of open space provided in planning applications for Z10 and Z15 lands	Every 2 years	(PPDD)
Climatic Factors	Contribute to the mitigation of/ and adaptation to climate change and implement requirements of Strategic Flood Risk assessment.	Maintain air quality status and meet value targets for named pollutants in line with Air Quality Framework Directives	Values of monitored pollutants in the air, including the levels of Nitrogen Oxides (NO_x) and Particulate matter (PM_{10}) not breach	Every 2 years	Roads & Traffic – Noise & Air Section

Environmental Receptor	Environmental Protection Objective	Target	Indicator	Frequency of Reporting	Department Responsible
Air Quality	Minimise emissions of pollutants to air associated with development activities and maintain acoustic quality.		regulation limits		
		Decrease greenhouse gas emissions in line with national targets	Average energy consumption of new residential housing stock, tonnes of CO_2/ year	Every 2 years	Energy Division
		Increase energy efficiency (reduce energy waste) from renewable energy sources in line with the National Energy Efficiency Action Plan	Number of objectives implemented from Dublin City Energy Strategy	Every 2 years	Energy Division
			Number of permitted developments that include district heating	Every 2 years	Energy Division
			Number of permitted developments incorporating solar renewables	Every 2 years	Energy Division
			Number of (social) housing units, public buildings and community centres connected to district	Every 2 years	Energy Division

Environmental Receptor	Environmental Protection Objective	Target	Indicator	Frequency of Reporting	Department Responsible
			and group heating systems		
		Produce noise maps for Dublin City and ensure they are updated	Number of zonings that conflict in relation to acoustic increases	Every 2 years	Roads & Traffic – Noise & Air Section
		Increase modal shift to public transport, walking and cycling	Percentage / quantum of population travelling to work by public transport, walking and/ or cycling.	Every 2 years	Roads & Traffic
		Compliance with the requirements of the Development Plan's Strategic Flood Risk Assessment	Percentage of planning applications compliant with the SFRA	Every 2 years	(PPDD) Environment & Engineering – Water Division
		Compliance with the OPW's Guidelines for Planning Authorities – The Planning System and Flood Risk Management	Percentage of planning applications incorporating flood risk assessment and conditions requiring appropriate flood resilient measures for new developments	Every 2 years	(PPDD) Environment & Engineering – Water Division

Environmental Receptor	Environmental Protection Objective	Target	Indicator	Frequency of Reporting	Department Responsible
		Implement Sustainable Urban Drainage Systems in all new developments	Number of Sustainable Urban Drainage Systems implemented in new planning applications	Every 2 years	(PPDD) Environment & Engineering – Water Division
Water	To protect and where necessary improve the quality and management of watercourses and groundwater, in compliance with the requirements of all water and habitat based legislation including the River Basin Management Plan of the Eastern River Basin District.	Achieve and maintain good status of all surface water bodies.	Improvement in Status of Water Body as per RBMP	Every 2 years	Environment & Engineering – Water Division
		All designated bathing waters to comply with the requirements of the Bathing Water Quality Regulations 2008 (S.I. 79 of 2008)	Bathing waters comply with requirements of Bathing Water Regulations	Every 2 years	Environment & Engineering – Water Division
		Identify and provide Surface Water pipelines as appropriate	Lengths of new Surface Water pipeline installed	Every 2 years	Environment & Engineering – Water Division
Material Assets	To make best use of Dublin city's infrastructure and material assets and to promote the sustainable development of new infrastructure to meet the needs of the City's population	Develop public transport, cycleways and road infrastructure to facilitate sustainable growth and travel patterns	Percentage change in commuting modal shift to sustainable travel modes	Every 2 years	Environment & Transportation
		Extend and improve the cycling and walking network	Number of new cycling and walking schemes	Every 2 years	Environment & Transportation

Environmental Receptor	Environmental Protection Objective	Target	Indicator	Frequency of Reporting	Department Responsible
			implemented		
		Comply with the Eastern Midlands Waste Management Plan and operate sustainable waste management practices	Quantum of residential and commercial waste reused and recycled	Every 2 years	Engineering – Waste Management
		Protect and enhance green infrastructure	Number of greenfield sites developed	Every 2 years	(PPDD) Parks & Landscape Services
Cultural Heritage	To protect and where appropriate enhance the character, diversity and qualities of Dublin city's cultural, including architectural and archaeological, heritage	No loss or adverse impact on the fabric or setting of monuments on the Record of Monuments	Number of planning applications with archaeological conditions that were complied with	Every 2 years	(PPDD)
		No loss of or adverse impact on the architectural heritage value or setting of protected structures and monuments	Loss of, or adverse impact on protected structures, architectural conservation areas or NIAH structures	Every 2 years	(PPDD) City Architects - Conservation
			Number of archaeological sites with archaeological	Every 2 years	(PPDD) City Architects - Conservation

Environmental Receptor	Environmental Protection Objective	Target	Indicator	Frequency of Reporting	Department Responsible
			conditions attached		
		No loss of or adverse impact on structures recorded on the National Inventory of Architectural Heritage	Number of protected structures put at risk or on the derelict sites register	Every 2 years	(PPDD) City Architects - Conservation
		Revision of the Dublin Heritage Plan 2002-2006, to ensure enhancement of key sites	Number of conservation plans implemented through the Dublin Heritage Plan	Every 2 years	(PPDD) City Architects – Conservation City Archaeologist
			Number of proposed plans and schemes screened/ assessed by the Conservation Officer for the City and City Archaeologist	Every 2 years	(PPDD) City Architects – Conservation City Archaeologist
			Number of Architectural Conservation Areas designated	Every 2 years	(PPDD) City Architects - Conservation
Landscape and Soils	To protect and where appropriate enhance the character, diversity and special qualities of Dublin City's	Develop new areas of open space and increase number of trees	Number of new parks/ open spaces, change in area of the parks and number of trees planted	Every 2 years	(PPDD) Parks & Landscape Services

Environmental Receptor	Environmental Protection Objective	Target	Indicator	Frequency of Reporting	Department Responsible
	landscapes and soils and Geological Features	Create a well-connected city landscape consisting of linear connections (e.g. river corridors and networks)	Length of existing and new linked landscape corridors	Every 2 years	(PPDD) Parks & Landscape Services
		Develop brownfield lands and vacant sites	Total area of brownfield lands and vacant sites developed	Every 2 years	(PPDD) Parks & Landscape Services

- **Chapter 3 Environmental Report.**

To update all references to revised legislation and new and or adopted plans in the ER.

To Add to Section 3.5 under 'Relationship with other relevant Plans or Programmes' a new section on the draft National Mitigation Plan (NMP). See text below. Table 3.3 was also updated to include reference to the Draft National Mitigation Plan (NMP).

- ***Draft National Mitigation Plan (NMP)***

In line with National Policy Position on climate action and low carbon development, as well as the statutory provisions of the Climate Action and Low Carbon Bill 2015, a national low-carbon transition and mitigation plan to 2050 which will be referred to as the National Mitigation Plan of NMP is currently being developed. A primary objective of the NMP will be to bring a clear focus to both the challenges and the opportunities of transitioning to a low carbon future. It will also track the implementation of steps already underway and identify additional measures in the longer-term to ensure that Ireland does its part in contributing to both EU and Global objectives in addressing the challenges ahead.

Amend Table 3.3 (page 55 of Environmental Report)

Table 3.3 Relationship of the Development Plan with other Plans and Programmes

Draft National Mitigation Plan (NMP)	***In line with National Policy Position on climate action and low carbon development, as well as the statutory provisions of the Climate Action and Low Carbon Bill 2015, a national low-carbon transition and mitigation plan to 2050 which will be referred to as the National Mitigation Plan of NMP is currently being developed. A primary objective of the NMP will be to bring a clear focus to both the challenges and the opportunities of transitioning to a low carbon future. It will also track the implementation of steps already underway and identify additional measures in the longer-term to ensure that Ireland does its part in contributing to both EU and Global objectives in addressing the challenges ahead.***

- To amend Table 3.3 Relationship of the Development Plan with other Plans and programmes to include reference to the Waterways Heritage Plan to be added to Table 3.3.

Table 3.3 Amended to Read.

Table 3.3 Relationship of the Development Plan with other Plans and Programmes

Waterways Heritage Plan 2016 - 2020	***The Waterways Heritage Plan 2016-2020 provides, for the first time, a strategic framework for the integration of built, natural and cultural heritage into the future management of our waterways.***

- **Chapter 4 Baseline**

Insert new section into Section 4.14.5.2 (Page 118/119 Environmental Report) under Foul Sewage Collection, on the EPAs 'Focus on Urban Waste Water Treatment'. (see text below)

''***'The EPA published the 'Focus on Urban Waste Water Treatment in 2013 (2014) which deals mainly with the assessment of waste water discharges against the quality and sampling standards specified in the 1991 Urban Waste Water Treatment Directive, using the water services authorities self-monitoring data which was provided to the EPA. The report also provides a review of the environmental performance of urban waste water treatment plants and outlines the waste water treatment infrastructure in place in Ireland during 2013. Local Authorities were responsible for the management of urban waste water collection and treatment infrastructure for the reporting period of 2013. Responsibility for these assets transferred to Irish Water, the new national water utility, in 2014.''***

- **Chapter 4 Baseline**

Insert new text into Section 4.9.9.2 (Page 102 Environmental Report) under Protection of the City Landscape. (see text below)

National Landscape Strategy

The National Landscape Strategy for Ireland 2015-2025 will inform and assist the resolution of challenges arising from competing priorities in the landscape, for example: infrastructural provision versus landscape protection, or local versus national objectives. The actions of this Strategy will help support a living landscape, and strengthen community identity and will ensure that the landscapes of the future are as valued as the landscapes of the present and the past

- **Section 4.14.1 Drinking Water Supply**

Insert new text on 'Bohernabreena Reservoir' as follows (page 116/117 Environmental Report):

The Bohernabreena reservoir and waterworks located in the Glenasmole Valley is managed by Dublin City Council. The reservoir supplies approximately 35,000 households in the southern central part of Dublin City. There are two reservoirs, the upper lake which is the larger of the two is used for holding drinking water. It supplies approximately 18.2 million litres of water a day to Dublin. This is only about 5% of Dublin's needs but it is still worthwhile.

- **Section 8.3 Cumulative Impacts**

To add section into Chapter 8, Section 8.3 Cumulative Impacts (Page 221 – 223 Environmental Report and amend any references to revised policies and objectives).

It is acknowledged that there could be potential ex-situ impacts of a new water source from the River Shannon, but it should be noted that a separate SEA/EIA will be undertaken for any new water source that will deal with direct and indirect impacts.

- **Chapter 10 of the Environmental Report**

To update Section 10.4 of Section 10, (Page 235/236 Environmental Report) to include reference to linking SEA monitoring output with mid-term review , and also revising the effectiveness of monitoring. Mitigation measures during the lifetime of the plan etc. see text below.

10.4 Reporting and Responsibility

Dublin City Council will be responsible for monitoring and reporting on feedback. The City Council will prepare a standalone Monitoring Report of implementing the Plan which will be prepared in advance of the review of the Plan.

Dublin City Council is responsible for the implementation of the SEA Monitoring Programme including:

- ***Linking SEA monitoring output with the mid-term review of the Development Plan***
- ***Monitoring specific indicators and identifying any significant effects , including cumulative effects***
- ***Reviewing the effectiveness of monitoring/mitigation measures during the lifetime of the Plan, and***
- ***Identifying any cumulative effects***

- **SEA – General Comments/Updates**

- To update and amend the legislation in SEA & NIR to include the following:

The Wildlife Acts can be quoted as the Wildlife Acts 1976 – 2012.

- The Flora Protection Order in force is the Flora (Protection) Order, 2015, S.I No. 356 of 2015
- The European Communities (Natural Habitats) Regulations 1997 have been revoked
- The Birds and Natural Habitats Regulations in force are:

The European Communities (Birds and Natural Habitats) Regulations 2011, S.I NO 477 of 2011;The European Communities *Birds and Natural Habitat)(Amendment) Regulations 2013, S.I No. 499 of 2014 and The European Communities (Birds and Natural Habitats)(Amendment) Regulations 2015, S.I No. 355 of 2015-12-15 These can be called together as the European Communities (Birds and Natural Habitats Regulations 2011 to 2015.

- Appendix A of the Environmental Report to be updated to show the Final Set of Policies and objectives for the Plan.

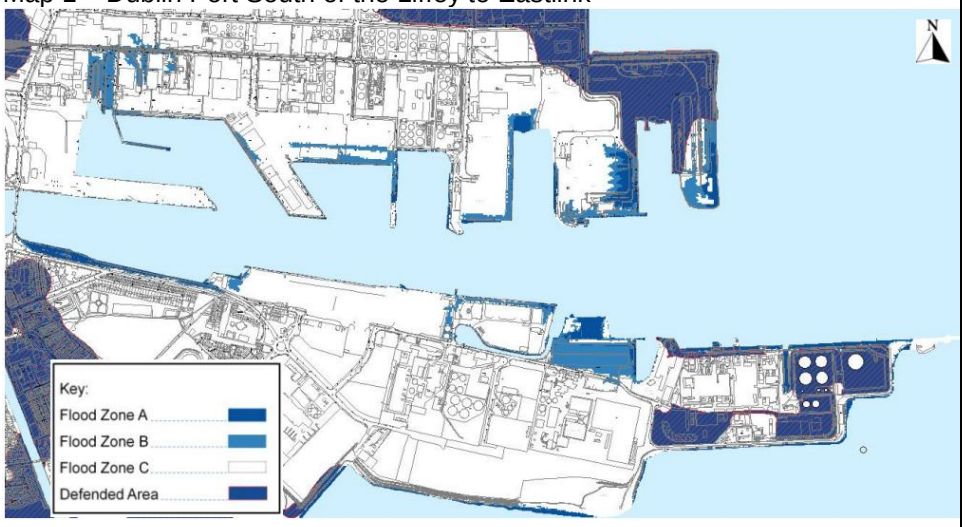
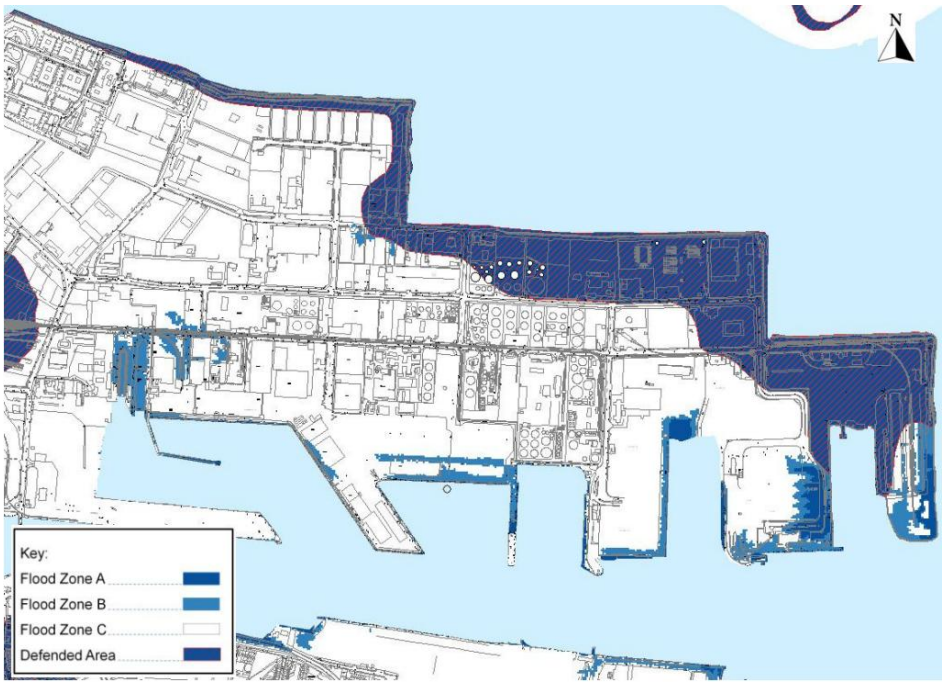
Appendix 2 – Amendments to the Strategic Flood Risk Assessment

In terms of the Strategic Flood Risk Assessment (SFRA) a number of observations were made at the first stage of the public display, including some comments from the Office of Public Works. In this regard some amendments were proposed for addition to Volume 7, including new text and some revisions to maps.

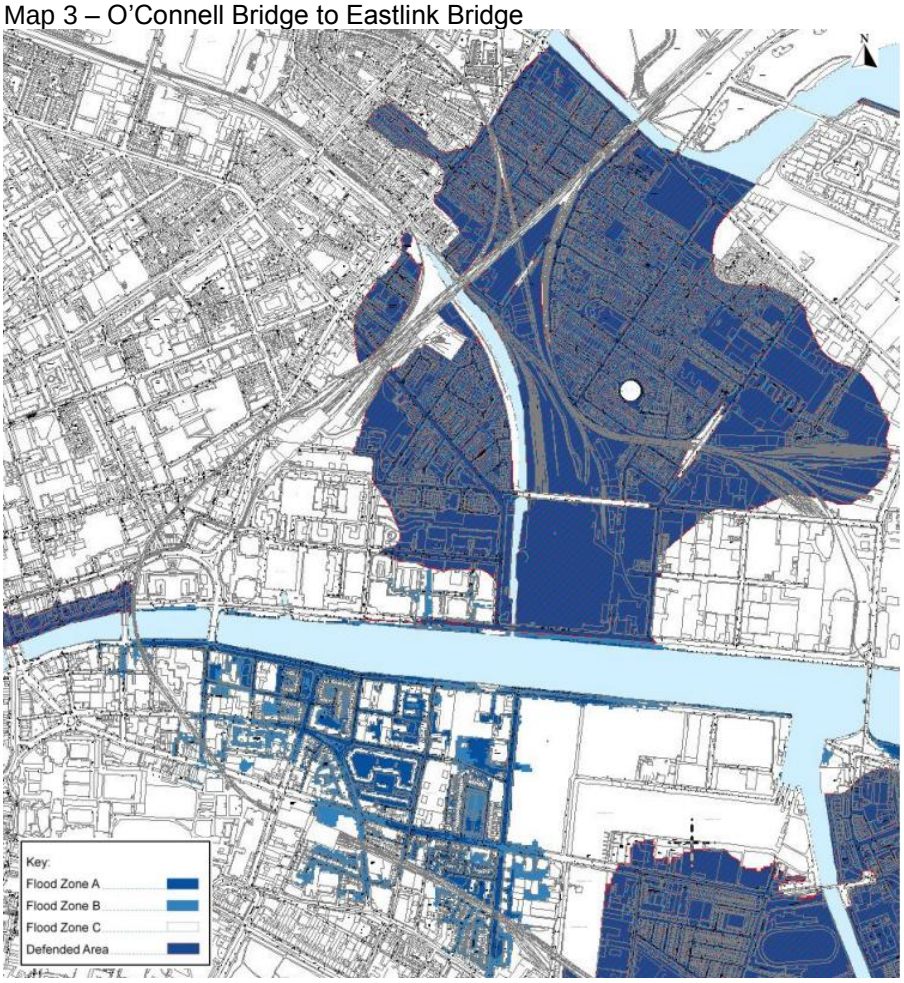
These are outlined in the Table below.

Amendments/updates to the Strategic Flood Risk Assessment Volume 7

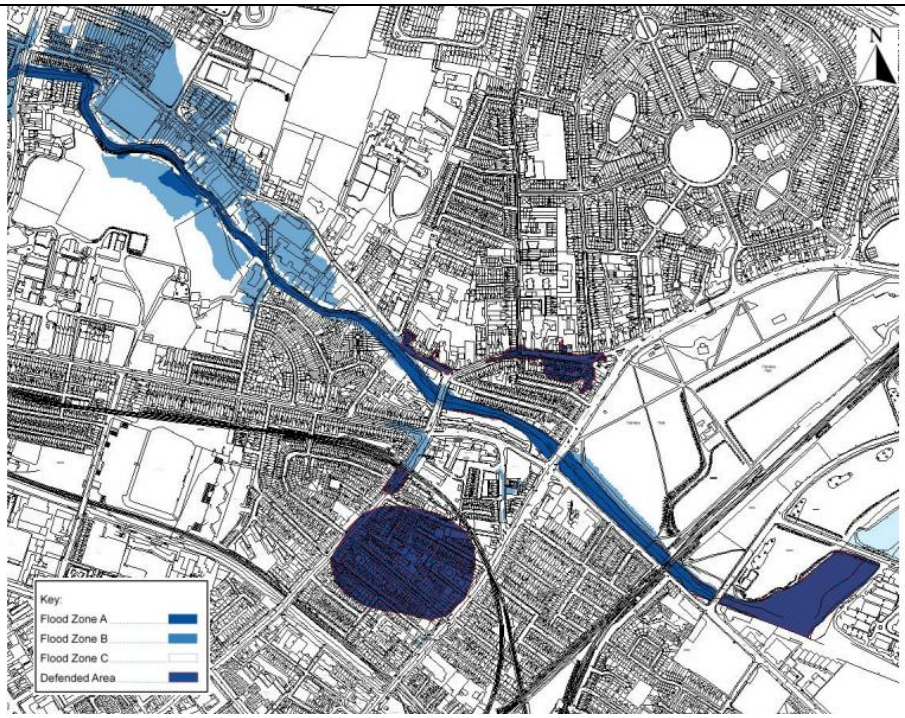
CE Report Reference	Proposed Amendment (section /title /policy/para. ref.) Text proposed
Page 161 CE Report on Submissions (March 2016)	Section 2.1.2 of the SFRA (volume 7 page 15), at the end of the last paragraph in Section 2.1.2 'Fluvial Flooding'. **Dublin City Council is currently reviewing the condition of the screens to the culverts on all its rivers. As part of this assessment, an analysis of the screens will be carried out to determine fitness for purpose, functionality and impacts of culvert / screen blockage.**
Page 161/162 CE Report on Submissions (March 2016)	To delete and add text in the last paragraph of Section 2.1.6 of the SFRA Volume 7 (page 17), entitled 'Dam Failure' and insert new text as follows: Delete the following text **Rigorous, periodic inspections are carried out by an 'All Reservoirs' Panel Engineer of all these dams to assess the risk of Dam failure.** Replace text with the following: **The earth embankment dams on the River Dodder at Bohernabreena are maintained by Irish Water. The dams are regularly inspected by an All Reservoirs Panel Engineer and the drainage is inspected on a weekly basis to ensure that no excess water is passing through or underneath the dam. The lower reservoir can be lowered in advance of a forecasted rain event to increase upstream storage capacity.** **The reinforced concrete dams on the River Liffey are maintained and operated by the ESB. ESB staff at Turlough Hill can release water prior to a forecasted rainfall event to increase upstream storage capacity. Water released from Poulaphouca takes approximately 18 hours to reach the City Centre. This is timed to ensure it does not coincide with exceptionally high tide levels in the City Centre. ESB managerial and operational staff are stakeholders in Dublin City Council's Flood Emergency Plan and are consulted during Flood Watch & Flood Monitoring situations. The ESB maintains regular contact with the City Council and briefs Dublin City Council with regard to discharges at Poulaphouca and Leixlip.** **The Council's Flood Emergency Plan (a Sub-Plan of Dublin City Council's Major Emergency Plan) is currently being reviewed and all stakeholders including the ESB are being consulted on the revised Plan.**

Page 162 CE Report on Submissions (March 2016)	To make amendments to some of the flood cell maps in Volume 7 Appendix 3 (Justification Tests)which will show underlying flood zone A in hatched areas, and also minor amendments to flood zone map between Butt Bridge and Victoria Quay Justification Tables to be amended accordingly. The following maps have been amended: Map 1 – Dublin Port South of the Liffey to Eastlink  Map 2 – Dublin Port North of the Liffey to Eastlink 

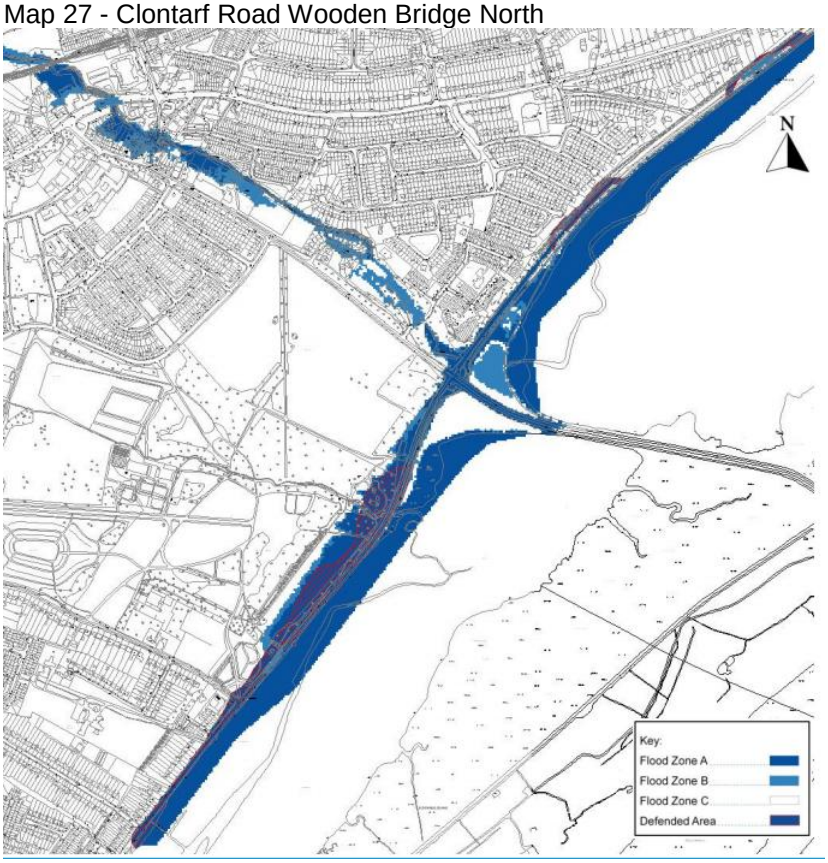
Map 3 – O'Connell Bridge to Eastlink Bridge



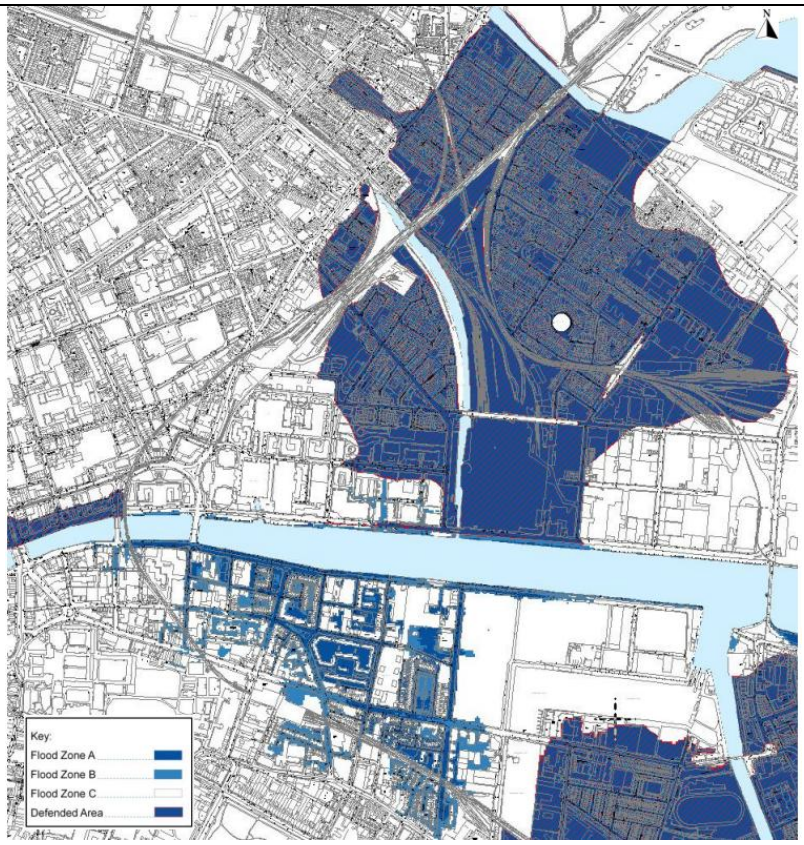
Map 20 – Dublin Port to Drumcondra Bridge (Tolka River historic now defended)



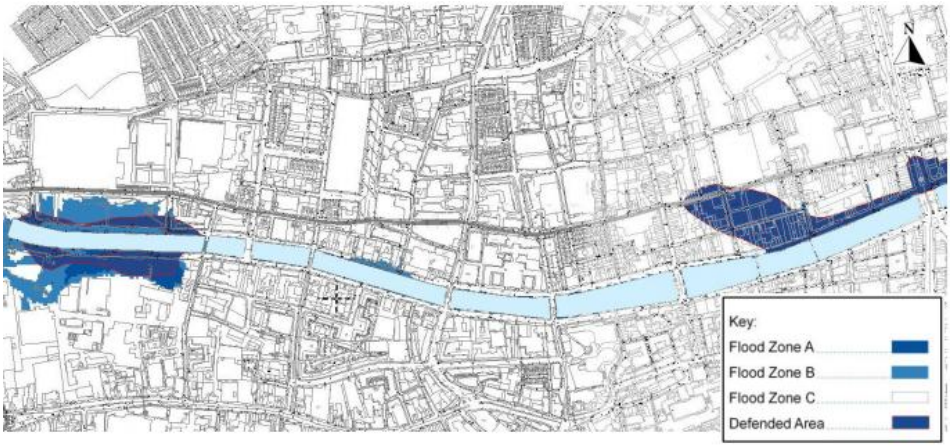
Map 27 - Clontarf Road Wooden Bridge North



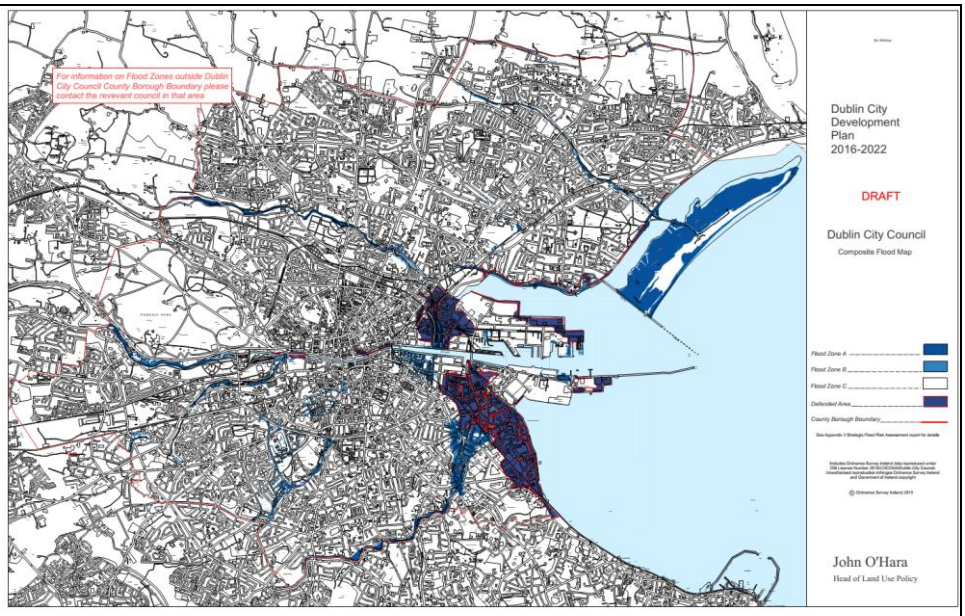
Maps 3 & 4 – Now show defended areas from Butt Bridge at Eden Quay and Bachelors Walk
Liffey O'Connell Bridge to Eastlink Bridge



Liffey Sean Heuston Bridge – O'Connell Bridge



To amend the Overall Flood Zone Map – See Appendix 5 of the Strategic Flood Risk Assessment (Volume 7)

	
Page 162 CE Report on Submissions (March 2016)	To attach the up to date zoning map relating to each flood cell to the Justification Tables for each of the flood cells identified. (maps to follow)
Page 162-166 CE Report on Submissions (March 2016) **Also minor updates required to Chapter 4 and renumbering of paragraphs.**	It is recommended that the following amendment be made to the Strategic Flood Risk Assessment, Volume 7 - Chapter 4 as outlined below, in the interest of clarity. **CHAPTER 4: Development Management and Flood Risk** **Insert New Text in Section *4.1 Requirements for a Flood Risk Assessment (page 28)*** An appropriately detailed Flood Risk Assessment (FRA) will be required in support of any planning application. The level of detail will vary depending on the risks identified and the proposed land use. As a minimum, all proposed development, including that in Flood Zone C, must consider the impact of surface water flood risks on drainage design and demonstrate compliance with the minimum required finished floor levels, detailed in the following sections of this report. In addition, flood risk from sources other than fluvial and tidal should be reviewed, as should the impacts of climate change. **Groundwater flood risk for each portion of a development below ground should be evaluated in the FRA. This should be reported in a Surface Water Assessment and Management Report.** **Insert and delete text in Section *4.2 Consideration of Surface Water in All Areas (page 29)*** All proposed development, including that in Flood Zone C, shall have regard to surface water management policies contained in the Greater Dublin Strategic Drainage Study, Chapter 9 of the Development Plan **and relevant information in this SFRA**. In this regard, all the other development scenarios must pass through this stage before completing the planning and development process, and should be accompanied by an appropriately detailed flood risk assessment, or **drainage impact assessment surface water assessment.** There are extensive networks of surface water runoff routes across the city, as

	indicated in the FloodResilienCity Maps in Appendix 6. When commencing a **drainage impact assessment** surface **water assessment**, these maps should be consulted and appropriate incorporation of surface water management applied. In particular, attention should be given to development in low-lying areas which may act as natural ponds for collection of runoff. Section 4.3 renumbered 4.2. Drainage Impact Assessment Surface Water Assessment and Management (page 29) New text added before first paragraph and after 2nd paragraph **The Surface Water Assessment shall be carried out for all sites and reported either in a standalone report, including drainage design drawings and supporting calculations, or it may form part of a more detailed Flood Risk Assessment, which will also consider other flood risks.** A specific requirement of the EU Water Framework Directive is that surface water discharge is controlled and managed so that any impact on its receiving environment is mitigated. This can be achieved through the use of Sustainable Drainage Systems (SuDS). SuDS can reduce the rate of runoff through a combination of infiltration, storage and conveyance (slowing down the movement of water). Sustainable drainage can be achieved through the use of green infrastructure such as green roofs and pervious pavements, rainwater harvesting, soakaways, swales and detention basins, ponds and wetlands. In order to reduce flooding and improve water quality, all developments in the City Council's administrative area are required to implement the policies of the Greater Dublin Strategic Drainage Study (GDSDS) in relation to surface-water and flood risk management. This is done by ensuring new development does not obstruct existing flood plains or routes and by limiting the runoff from new development to green-field rates. **It is noted that the GDSDS requires consideration of a 10% increase in rainfall intensity to take into account the possible impacts of climate change. However, the OPW Draft Guidance on Climate Change (see Section 2.1.8) contains more recent recommendations in this regard. Drainage and surface water design should therefore take into account the MRFS and HEFS in the same way as fluvial or tidal risk assessments. Guidance on the application of climate change allowances is provided in Section 4.10.** **Due to the proximity of development sites in the area to the tidal section of the River Liffey and the possibility that tide-locking will occur during a combined high tide/extreme storm event, a minimum of 570m^3 per hectare of surface water storage should be provided in each development. This equates to storage provision for the 30-year 6-hour storm during a high tide event with a climate change factor of +20% applied.** Key points for consideration in terms of highly vulnerable development in defended areas are: • The minimum finished floor level for a residential development should be the 1 in 100 year fluvial or 1 in 200 year tidal flood level, with a suitable allowance for climate change (see Section 4.**10**) and a suitable freeboard. The freeboard should be at least 300mm but in tidal risk areas could be higher, particularly where wave action or combined fluvial/tidal events are present. • **Compensatory storage for dProposals for d**evelopment that results in a loss of floodplain within undefended Flood Zone A must **also**

demonstrate that compensatory storage can be provided on a level for level basis.

Text amendments made to 3rd paragraph and 4th paragraph (text omitted)

The presence or absence of flood defences informs the level of flood mitigation recommended for less vulnerable developments in areas at risk of flooding. In contrast with highly vulnerable development, there is greater scope for the developer of less vulnerable uses to accept flood risks and build to a lower standard of protection (SoP), which is still high enough to manage risks for the development in question. However, any deviation from the design standard of 1%/0.5% AEP, plus climate change, plus freeboard, needs to be fully justified within the FRA.

Major developments may be located in areas with a higher likelihood of flooding (i.e. Flood Zone A), provided the risks are understood, and accepted. The recommended finished floor level is the 1 in 100 year fluvial or 1 in 200 year tide level, plus climate change and freeboard. However, by working through the following steps a lower a lower finished floor level may be considered appropriate:

Text amendments made to 1st and 2nd paragraph

In an undefended site there is less scope for accepting 'below design level' finished floor levels **than in a site which is defended**. **although However,** with consideration of the design life of the development, the proposed use, the vulnerability of items to be kept in the premises and long term adaptability, it may be acceptable to design finished floor levels to current, rather than climate change standards. An appropriate freeboard allowance would still be required.

It is also a requirement that loss of floodplain within Flood Zone A should be compensated for on a level for level basis within the site bounds **for the 1 in 100-year event**. Within currently developed areas the impact of loss of storage should be investigated for the 1 in 1000-year event, and further compensatory storage provided if the development is shown to have a significant impact on flood risk elsewhere.

Paragraph 4.13 renumbered 4.10 Incorporating Climate Change into Development Design
Text amendments to 2nd, 3rd and 4th paragraph (page 37)

For most development, including residential, nursing homes, shops and offices, the medium-range future scenario (20% increase in flows and/or 0.5m increase in sea level **and/or 20% increase in rainfall depth)** is an appropriate consideration.

Where the risk associated with inundation of a development is low and the design life of the development is short (typically less than 30 years) the allowance provided for climate change may be less than the 20% **flow** / 0.5m sea level **/ 20% rainfall depth**. However, the reasoning and impacts of such an approach should be provided in the site specific FRA.

Conversely, there may be development which requires a higher level response to climate change. This could include major facilities which are extremely difficult to relocate, such as hospitals, Seveso sites or power stations, and those which represent a high-economic and long term investment within the scale of development across the city. In such situations it would be reasonable to expect the high-end future scenario (30% increase in flow **and/**or 1m in sea level **and/or 30% increase in rainfall depth**) to be designed to. In the case of

	coastal locations, and as climate projections are further developed, it may be prudent to demonstrate adaptability to even higher sea levels. Text amendments made to 1st paragraph. It is recommended that, where possible, and particularly where there is greenfield land adjacent to the river, a 'green corridor', **at least 10m wide,**is retained on all rivers and streams. This will have a number of benefits, including: