





STRATEGIC ENVIRONMENTAL ASSESSMENT FINAL ENVIRONMENTAL REPORT

DUBLIN CITY COUNCIL

CLIMATE CHANGE ACTION PLAN 2019-2024

JULY 2019

This report has been prepared by Minogue & Associates with all reasonable skill, care and diligence. Information report herein is based on the interpretation of data collected and has been accepted in good faith as being accurate and valid.

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Draft 21.01.2019 R Minogue MCIEEM

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1.0 INTRODUCTION

1.1 Purpose of the Non-Technical Summary

This is the Non-Technical Summary of the environmental report for the Strategic Environmental Assessment (SEA) of the Dublin City Council Climate Change Action Plan (CCAP) 2019-2024. The purpose of the SEA is to formally and systematically assess the likely significant effects of implementing a plan or programme, in this instance the above Climate Change Action Plan 2019-2024.

The Environmental Report identifies the significant environmental effects of the plan on the environment and where significant effects are identified, recommends appropriate measures to avoid or reduce such effects. As the plan is being prepared the SEA identifies and influences proposals, particularly through avoiding areas of greatest environmental sensitivity. This Environmental Report forms part of the SEA process, documents the SEA process and is the key consultation document in the SEA process as it facilitates interested parties to comment on the environmental issues associated with the plan itself. This Environmental Report has been prepared under the Planning and Development (Strategic Environmental Assessment) Regulations 2004 (S.I 435 of 2004). The CCAP 2019-2024 was approved by Dublin City Council on 13th May 2019 and this is the final SEA ER. Where changes are made to this ER in light of submissions from the public consultation process, these are shown in bold font with a footnote noting the origin of the submission.

Following the public consultation period, a series of recommendations were made in the Chief Executive's Report; these were screened for SEA and Appropriate Assessment and Annex C of this Final SEA ER Main Report presents this SEA Screening.

A SEA Statement has also been prepared now the CCAP is approved and is made available along with the Final CCAP. This includes the final approved mitigation measures.

1.2 BACKGROUND AND CONTEXT

For the first time, Dublin's four local authorities have joined together to develop Climate Change Action Plans as a collaborative response to the impact that climate change is having, and will continue to have, on the Dublin Region and its citizens. While each plan is unique to its functional area, they are unified in their approach to climate change adaptation and mitigation, and their commitment to lead by example in tackling this global issue.

These CCAPs follow on from the publication of A Strategy for Climate Change Action Plans for the Dublin Local Authorities (DLAs), which was published in January 2017. The strategy used a structured approach that focused on seven key areas (Citizen Engagement, Planning, Energy, Transport, Water, Waste, and Ecosystems & Biodiversity), and set out how the DLAs would develop the four climate change action plans. The action plans will be unique to each local authority area but synchronised in their methodology.

This plan concentrates on the two approaches required to tackle climate change. The first, mitigation, consists of actions that will reduce current and future GHG emissions; examples of these include reductions in energy use, switching to renewable energy sources and carbon sinks. The second approach, adaptation, consists of actions that will reduce the impacts that are already happening now from our changing climate and those that are projected to happen in the future.

The actions in this draft CCAP for Dublin City Council will be continually monitored and updated by a dedicated climate action team working across all Council departments. They will be assisted by the

newly established Dublin Metropolitan Climate Action Regional Office, which will ensure that the overall plan is fully updated every five years to reflect latest policy, technology and climate-related impacts. The new office will work with Codema, as technical support and research partner, to ensure that the plans continue to be informed by national and international best practice.

The actions in the CCAP are presented around a number of themes as follows:

- Energy and Buildings
- Transport
- Flood Resilience
- Nature Based Solutions
- Resource Management.

Collectively, these address the four targets of this plan, which are:

- A 33% improvement in the Council's energy efficiency by 2020
- A 40% reduction in the Council's greenhouse gas emissions by 2030
- To make Dublin a climate resilient region, by reducing the impacts of future climate change related events
- To actively engage and inform citizens on climate change.

2 CONTENTS OF SEA ENVIRONMENTAL REPORT

2.1 Approach to the SEA.

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

Table 1 Stages in the SEA and Plan preparation process

Stage of SEA	Plan
Stage 1 Screening	Screening is the first stage of SEA to determine if the plan requires full SEA. A SEA and Screening for Appropriate Assessment were carried out in December 2018 and it was determined that the CCAP needed to progress to full SEA and Stage II Appropriate Assessment.
Stage 2 Scoping	The purpose of this stage is to work out what environmental topics and issues should be included in the SEA. The Scoping report was issued to statutory bodies including the EPA and National Parks and Wildlife Service to discuss the potential environmental issues, baseline information, and approach to the SEA.
Stage3 Environmental Report-Current Stage	This is the current stage of the SEA and the Dublin City CCAP 2019-2024. The Environmental Report tells the story of the CCAP and how environmental considerations have been addressed and included during the draft plan preparation process. The screening for appropriate assessment and Natura Impact Report is also discussed in the Environmental Report. This report is the main consultation document of the SEA process and hence is on display alongside the plan along with supporting reports. Following the public display period there may be changes to the plan and the SEA will also assess these and update the Environmental Report as required.
Stage 4 SEA Statement	This stage is the final output of the SEA process and tells the story of the SEA process. It is prepared once the plan is finalised and adopted.

2.2 Relationship to other relevant plans and programmes.

Under the SEA Directive, the relationship between the plan and other relevant plans and programmes must be taken into account. A review of the relevant plans and programmes can be found in Appendix B of the SEA ER and a list of same is presented in Chapter 3 of the SEA ER.

The preparation of the plan must be considered within the context of a hierarchy of policies, plans and strategies which include international, national, regional and local level policy documents. These documents set the policy framework within which the plan will operate.

2.3 CURRENT ENVIRONMENTAL BASELINE.

2.3.1 POPULATION AND HUMAN HEALTH

This section provides information on the current population and demographic trends in Dublin City and more broadly at Regional Level. Impacts can arise on people's health and quality of life from a range of environmental factors, often through a combination of environmental impacts such as landuse, water quality, air quality, noise and transport patterns. Many of these may be exacerbated from climate change effects and impacts.

When compared with their surrounding regions, urban areas are considered to be particularly vulnerable to these climatic changes. This is due to: the high concentrations of population, infrastructure and economic activities located in these areas, the exacerbation of climate impacts by urban-scale phenomena and dependency on surrounding regions for service provision¹.

Based on the Census 2016 data, population density varies throughout the county, with implications in terms of provision of services, ecological connectivity and maximising sustainable transport and landuse. In terms of broad trends however, greater population densities are closer to and in the city centre, with lower population densities to the east and western parts of the City.

Human health can be adversely affected by a range of environmental factors and these include air quality with emissions from transport a particular issue; noise can also adversely affect human health.

2.3.2 BIODIVERSITY, FLORA AND FAUNA

Dublin city is a largely urban environment and is partially built on reclaimed or in-filled lands. The city and its bay, as a natural harbour at the confluence of several river basins, contain a variety of ecosystems that are biologically diverse and of international and national importance for the species which inhabit them and their associations. The ecological value of these areas is a resource for Dublin's citizens and also remarkable for such an urbanised capital city.

The City Council has an objective to promote connectivity of habitats and the enhancement of green corridors of public open space both for biodiversity and amenity values. The system of freshwater streams, rivers, estuarine habitats and beaches that is managed by Dublin City Council provides a network of connected natural areas, part of the green infrastructure of Dublin city. To protect and enhance this natural asset, several management plans have been prepared for all aspects, including biodiversity and flora and fauna, for the Dodder, Tolka, Liffey and North Bull Island. Habitat management plans have also been prepared for a number of city parks, including Bushy Park and Le Fanu Park.

Green infrastructure strategies are recognised as an essential component in European, national and regional policies. The city's green infrastructure network includes historic parks, gardens and Georgian squares of national and international importance. Green infrastructure is recognised as comprising an essential component contributing to quality of life and well-being for residents, in addition to conserving habitat connectivity and reducing habitat fragmentation. To protect and enhance this natural asset, Dublin City Council has prepared several management plans for all aspects, including biodiversity and flora and fauna. These plans include the Dodder, Tolka, Liffey and North Bull Island.

There are a number of designated sites in and around Dublin City, including Special Areas of Conservation, Special Protection Areas, proposed Natural Heritage Areas and Ramsar Sites. The Dublin Bay Biosphere is another important biodiversity area and North Bull Island was recognised on the UNESCO World Network of Biosphere Reserves in 1981. North Bull Island is unique among biosphere reserves given its close proximity to a capital city.

2.3.3. WATER RESOURCES

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

¹ This paragraph is taken from the Urb Adapt Project Summary running till 2019 will use the Dublin Region as a case study that will allow for the integrated assessment and management of current and future climate vulnerabilities within the context of existing climate and non-climate pressures and spatial planning practices. https://urbadapt.com/

Dublin city includes rivers such as the Tolka and Liffey, as well as coastal waters, transitional waters and groundwaters. No lakes are present in the city. The Water Framework Directive is the key overarching water protection framework and it uses a catchment based approach. A catchment is an area where water is collected by the natural landscape and flows from source through river, lakes and groundwater to the sea. Dublin City is situated within the Liffey and Dublin Bay Catchment (code: 09). The area of this catchment covers 1,624,42km² and supports a total population density of 777 people per km².

A strategic flood risk assessment was undertaken as part of the Dublin City Development Plan 2016-202. It is important to note that sea level rise, while an important phenomenon to understand for Dublin City, is only one element that contributes to flooding issues in the City. It is also important to understand the other elements which, when combined with rising sea levels, contribute to flooding. This includes combinations of extreme tide levels, which are made up of astronomic tides and storm surges (fluctuations in water level due to atmospheric pressure, wind speed, seiches, etc) and wave action.

2.3.4 SOIL AND GEOLOGY

The underlying bedrock geology of Dublin is limestone. The soil of Dublin is derived from glacial till of Irish Sea origin, with limestone and shale and is largely comprised of grey-brown podzols. The coast of Dublin has a layer of alluvium overlying the topsoil, which is a result of the low-lying status of the city. This sequence of soils remains only in undisturbed areas of the coast. As Dublin is a very built-up city, much of the topsoil and alluvium have long since been removed.

2.3.5 CULTURAL HERITAGE

Dublin is an ancient city with many sites of archaeological, architectural and cultural heritage importance. As a vibrant and expanding city, there is a continuing need to balance day to day operations with protection of the cultural resource that is so much a part of the fabric of Dublin. Dublin City Council is rich in archaeology and has a diverse range of monuments covering a number of historic eras. It is deemed that the plan area is of high archaeological potential due to the potential for the presence of hitherto unknown sub-surface archaeological remains. This determination is based on the presence of substantial archaeological remains from many periods of the past within the city area. Dublin originated first as two separate monastic enclosures (Átha Cliath and Linn Dubh), and then as a fortress for Viking ships on the Liffey.

After the Anglo-Norman invasion of 1170, the walled city expanded reclaiming land at wood quay and large suburbs developed to the north (Oxmantown), to the south and west around Ship Street and St Patrick's Cathedral and the Liberties. On the outskirts were villages such as Chapelizod, Finglas and Donnybrook, etc.

Much of the medieval city was still intact in 1610 when John Speed mapped it for the first time. During the eighteenth century however, the Wide Streets Commission reshaped the old medieval city, and created a network of main thoroughfares by wholesale demolition or widening of old streets or the creation of entirely new ones.

In addition to archaeological features there is industrial heritage unique to the City as well as architectural heritage, which currently has over 9000 structures on the Record of Protected Structures.

2.3.6 LANDSCAPE

Landscape consists of the public and private landscape of the city. It fulfils an array of environmental, ecological, social, recreational and aesthetic functions of the developing city. Dublin City has significant green spaces through the provision of parks such as the Phoenix Park, St Anne's Park and a number of institutional lands, including Trinity College Dublin.

The city's parks, institutional lands, private gardens and graveyards all contribute significantly to the biodiversity resource in the city. Remaining hedgerows, semi-natural grasslands and trees are of particular importance.

The city's landscape and parks contain significant wildlife resources, including woodland, seminatural grasslands and remnant hedgerows. In this way, Dublin's city's parks support species of local and national importance, including otters, bats, hedgehogs and kingfishers. The city's parks also play a significant amenity and educational role in the city.

The townscape of the city is as significant as it creates and contributes to the urban character. This varies within the City, from the older medieval areas to Georgian Dublin and newer redevelopment areas such as the Grand Canal Dock.

Key vistas and viewpoints/landmarks in the city also contribute to local character and include the Grand and Royal Canals, coastal views as well as various tall structures including church steeples and landmarks such as Wellingtons Column in the Phoenix Park.

2.3.7 AIR QUALITY AND CLIMATIC FACTORS

The Air Quality Index for health (EPA) provides air quality information with health advice for both the general public and people sensitive to air pollution. The index is displayed on a colour-coded map, updated hourly. The index is based on information from monitoring instruments at representative locations in each region. Dublin City is located within the 'Dublin City' region. Air Quality is generally classified as 'good'.

Adaption and responding to climate change is a key objective the CCAP and the following baseline is taken from the DCC CCAP. The adaptation baseline has identified that the effects of climate change are already impacting Dublin City at a significant rate and are very likely to increase in their frequency and intensity.

The number of days with heavy rainfall has increased and the amount of extreme flooding events has also risen in the last 10 years. Dublin City has also experienced extreme temperatures, as witnessed recently in 2018, with Met Éireann issuing its first ever Status Red warning for snow in February, followed by one of the hottest summers on record during June and July.

The most recently-available information for total emissions in the entire Dublin City area is based on Census 2016 data. Using this data, Codema was able to calculate that the total emissions for the Dublin City area amounted to 2,810,880 tonnes of CO2 equivalent in 2016. The sectors that produced the most emissions were the residential, commercial and transport sectors, accounting for 35%, 33%, and 25% of the total emissions, respectively. Dublin City Council's own emissions accounted for 1.4% of this total, with social housing contributing another 3.3%. This highlights the need for collaboration and action from all stakeholders to tackle the remaining 95.3% of emissions from public and private sector sources in Dublin City.

2.3.8 MATERIAL ASSETS

The Dublin City Council area covers an area of approximately 115 km2 and is populated by 527,612 people. Within its boundaries there are just over 31 km of Irish Rail track and now the Luas Cross city, Red and Green lines traverse parts of the city. The entire rail track within the Dublin City Council area is designated as major rail. It is estimated that there is approximately 2,400 km of footpath within the City Council area. This is of varying quality and it is maintained on a demand/priority basis.

Wastewater is treated in Ringsend Wastewater Treatment Works which discharges into Dublin Bay. The treated waters are treated to a Tertiary standard, which is in compliance with the Urban

Wastewater Treatment Directive. The quality of the discharged waters is within the requirements of the Urban Waste Water Treatment Directive.

It is anticipated that Dublin will need a new major water source by 2025, based on projection of growth in the Greater Dublin Area. Irish Water is currently planning the development of a new major water source for the East and Midlands which will include supplying projected demand in the GDA water supply area. Irish Water is also currently implementing a major water conservation programme in order to maximise the availability of treated water from current sources.

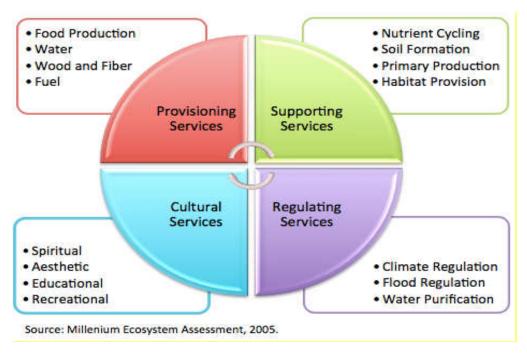
The Regional Waste Management Plan 2015-2024 for the Eastern-Midlands Region encompasses the local authorities: Dublin City, Dún Laoghaire- Rathdown, Fingal, Kildare, Louth, Laois, Longford, Meath, Offaly, Westmeath and Wicklow. The regional plan provides the framework for waste management for the next six years and sets out a range of policies and actions in order to meet the specified mandatory and performance targets.

2.3.9 INTER-RELATIONSHIPS

ECOSYSTEM SERVICES

Awareness about the roles and functions of ecosystems has increased in recent years and it can be a useful means to highlight their importance and value services to society. The Economics of Ecosystem Services and Biodiversity (TEEB) study defines ecosystem services as: 'the benefits people receive from ecosystems'. Humans are ultimately dependant on the natural environment and ecosystem services highlight how these systems provide and interact to create the essential components for human well-being. Four key services are identified for ecosystems and are shown in the following **Figure 1**.

FIGURE 1 ECOSYSTEM SERVICES.

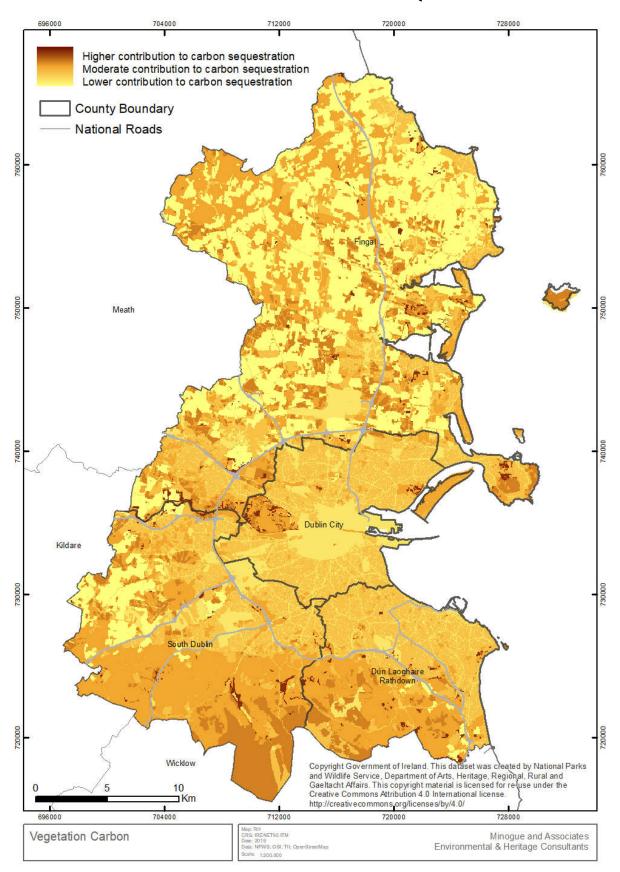


NATIONAL ECOSYSTEM AND ECOSYSTEM SERVICES MAPPING PILOT (NPWS)

The National Parks and Wildlife Service (NPWS) commissioned a short project for a National Ecosystem and Ecosystem Services mapping pilot for a suite of prioritised services based on available data. The project completed in 2016. Maps showing water filtration and storage are included in the SEA ER (chapter Seven) and the map below shows carbon sequestration.

In the context of Dublin City, the assessment demonstrates the importance of the surrounding areas in terms of water storage, filtration and carbon sequestration. The large open space/parkland at Phoenix Park and Bull Island highlight the importance of these areas within the context of providing ecosystem services to Dublin City.

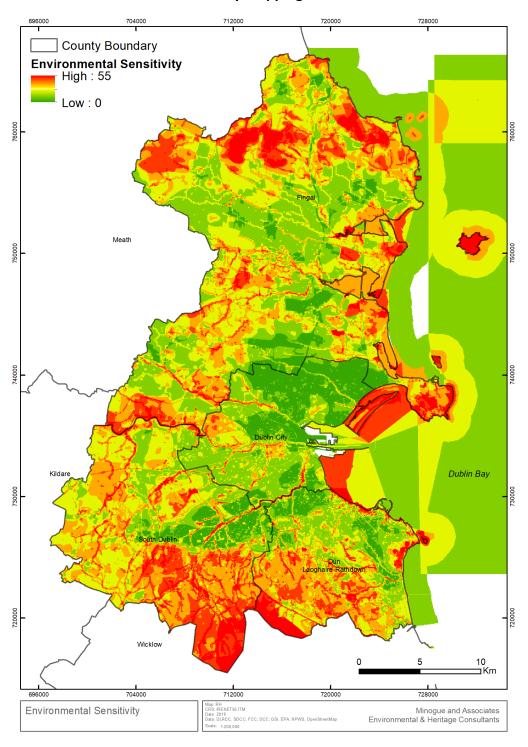
FIGURE 2 ECOSYSTEM SERVICES - CARBON SEQUESTRATION



2.3.10 Environmental Sensitivity.

In accordance with the SEA Directive, the interrelationship between the environmental parameters above must be taken into account. Although all such parameters may be considered interrelated and may impact on each other at some level. The Figure below shows the overall environmental sensitivity for the plan area and sphere of influence, and follows the same approach (i.e.: ranking of environmental parameters) as that used in the Dublin City CDP 2016-2022 SEA process.

FIGURE 3 Environmental sensitivity mapping of the four Dublin Local Authorities



3 STRATEGIC ENVIRONMENTAL OBJECTIVES AND CONSIDERATION OF ALTERNATIVES

3.1 STRATEGIC ENVIRONMENTAL OBJECTIVES

The purpose of the SEA Objectives is to ensure that the assessment process is transparent and robust and that the CCAP considers and addresses potential environmental effects. SEA Objectives have been set for each of the ten environmental topics identified at the Scoping Stage of the SEA process.

These objectives are derived from the principles identified through the plan, policy and programme review and align where possible with the SEOs developed for the Dublin City Development Plan 2016-2022. Where they differ from the CDP 2016-2022 objectives, the text is shown in italic bold font. The results of this are summarised in a table, called an evaluation matrix (See Chapter Seven and Annex A of the SEA ER).

TABLE 2 STRATEGIC ENVIRONMENTAL OBJECTIVES

SEA Topic

Environmental Protection Objective

Biodiversity Flora and Fauna To protect and where appropriate enhance the diversity of habitats, species, ecosystems and geological features.



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.



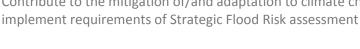
Water



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.

Air Quality and Climate





Soil and Geology

See Landscape Objective



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.

Cultural Heritage

To protect and where appropriate enhance the character, diversity and qualities of Dublin city's cultural, including architectural and archaeological, heritage.



To protect and where appropriate enhance the character, diversity and special qualities of Dublin city's landscapes and soils.



Interrelationships

Maintain and improve the health of people, ecosystems and natural processes

Actively seek to integrate opportunities for environmental enhancement during adaptation to climate change

3.2 Consideration of Alternatives

One of the critical roles of the SEA is to facilitate an evaluation of the likely environmental consequences of a range of alternative development scenarios, in this case the Dublin City CCAP 2019-2024. These alternative development scenarios should meet the following considerations:

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

6.2 ALTERNATIVES CONSIDERED

In a *Strategy Towards Climate Change Actions Plans for Dublin 2017*, seven focus areas were identified as having the greatest potential to help the Dublin LAs move towards a zero-carbon society and adapt to the effects of climate change. These focus areas were as follows:

• Water, Waste, Planning, Transport, Energy, Ecosystems and Biodiversity and Citizen Engagement.

The focus areas can have predominately either mitigation or adaptation solutions, or both. For example, the Energy focus area mainly concerns mitigation (ie. reducing the use of fossil fuels and their associated CO2 emissions), while Water largely focuses on adapting to changes that are occurring or will occur in the near future due to climate change. Meanwhile, the Citizen & Stakeholder Engagement focus area concerns both mitigation and adaptation.

The aim of the CCAP is to work with the other Dublin local authorities in a co-ordinated manner to achieve the actions identified as being capable of implementing over a Five Year Period whilst also contributing to both mitigation and adapting to climate change. The following alternatives were considered:

- Alternative 1: Do-Nothing (rely CDP policies and objectives to address and adapt to climate change)
- Alternative 2: Prioritise largest greenhouse gas emission sectors –Energy and Transport
- Alternative 3: Approach the priority areas in a balanced manner to provide for both responses to climate change impacts (adaptation) and reduce greenhouse gas emissions mitigation).

In terms of all SEOs, Alternative 3 is identified as creating most positive interactions as it provides greater environmental performance overall and also allows for a greater environmental gains, than may be achieved through Alternatives 2 and 1. In addition, the multi-faceted approach contributes to greater co-benefits by providing for a wider range of environmental effects particularly around nature based solutions and resource management. The inclusion of measures for citizen engagement and awareness raising through the CCAP option is also positive for a number of SEOs.

4 ASSESSMENT OF SIGNIFICANT EFFECTS AND MITIGATION MEASURES

4.1 SIGNIFICANT EFFECTS

Population and Human health: Many of the actions identified in the CCAP give rise to long term positive effects on population and human health both by responding and adapting to the impacts of climate change, and also reducing greenhouse gas emissions through a series of measures.

Reflecting the opportunity for co-benefits of the CCAP, measures around energy efficiency and district heating opportunities can help address fuel poverty in relation to vulnerable individuals as well as the chance to reuse energy from within the local area, for example Energy: Action 2 Requirement for all new developments to be district heating-enabled in Poolbeg West, North Lotts and Grand Canal SDZs.

Biodiversity, Flora and Fauna: The promotion of a nature based measures and resource management in particular along with blue and green infrastructure actions all strengthen overall protection of biodiversity resources and the Biodiversity SEOS.

Mapping trees in the county (Nature Based Solutions Action 14), Collect data to inform preparation of a list of habitats and species in Dublin city vulnerable to climate change (Action 7)), as well as Action 1 Regional working group on nature based solutions and joint action plans to protect native habitats and species across all 4 DLS(Action 2) are examples of actions that are long term positive and consistent with these SEOs.

Water Resources: The Dublin City CDP 2016-2022 already includes a range of provisions and measures to address and minimise the above effects, including measures around green infrastructure, flood risk management and development control.

The CCAP however further enhances and strengthens these through the flood resilience actions and nature based solutions in particular. Additional tree planting and a focus on riparian habitat (Actions 3 Establish a cross-departmental Trees and SUDS Working Group to promote and pilot water sensitive urban design incorporating urban tree planting and 35 Study impacts and benefits of increased buffer distances to watercourses) provide for positive effects as they reduce soil run off and allow for water attenuation and filtration. Again this provides for longer, positive effects associated with linear habitat creation and ecological connectivity.

Soil and Geology: Soil quality and function may be enhanced through particular measures associated with flood resilience, nature based solutions and resource management in particular.

Awareness raising around illegal dumping (Action 12) and Action 19 leaf composting can generate positive effects on soil through enhancement of the resource and a more sustainable approach to enriching soil. Action 38 Prepare an analysis of soil sealing in Dublin City to determine levels of permeability is particularly important given the largely urban character of the city's soils and its functions in terms of carbon sequestration and water attenuation, as well as its contribution to biodiversity.

Air Quality and Climate: Overall the CCAP will contribute positively to climate change adaptation through the following:

• Blue and green infrastructure giving rise to increased surface water storage and potential carbon sequestration

- Focus on energy efficiency and innovation as seen through the actions identified in the Energy Theme, examples include
- Action 4 provides for an evidence based climate change chapter in the County Development Plan, both of which will allow for policy responses and in the CDP context, landuse zoning responses based on the evidence prepared.
- Other energy related measures including Energy efficiency works in 30 Council owned and operated buildings (Action 10) are all identified as positive in relation to this SEO.

Key measures relating to behavioural change around transport and the increase in walking/cycling and public transport measures are essential in addressing transport emissions over the lifetime of the CCAP and beyond.

Recognising the ecosystems functions of soil, water and biodiversity is a key element in the Nature Based solutions theme and is an important acknowledgement that also provides for positive effects across a number of SEOs.

The CCAP includes targets relating to 40% reduction in the councils' Greenhouse Gas Emissions by 2030 (primarily through lighting and energy measures), a 33% improvement in the councils energy efficiency by 2020. However the CCAP also acknowledges that the council's outputs are relatively minor given the wider sectoral emissions in the county and this is why many of measures relate to the council leading on climate action, promoting behavioural change, facilitating sustainable transport options, promoting increased energy efficiency and supporting nature based solutions and citizen engagement.

Cultural Heritage: Archaeology and Built heritage features are present throughout the plan area, and in particular those archaeological or built heritage features associated with the coastline and Dublin Bay may be particularly vulnerable to climate change effects.

The concentration of built heritage features and historic settlements on the coastline increases their vulnerability to the effects of climate change.

Cultural heritage is not often considered or captured adequately in coastal zone management planning and this can give rise to adverse effects on cultural heritage.

Material Assets: Transport and Flood Resilience in particular provide for mitigation and adaptation with a view to minimising adverse effects of climate change on material assets, and also responding and facilitating behavioural and modal change in energy use and transport. Examples of these include the following:

- Energy: Action 1: Create an Energy Masterplan for the Dublin Region,
- Transport: Action 27 Develop and extend cycle network; Action 45 Sustainable Transport Hubs
- Flood Resilience: whilst most of the measures here mitigate and adapt to climate change, with accompanying positive effects on material assets SEOs, Actions 16 Develop template to capture impacts, response and costs for all major climate events and 18 are recommended for mitigation to allow for the inclusion of 'environmental externalities' in any costing exercise, as well as promotion of natural flood measures as a priority in any updated guidelines or policies.
- Actions under Resource Management are also identified as generating positive, long terms
 effects particularly around the circular economy, reuse and awareness raising around food waste
 and recycling.

Landscape: Long term positive effects are identified for the CCAP and landscape primarily through the nature based solutions, public realm enhancement, green and blue infrastructure, increased tree planting etc.

Many of the measures in the CCAP require a landscape level response such as Regional Flood Plain management guidelines, recognition of green and blue infrastructure and corridors and this an important approach to take when responding to climate change.

In combination and cumulative effects: Cumulatively and in combination, several of the CCAP Actions encourage a modal shift and in turn gives rise to indirect positive effects, for example by creating more physical activity in terms of travel to work and school, positively affecting air quality with accompanying benefits to both population and human health. In addition, this can create a reduction in emissions associated with Particulate Matter and Nitrogen Dioxide. This benefits both human health as well as Biodiversity, flora and fauna and surface water features.

The majority of the Flood Resilient measures are identified as being consistent and positive across all SEOs, in particular measures that promote natural based solutions such as tree planting and SUDs are all positive across all parameters and can provide multi-functional benefits in the landscape.

In combination and cumulative effects are particularly relevant to the Nature Based solutions actions which together create long term positive effects across Population, Landscape, Biodiversity, Soil and Geology, Water and Material Assets whilst responding to climate change effects.

The resource management is also a critical theme as it promotes reduction and reuse and measures around illegal dumping and leaf composting all interact to generate positive effects.

Threaded throughout the CCAP is the theme of citizen engagement and awareness raising and this is critical to both inform, educate and engage citizens in relation to responding to climate change, whilst also identifying positive measures. Many of the engagement actions should increase public awareness and a sense of responsibility, collective and individual action in addressing and adapting to climate change. Positive in combination effects are identified for human health around modal shifts, and green infrastructure, behavioural change, tree planting and responding to flood risk.

4.2 MITIGATION MEASURES

Although most of the actions are identified as being consistent with the SEOs, a small number of actions mainly around Transport and Flood Resilience were identified as meriting additional mitigation measures. These are provided in Table 2 below:

TABLE 2 MITIGATION MEASURES

	Mitigation Measure	Included in CCAP Yes/no?
Overarching measure	An integrated approach to decision making in relation to these climate change actions is recommended.	Yes
Flood Resilience	Recommended text in green	
3	Prepare and Implement an Integrated Coastal Zone Management Plan that addresses natural and cultural heritage and aligns with the Marine Spatial Planning Directive.	
7	Develop template to capture impacts, response and costs (including ecosystem services/natural capital costs) for all major climate events.	

	Mitigation Measure	Included in CCAP Yes/no?
10	Update DLA urban drainage and flooding policies for current knowledge of flood risk and the latest best practice in drainage design promoting natural flood measures as a priority.	
New text before Actions 11- 18 in Flood Resilience Section	The following flood storage actions will incorporate nature based solutions and biodiversity enhancement measures where possible.(Refers to actions 11 to 18).	
New measures to be consistent with neighbouring Local Authorities	Communication and awareness campaigns on flood risk management and natural flood management measures.	

5 Monitoring

It is proposed, in accordance with Article 10 of the SEA Directive, to base monitoring on a series of indicators which measure changes in the environment, especially changes which are critical in terms of environmental quality, for example water pollution levels. Monitoring will focus on the aspects of the environment that are likely to be significantly impacted upon by the implementation of the CCAP 2019-2024.

The monitoring programme will consist of an assessment of the relevant indicators and targets against the data relating to each environmental component. Similarly, monitoring will be carried out frequently to ensure that any changes to the environment can be identified.

Overall, this Climate Change Action Plan will be monitored and updated on an annual basis, with a review and revision every five years. The Climate Change Action Plan was developed through DCC's Climate Change Sub-Committee of the Environment SPC and approved by Environment SPC.

The Executive Manager of the Environment & Transportation Department will report on progress to the SPC annually and the SPC will monitor progress towards the set targets. Every five years there will be a full review and revision of the plan taking into account demographic, technical and other changes that have occurred and any new targets that have been introduced.

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/ crèches/community parks/sports facilities and primary health centres	Every 2 years	(PPDD)
Flora and ap Fauna div spo	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 outside of designated sites.	Number of developments granted planning permission within designated sites.	Every 2 years	(PPDD) Parks and Landscape Services
			Number of Natura Impact Statements submitted to Dublin City Council	Every 2 years	Parks and Landscape Services
			Percentage increase or decrease of bat and otter populations in Dublin city	Every 2 years	Parks and Landscape Services

Environmental Receptor	Environmental Protection Objective	Target	Indicator	Frequency of Reporting	Department Responsible
		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 and 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 and Landscape Services
			Totals of, or reduction in the quantum of greenfield lands; length of linked green corridors		(PPDD) Parks and 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 and Landscape Services
		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 and Landscape Services
			Tree canopy cover within the city area to contribute to carbon sequestration (no. of trees)	Every 2 years	Parks and Landscape Services

Environmental Receptor	Environmental Protection Objective	Target	Indicator	Frequency of Reporting	Department Responsible
		Implementation of setback/ buffer zones of 10 m for development along watercourses	Number of planning applications adhering to the 10 m 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 Air Quality	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 regulation limits	Every 2 years	Roads and Traffic – Noise and Air Section
All Quality	Minimise emissions of pollutants to air associated with development activities and maintain acoustic	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
	quality.	Increase energy efficiency (reduce energy waste) from renewable energy	Number of objectives implemented from Dublin City Energy Strategy	Every 2 years	Energy Division

Environmental Receptor	Environmental Protection Objective	Target	Indicator	Frequency of Reporting	Department Responsible
		sources in line with the National Energy Efficiency Action Plan	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 and group heating systems	Every 2 years	Energy Division
		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 and Traffic – Noise and 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 and 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 and Engineering –

Environmental Receptor	Environmental Protection Objective	Target	Indicator	Frequency of Reporting	Department Responsible
					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 and Engineering - Water Division
		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 and Engineering — Water Division
Water	Water To protect and where necessary improve the quality and management of watercourses and	Achieve and maintain good status of all surface water bodies.	Improvement in Status of Water Body as per RBMP	Every 2 years	Environment and Engineering — Water Division
water and habitat ballegislation, including	with the requirements of all water and habitat based legislation, including the River Basin Management	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 and Engineering – Water Division

Environmental Receptor	Environmental Protection Objective	Target	Indicator	Frequency of Reporting	Department Responsible
	Plan of the Eastern River Basin District.	Identify and provide Surface Water pipelines as appropriate	Lengths of new Surface Water pipeline installed	Every 2 years	Environment and 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	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 and Transportation
	infrastructure to meet the needs of the city's population	Extend and improve the cycling and walking network	Number of new cycling and walking schemes implemented	Every 2 years	Environment and 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 and Landscape Services

Environmental Receptor	Environmental Protection Objective	Target	Indicator	Frequency of Reporting	Department Responsible
Cultural Heritage	To protect and where appropriate enhance the character, diversity and qualities of Dublin city's	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)
cultural, including architectural and archaeological, he		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 conditions attached	Every 2 years	(PPDD) City Architects – 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	Every 2 years	(PPDD)	

Environmental Receptor	Environmental Protection Objective	Target	Indicator	Frequency of Reporting	Department Responsible
			screened/assessed by the Conservation Officer for the City and City Archaeologist		City Architects – Conservation City Archaeologist
			Number of Architectural Conservation Areas designated	Every 2 years	(PPDD) City Architects – Conservation
Soils app chai spec city'	To protect and where appropriate enhance the character, diversity and special qualities of Dublin city's landscapes and soils and geological features	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 and Landscape 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 and Landscape Services
		Develop brownfield lands and vacant sites	Total area of brownfield lands and vacant sites developed	Every 2 years	(PPDD) Parks and Landscape Services
Inter- relationships	Maintain and improve the health of people,	Integration of blue and green infrastructure measures including in	Blue and Green Infrastructure measures		

Environmental Receptor	Environmental Protection Objective	Target	Indicator	Frequency of Reporting	Department Responsible
	ecosystems and natural processes Actively seek to integrate opportunities for environmental enhancement during adaptation to climate change	approved planning applications within Dublin City Council including SUDS, Integrated Wetlands, Hedgerows, Native tree planting scheme	implemented over lifetime of plan Number of Blue infrastructure features included in development		

5.2 CONCLUSION

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

The SEA and Appropriate Assessment processes have been undertaken in line with the Planning and Development (Strategic Environmental Assessment) Regulations 2004 to 2011 (as amended). Subject to the full and proper implementation of the mitigation measures outlined in this SEA Environmental Report and the Proposed CCAP, it is considered that significant adverse impacts on the environment will be avoided.

This report has been prepared by Minogue & Associates with all reasonable skill, care and diligence. Information report herein is based on the interpretation of data collected and has been accepted in good faith as being accurate and valid.

This report is prepared for Dublin City Council and we accept no responsibility to third parties to whom this report, or any part thereof, is made known. Any such party relies on the report at their own risk.

Version	Prepared by	Reviewed
Draft 21.01.2019	R Minogue MCIEEM	
Draft 2 4.02.2019	R Minogue	RM and DCC
Final 3 11.06.2019	R Minogue	

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1 INTRODUCTION

1.1 PURPOSE OF THIS SEA ENVIRONMENTAL REPORT

This Environmental Report has been prepared as part of the Strategic Environmental Assessment (SEA) of the Climate Change Action Plan 2019-2024 (CCAP) prepared by Codema, the Dublin Energy Agency and Dublin City Council.

The CCAP 2019-2024 was approved by Dublin City Council on 13th May 2019 and this is the final SEA ER. Where changes are made to this ER in light of submissions from the public consultation process, these are shown in bold font with a footnote noting the origin of the submission.

Following the public consultation period a series of recommendations were made in the Chief Executive's Report; these were screened for SEA and Appropriate Assessment and Annex C of this Final SEA ER presents this SEA Screening.

A SEA Statement has also been prepared now the CCAP is approved and is made available along with the Final CCAP

This SEA ER sets out how the SEA has been undertaken and presents the findings of the assessment of the actions on the CCAP together with its' reasonable alternatives.

The Environmental Report complies with the requirements of the Directive 2001/42/EC on the assessment of the effects of certain plans and programmes on the environment (the SEA Directive) as implemented in Ireland through Statutory Instrument (SI) No.435 of 2004 European Communities (Environmental Assessment of Certain Plans and Programmes) Regulations 2004 (as amended).

These regulations are a statutory requirement for plans or programmes which could have significant environmental effects, and the assessment process aims to identify where there are potential effects and how any negative effects might be mitigated.

The Environmental Report is required to include information that may be reasonably required, taking into account the following:

- Current knowledge and methods of assessment;
- Content and level of detail in the draft CCAP;
- Stage of the proposed CCAP in the decision-making process and
- The extent to which certain matters are more appropriately assessed at different levels in the decision-making process in order to avoid duplication of environmental assessment.

It is important to note that many of the actions included in the CCAP for Dublin City are identified as generating positive effects across a number of SEA parameters. The SEA Screening report included in the SEA Report of December 2018 Scoping supported this assessment. A small number of actions, primarily around transport proposals were identified through the screening for Appropriate Assessment as potentially giving rise to likely significant effects in the absence of mitigation, and this therefore triggered the requirement for a Stage II Appropriate Assessment and full Strategic Environmental Assessment.

1.2 Scale, NATURE AND LOCATION OF DUBLIN CITY CCAP

For the first time, Dublin's four local authorities have joined together to develop Climate Change Action Plans as a collaborative response to the impact that climate change is having, and will continue to have, on the Dublin Region and its citizens. While each plan is unique to its functional area, they are unified in their approach to climate change adaptation and mitigation, and their commitment to lead by example in tackling this global issue.

These CCAPs follow on from the publication of A Strategy for Climate Change Action Plans for the Dublin Local Authorities (DLAs), which was published in January 2017. The strategy used a structured approach that focused on seven key areas (Citizen Engagement, Planning, Energy, Transport, Water, Waste, and Ecosystems & Biodiversity), and set out how the DLAs would develop the four climate change action plans. The action plans will be unique to each local authority area but synchronised in their methodology.

This plan concentrates on the two approaches required to tackle climate change. The first, mitigation, consists of actions that will reduce current and future GHG emissions; examples of these include reductions in energy use, switching to renewable energy sources and carbon sinks. The second approach, adaptation, consists of actions that will reduce the impacts that are already happening now from our changing climate and those that are projected to happen in the future.

The actions in this draft CCAP for Dublin City Council will be continually monitored

and updated by a dedicated climate action team working across all Council departments. They will be assisted by the newly established Dublin Metropolitan Climate Action Regional Office, which will ensure that the overall plan is fully updated every five years to reflect latest policy, technology and climate-related impacts. The new office will work with Codema, as technical support and research partner, to ensure that the plans continue to be informed by national and international best practice.

The actions in the CCAP are presented around a number of themes as follows:

- Energy and Buildings
- Transport
- Flood Resilience
- Nature Based Solutions
- Resource Management.

Collectively, these collectively address the four targets of this plan, which are:

- A 33% improvement in the Council's energy efficiency by 2020
- A 40% reduction in the Council's greenhouse gas emissions by 2030
- To make Dublin a climate resilient region, by reducing the impacts of future climate change -related events
- To actively engage and inform citizens on climate change.

As such, this CCAP encompasses the functional and administrative area of Dublin City Council.

1.3 STRATEGIC ENVIRONMENTAL ASSESSMENT Under Directive 2001/42/EC - Assessment of Effects of Certain Plans and Programmes on the Environment, certain plans and programmes require an environmental assessment. This is known as the Strategic Environmental Assessment (SEA) Directive. Article 1 of this Directive states that its

objective is:

'to provide for a high level of protection of the environment and to contribute to the integration of environmental considerations into the preparation and adoption of plans and programmes with a view to promoting sustainable development.'

1.3.1 STRUCTURE AND PREPARATION OF THIS ENVIRONMENTAL REPORT

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

TABLE 3 INFORMATION REQUIRED TO BE CONTAINED IN AN ENVIRONMENTAL REPORT.

Schedule 2B of Statutory Instrument 436 of 2004	Addressed in this SEA ER
(a) an outline of the contents and main objectives of the plan and relationship with other relevant plans	Chapter One Introduction and Chapter Two Methodology outlines contents and main objectives
	Chapter Three details the relationship with other relevant plans
(b) the relevant aspects of the current state of the environment and the likely evolution thereof without implementation of the plan	Chapter Four Baseline Environment provides this information
(c) the environmental characteristics of areas likely to be significantly affected	Chapter Four Baseline Environment provides this information
(d) any Issues and Threats problems which are relevant to the plan including, in particular, those relating to any areas of a particular environmental importance, such as areas designated pursuant to the Birds Directive or Habitats Directive	Chapter Four Baseline Environment provides this information
(e) the environmental protection objectives, established at international, European Union or national level, which are relevant to the plan and the way those	Chapter Five: SEA Objectives provides this information

objectives and any environmental
considerations have been taken into
account during its preparation

(f) the likely significant effects on the environment, including on issues such as biodiversity, population, human health, fauna, flora, soil, water, air, climatic factors, material assets, cultural heritage including architectural and archaeological heritage, landscape and the interrelationship between the above factors

Chapter Seven, Significant Effects on the Environment provides this information

(g) the measures envisaged to prevent, reduce and as fully as possible offset any significant adverse effects on the environment of implementing the plan

Chapter Eight, Mitigation Measures provides this information

(h) an outline of the reasons for selecting the alternatives dealt with, and a description of how the assessment was undertaken including any difficulties (such as technical deficiencies or lack of knowhow) encountered in compiling the required information

Chapter Six, Alternatives Considered provides this information and difficulties encountered are listed at the end of Chapter Two, Baseline Environment.

(i) a description of the measures envisaged concerning monitoring of the significant environmental effects of implementation of the plan

Chapter Nine, Monitoring provides this information

(j) a non-technical summary of the information provided under the above headings

This is provided as a separate document at the front of this publication

1.4 Report Preparation

The SEA Team worked with the DCC technical staff team and other specialists. The following consultants prepared this SEA ER:

 Ruth Minogue MCIEEM, AILI, (BSoc Sc) Social Anthropology, University of Manchester 1996, MA (Econ) Environment and Development, University of Manchester 1998, Dip Field Ecology, University College Cork 2003, ongoing CPD including

- certificate in Health Impact Assessment (2012) and diploma in Planning and Environmental Law (2017);
- Pat Doherty MCIEEM, MSc in Applied Environmental Science (Ecology), University College Dublin, 2003;BSc (Honours) in Environmental Earth Science, University of Wales, Aberystwyth, 2000; ongoing CDP including
- Habitat Assessment (NVC) and flora and fauna identification through IEEM, and
- Dr Ronan Hennessey, PhD Earth and Ocean Sciences, Higher Diploma in Remote Sensing and Geographical Information Systems, BSc Earth Sciences.

2 APPROACH TO STRATEGIC ENVIRONMENTAL ASSESSMENT

2.1 Introduction

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

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

- Strategic Environmental Assessment European Union 2013;
- SEA Resource Manual for Local and Regional Authorities, Draft Version, 2013;
- Integrating Climate Change into Strategic Environmental Assessment in Ireland – A Guidance Note, EPA, 2015;
- Developing and assessing alternatives in Strategic Environmental Assessment, EPA, 2015 and
- SEA of Local Authority Land Use Plans - EPA Recommendations and Resources (Version May 2018).

2.2 STAGES IN THE SEA PROCESS

The steps involved in SEA are as follows:

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

2.2.1 SCREENING

The SEA Regulations state that SEA is mandatory for certain plans while screening for SEA is required for other plans. A Screening assessment was undertaken and it determined the requirement to progress to full SEA. In conjunction with the SEA Screening, a screening under Article 6 (3) of the EU Habitats Directive has also been prepared and should be read in conjunction with the CCAP and this SEA ER.

2.2.2 SCOPING

The purpose of the SEA Scoping report is to identify the scope of the SEA and ensure that relevant data and environmental topics are included in the SEA. The Scoping report was issued to the

and the Plan.

statutory environmental authorities consultees in December 2018 for comment. The table below summarises the main issues raised by consultees and the SEA response to same.

TABLE 4 SCOPING SUBMISSIONS-	
Consultee Key Issue Raised	SEA Response
Scientific Officer, SEA Section	
Office of Evidence and Assessment. Environmental Prote	ection Agency, Regional
Inspectorate, Inniscarra, County Cork	
We welcome the preparation of the Plan, which	Noted
sets out a clear set of actions to be taken by	
Dublin City Council, in collaboration with other	
key stakeholders, over the next five years. The inclusion of clear targets will facilitate	
monitoring and reporting on the Plan	
implementation, which should in turn help to	
drive delivery.	
·	
We recognise the fundamental importance of	Noted, the SEA and AA have
ensuring that the National Transition Objective	helped to inform plan preparation
is underpinned by a clean, healthy and well-	and please see Chapter 8
protected environment. Considering this, it is important to develop and implement the Plan	Mitigation in particular
within the context of a wider and more	
integrated approach to environmental	
protection. The SEA should play a key role in	
ensuring that this is achieved and should inform	
decision-making around assessment and	
selection of actions and measures.	
The SEA should also assist in identifying ways to	Noted, in particular certain actions
maximise the potential co-benefits of climate-	in each theme already provide co-
related measures for air quality, human health,	benefits and the SEA has provided
biodiversity, water quality and other	additional mitigation to further
interrelated areas (i.e. win-win solutions).	enhance certain actions please
	see CCAP and Chapter 8
	Mitigation of this SEA ER
A key role of SEA is in assessing and informing	
the selection and refinement of actions and	
measures that maximise the co- benefits of	
climate actions for the wider environment and	
society, should be highlighted in the SEA Report	

Relevant Plans and Programmes

You should ensure that the Plan aligns with national commitments on climate change mitigation and adaptation. Actions and measures proposed should be consistent with the National Policy Position on Climate Action and Low Carbon Development, the National Mitigation Plan and the National Adaptation Framework, as well as considering any relevant sectoral and regional adaption plans.

We recommend including a flow diagram or/ schematic, illustrating where the Plan fits within the hierarchy of land-use, climate and related plans Noted and agreed, in response to this comment the SEA ER included a table that highlights consistency with these plans and programmes and also provides a preliminary schematic to illustrate the hierarchy of plans and programmes.

Please see Chapter 3.

It would be useful to explain the relevance of the various plans listed in section 2 of the SEA Scoping Report to the CCAP, for example by way of an additional column. Reference to the Draft Regional Spatial Economic Strategy, currently at consultation, should be included. Noted and agreed. Chapter 3 has been amended to provide this and a more detailed overview of key relevant plans and programmes is provided in Annex B of this SEA ER.

Greenhouse Gas Emissions

In preparing the Plan and SEA, the direct and indirect impacts of the Plan on greenhouse gas emissions and removals should be assessed. The Agency's most recent projections report Ireland's Greenhouse Gas Emissions Projections for 2017-2035 (EPA, 2018) should be taken into account.

Noted.

With support from the Sustainable Energy Authority of Ireland (SEAI), Codema developed an energy and emissions baseline, which shows the current level of emissions and energy efficiency for both DCC's own operations and emissions for the whole of Dublin City. Consideration of significant effects in Chapter Seven of this SEA ER discusses this point.

The National Mitigation Plan (NMP) identifies 106 actions to decarbonise electricity generation, the built environment and transport and to move towards carbon neutrality for agriculture, forest and land use sectors. The Plan should integrate and align with the relevant actions in the NMP, as appropriate.

Noted, this SEA ER addresses this in Table 3 and shows where the Dublin City CCAP actions are consistent with the National Mitigation Plan. Please note that many of the actions in the National Mitigation Plan are identified at central government level rather than local authority.

Adaptation

Codema carried out an adaptation risk assessment on behalf of DCC,

In preparing the Plan and SEA, you should consider how the impacts of climate change, individually and in combination, are likely to influence the implementation of the Plan.

The Plan should look to improve resilience of existing and planned critical infrastructure, systems and procedures to the effects and variability of climate change. Recent extreme weather events could be useful to assist in identifying areas where for further work is needed to improve resilience, e.g. the resilience of critical water service infrastructure to flooding and drought.

The Plan should include appropriate adaptation measures that can be implemented either directly or through relevant land use plans and/or specific plans e.g. Flood Risk Management Plans, Integrated Coastal Zone Management Plans etc. The Plan will also help inform local authority land use and transport planning within the county.

Additional aspects to consider may include changes in native species and habitats and the spread of invasive species, pests and pathogens.

EPA State of the Environment Report 2016

The EPA published our most recent State of the Environment Report in 2016 'Ireland's Environment – An Assessment (EPA, 2016). The recommendations, key issues and challenges described within this report should be considered, as relevant and appropriate to the Plan area in preparing the Draft CCAP and associated SEA. This report can be consulted at: http://www.epa.ie/irelandsenvironment/stateof theenvironmentreport/

Air quality

We welcome that the Plan will take into account the Draft National Clean Air Strategy (DCCAE), due to be finalised in 2019. Recent EPA reports on air quality should also be considered, in preparing the Plan and SEA. This includes the Air Quality in Ireland 2017 Report (EPA, 2018) which identifies and assesses the current climate change risks facing Dublin City. Research into people's attitudes and awareness was used in order to inform the stakeholder engagement actions of the plan.

A key principle and stage of the CCAP relates to adaptation and responses to same.

Noted, this is highlighted in Chapter 4 Baseline as a key issue for biodiversity and human health

Noted and utilised in this SEA ER. Please see Chapter 3.

Noted this is used in Chapter 4
Baseline Environment

which sets out the most recent status in each of the four air quality zones in Ireland.

Data on levels of atmospheric pollutants from the EPA's national ambient air quality monitoring network (http://www.epa.ie/air/quality/monitor/), should also integrated as appropriate. The pollutants of most concern are traffic-related, including Particulate Matter and Nitrogen Dioxide

Noise The Plan should take into consideration available noise action plans prepared within and adjacent to the Plan area. Noise action plans are designed to act as a means of managing environmental noise through land use planning, traffic management and control of noise sources. The third round of noise mapping is currently underway in Ireland and will be completed in 2018. http://noise.eionet.europa.eu/help.html.

Noted and included in Chapter Four.

Available Guidance & Resources Climate

The EPA has published guidelines to support Local Authorities in developing local climate adaptation strategies (EPA, 2016). The DCCAE have incorporated this EPA guidance into national level Guidelines, to also assist local authorities prepare adaptation strategies. (DCCAE, 20185).

The 'Climate Ireland' website provides information, support and advice to help local authorities, sectors and government departments to adapt to climate change and includes a Local Authority Adaptation Support Wizard. It can be consulted at http://www.climateireland.ie/#/

Renewable Energy The recently published Interim Guidelines for Planning Authorities on Statutory Plans, Renewable Energy and Climate Change (DHPCLG, 2017) should be taken into account, where relevant.

Water Quality Our WFD Application provides a single point of access to water quality and

Noted

catchment data from the national WFD monitoring programme. The Application is accessed through EDEN https://wfd.edenireland.ie/ and is available to public agencies. Publicly available data can be accessed via the Catchments.ie website

SEA Our website contains SEA resources and guidance, including: - SEA process guidance and checklists - list of relevant spatial datasets - topic specific SEA guidance, such as consideration of alternatives in SEA. You can access these resources at: http://www.epa.ie/pubs/advice/ea/

appropriate in this SEA.

Noted and used where

Best practice guidance on Integrated Biodiversity Impact Assessment is also available at:

http://www.epa.ie/pubs/reports/research/biodiversity/strivereportno90.html

SEA WebGIS Search and Reporting Tool

The EPA SEA WebGIS Search and Reporting Tool is a GIS based web application that allows users to explore, interrogate and produce an indicative report on key aspects of the environment in specific geographic areas. These reports are indicative and will provide an overview of key aspects of the environment within a specific plan area. This may be used to inform the SEA screening and scoping stages for Plans and Programmes with reference in the first instance to the land use sector, though it is also applicable to other sector plans. It may be accessed via www.edenireland.ie

Considered at SEA Screening stage of this CCAP.

State of the Environment Report – Ireland's Environment 2016 In preparing the Plan and SEA, the recommendations, key issues and challenges described within our State of the Environment Report Ireland's Environment – An Assessment 2016 (EPA, 2016) should be considered, as relevant and appropriate to the Plan. Opportunities for selecting 'win-win' solutions when developing climate-related

Noted, please see Chapter 3 for review of this and how the SEA and CCAP relates to the State of the Environment Report.

Noted, and agreed, where possible the preparation of the CCAP and SEA have sought to prioritize "win-win" actions.

measures, to address multiple environmental challenges (air, water etc.) should be prioritised.

2.3 BASELINE DATA

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

Baseline data was gathered for all parameters. Other data was gathered from the SEA ER of the Dublin City Council Development Plan 2016-2022, Irish Water, the EPA, Met Eireann and other sources as appropriate. Project level environmental assessments where available in relation to transport proposals and/or flood risk management proposals were also reviewed. Footnotes throughout the document, particularly in Chapter Four present the reference and source. The SEA has also used a Geographical Information System (GIS) in the following ways:

- To provide baseline information on a range of environmental parameters;
- To assist in assessment of alternatives;
- To help assess in-combination or cumulative impacts, and

- To provide maps to illustrate environmental parameters in the SEA Environmental Report.
- 2.4 APPROACH TO ASSESSMENT OF SIGNIFICANT ENVIRONMENTAL IMPACTS

The principal component of the SEA involves a broad environmental assessment of the objectives/actions of the CCAP. A methodology that uses the concept of expert judgement, public consultation, GIS and matrices, both to assess the environmental impact and to present the conclusions has been adopted in this SEA.

Key to assessing the above is setting a specific set of environmental objectives for each of the environmental topics. The objectives are provided in Chapter Five and include all aspects of the environment such as Cultural Heritage, Population and Human health, and Biodiversity, Flora and Fauna.

The assessment described within this Environmental Report aims to highlight the potential conflicts, if they are present, between the aims and proposals contained in this Dublin City CCAP with the Strategic Environmental Objectives. Furthermore the assessment examines the potential impact arising from the plan's implementation on sensitive environmental receptors.

The SEA Directive requires that information be focused upon *relevant* aspects of the environmental characteristics of the area likely to be significantly affected by the plan and the

likely change, **both positive and negative**, where applicable.

Chapter Seven provides a discussion, where relevant, on the significance and type of the identified impact in accordance with current guidelines.

The SEA legislation and guidelines highlight the importance of the integration between the preparation of the CCAP and the SEA and AA processes. The iterative nature of the SEA process is such that the CCAP is informed by environmental considerations throughout the preparation of the CCAP and development of actions as relevant. The Screening Statement in support of Appropriate Assessment Report and Natura Impact Report are separate documents to the Environmental Report both of which accompany this Dublin City CCAP 2019-2024.

2.5 MITIGATION

Section (g) of Schedule 2B of the SEA Regulations requires information on the mitigation measures that will be put in place to minimise/eliminate any significant adverse impacts due to the implementation of the CCAP. Chapter Eight of this SEA ER highlights the mitigation measures that will be put in place to counter identified significant adverse impacts due to the CCAPs implementation.

The CCAP has been prepared having regard to the environmental protection objectives contained within the Dublin City Development Plan 2016-2022. However, some unavoidable residual issues may remain and therefore mitigation measures are required. Chapter Eight details the mitigation measures necessary to prevent reduce and, as fully as possible, offset any significant adverse

impacts on the environment of implementing the CCAP.

2.6 Monitoring

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

2.7 STRATEGIC FLOOD RISK ASSESSMENT

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

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

The Strategic Flood Risk Assessment of the Dublin City CDP 2016-2022 has been used in this SEA ER as well as an assessment of any flood related actions and proposals. These findings have been integrated into

the CCAP and this SEA ER (See Chapters Four and Seven in particular).

2.8 Data Gaps

Data gaps are present in terms of human health and population at county level.

3 RELATIONSHIP TO RELEVANT PLANS AND PROGRAMMES

3.1 Introduction

Under the SEA Directive, the relationship between the CCAP and other relevant plans and programmes must be taken into account. A review of the relevant plans and programmes has been prepared as part of the SEA ER. The preparation of the CCAP must be considered within the context of a hierarchy of policies, plans and strategies which include international, national, regional and local level policy documents. These documents set the policy framework within which the proposed CCAP will operate.

The Dublin City Development Plan 2016-2022 (CDP) operates as the primary land use framework for the county and as such, key policies/objectives and environmental protective objectives and policies of the CDP will be applied during CCAP implementation stage.

A list of the key relevant international, national, regional and county policies included in the review are listed below in Sections 3.2 to 3.4. Please see Annex B for a summary of these plans and programmes and their relevance to the CCAP and SEA.

Section 3.5 of this Chapter provides a focused consistency check between Actions in the National Mitigation Plan and key policies of the Eastern Regional and Economic Spatial Strategies that are considered to be particularly relevant to this CCAP².

² This table was prepared on foot of the EPA Scoping submission which recommended aligning actions in the CCAP with those of the National Mitigation Plan. This opportunity was also used to check consistency with relevant policies/objectives

Finally, Section 3.6 identifies key principles that will inform the SEA process arising from this review.

The plans and programmes of particular relevance to this CCAP are highlighted in the review of plans and programmes which can be found in Annex B of this SEA ER³.

3.2 International

- UN Convention of Biological Diversity, 1992
- The Convention on Wetlands of International Importance (The Ramsar Convention) 1971 and subsequent amendments
- EU Environmental Action Programme to 2020
- SEA Directive Assessment of the effects of certain plans and programmes on the Environment, (2001/42/EC) 2001
- Environmental Impact Assessment Directive (85/337/EEC) (97/11/EC), 1985 and

Environmental Impact Assessment Directive (2014/52/EC)

- EU Biodiversity Strategy to 2020
- EU Directive on the Conservation of Wild Birds, (2009/147/EC) 1979.
 Known as the Birds Directive
- EU Directive on the Conservation of Natural Habitats and of Wild Flora and Fauna, (92/43/EEC), 1992 known as the Habitats Directive
- European Communities (Birds and Natural Habitats) Regulations 2011
- EU Green Infrastructure Strategy 2013
- The Stockholm Convention 2001

of the Draft Eastern Regional Economic and Spatial Strategy

³ Annex B was amended to reflect a recommendation by the EPA at Scoping Stage to provide a means to highlight relevance of plans to the CCAP.

- EU Soil Thematic Strategy
- Water Framework Directive (2000/60/EC) as amended
- Floods Directive (2007/60/EC)
- The Drinking Water Directive (DWD), (98/83/EC) 1998
- Groundwater Directive, (2006/118/EC) 2006
- EC Bathing Water Quality Directive, (2006/7/EC) 2006
- Paris (Climate Change) Agreement
- Kyoto Protocol
- The Ambient Air Quality and Cleaner Air for Europe (CAFE) Directive
- EU Directive on Waste, (2006/12/EC), 2006
- EU Directive on Waste (2008/98/EC), 2008
- EU Urban Waste Water Treatment Directive (91/271/EEC), 1991
- Directive 2009/28/EC on the promotion of the use of energy from renewable sources
- European Convention on the Protection of the Archaeological Heritage,
- 1992 (The Valletta Convention)
- Convention for the Protection of the Architectural Heritage of Europe, 1985 (Granada Convention)
- The European Landscape

Convention 2000

- The Aarhus Convention
- Environmental Liability Directive 2004/35/EC

3.2.2 National

- National Planning Framework 2018
- National Adaptation Framework
 2018
- Water Framework Directive River Basin Management Plans 2018
- National Mitigation Plan
- Sectoral Climate Adaptation Plans 2018
 - **Biodiversity: The draft Biodiversity Sectoral Adaptation** Plan considers terrestrial, freshwater and marine biodiversity and ecosystem services. The goal is to protect biodiversity from the impacts of climate change and to conserve and manage ecosystems so that they deliver services that increase the adaptive capacity of people and biodiversity. This is achieved by identifying adaptation options that will help to protect biodiversity and ecosystem services from the impacts of changing climate.
 - Draft Climate Change Sectoral Adaptation Plan for Built and Archaeological Heritage. The draft Plan, presents case studies on the impact of climate change on Ireland's heritage and identifies five goals with corresponding objectives and actions to meet those objectives.

GOAL 1

Improve understanding of the heritage resource and its vulnerability to climate change impacts

⁴ Additional detail on available sectoral adaptation plans was included on foot of a submission by the EPA on the draft SEA ER

Develop and mainstream sustainable policies and GOAL 2 plans for climate change adaptation of built and archaeological heritage Maintain Ireland's heritage GOAL 3 for future generations Communicate and transfer GOAL 4 knowledge **Exploit the opportunities for** built and archaeological GOAL 5 heritage to demonstrate value and secure resources⁴

- Local Authority Adaptation
 Strategy Development Guidelines,
 EPA 2016
- Our Sustainable Future A framework for sustainable development in Ireland (2012)
- The National Spatial Strategy 2002
 -2020
- National Landscape Strategy (2015-2025)
- 3rd National Biodiversity Action Plan, 2017-2024
- The Wildlife Acts 1976 to 2012
- National Heritage Plan (2002)- to be replaced by Heritage Ireland 2030 (issues paper out now)
- All-Ireland Pollinator Plan 2015-2020
- European Union (Invasive Alien Species) (Freshwater Crayfish) Regulations 2018
- Irish Water's Capital Investment Programme
- Guidelines for Planning Authorities on Sustainable Residential Development in Urban Areas (Cities, Towns & Villages) (2009)

- Geological Heritage Sites
 Designation (under the Wildlife Amendment Act 2000)
- Water Services Act (2007)
- Water Services (Amendment) Act (2012)
- Irish Water Services Strategic Plan SEA and AA (2015)
- Irish Water Capital Investment Programme (2017-2024) including forthcoming planning application for Ringsend WWTP upgrade.
- National Water Resources Plan -25
 year plan (Draft), SEA and NIS due
 2019. Plan is not currently
 available on Irish Water website.
- Waterways Ireland Heritage Plan 2014-2020
- The Planning System and Flood Risk Management Guidelines (and Technical Appendices) for Planning Authorities (DoEHLG, OPW), 2009
- National Climate Change Strategy (2007-2012)
- Review of Ireland's climate change policy and Climate Action and Low Carbon Bill 2013
- Smarter Travel, A Sustainable
 Transport Future, A New Transport
 Policy for Ireland 2009-2020

- Spatial Planning and National Roads Guidelines
- National Transport Strategy for Greater Dublin Area 2016-2023⁵
- Design Manual for Urban Roads and Streets (DMURS)
- Electric Vehicle Grant Scheme and VRT Relief
- National Monuments Act 1930 with subsequent amendments
- Architectural Heritage Protection -Guidelines for Planning Authorities (2011)
- National Inventory of Architectural Heritage (NIAH)
- Draft Landscape and Landscape Assessment Guidelines, (2000)
- Planning and Development Act 2000 (as amended).
- Planning Policy Statement, 2015
- Green Low Carbon Agriculture Environment Scheme (GLAS)
- National Cycle Policy Framework 2009-2020
- National Transport Authority's Permeability Best Practice Guide
- Public Transport Act 2016

3.2.3 REGIONAL AND COUNTY

- A Strategy towards a Climate Change Action Plan for Dublin 2017
- Eastern and Midland Assembly (Draft) Regional Spatial and Economic Strategy (2018)
- Eastern-Midlands Regional Waste Management Plan 2015
- Greater Dublin Area Transport Strategy 2016-2035
- Dublin City Council Development Plan 2016-2022
- Dublinl Local Economic and Community Plan 2016
- Dublin City Biodiversity Action Plan 2015-2020 (under review).
- Catchment-Based Flood Risk Management Plans (CFRMP)
- Eastern Catchment Flood Risk Assessment and Management (CFRAM) Study 2011-2016
- Greater Dublin Strategic Drainage Study

• Dublin City Council's Tree Strategy 2016-2021

3.4 SUMMARY OF KEY ACTIONS FROM THE NATIONAL MITIGATION PLAN AND POLICIES FROM THE DRAFT REGIONAL ECONOMIC AND SPATIAL STRATEGIES THAT ARE RELEVANT TO THIS CCAP.

TABLE 5 CONSISTENCY WITH ACTIONS IN THE NATIONAL MITIGATION PLAN RELEVANT TO THIS CCAP.

	National Mitigation Plan 2017	Climate Change Action Plan 2019-2023
Action 9	Develop proposals to establish regional climate action offices to coordinate Local Authority response to climate action.	Established and has co-ordinated CCAP for each of the Dublin Local authorities
Action 10	Ensure climate considerations are fully addressed in new National Planning Framework.	Indirectly through the Regional Spatial and Economic Strategy once adopted and requirement for Variations to CDP to incorporate the RSES.
Action 31	Warmth & Wellbeing Scheme – 1,500 homes will be upgraded for occupants who qualify for the scheme	Recommended as a Mitigation Measure in this SEA ER as follows: Promote and highlight the Warmth and Wellbeing Scheme in conjunction with HSE
Action 51	Investment in infrastructure and behavioural change interventions to encourage and support a shift to sustainable modes of transport.	Actions in the Transport section identify a comprehensive range of actions to encourage and support modal shifts
Action 89	Continue to support climate and land based research at national and international levels	The role of the Dublin Metropolitan CARO (which will oversee implementation of the CCAP) is to: • Assist the local authorities within the region in preparing their own Climate Change Action Plan • Develop education and awareness initiatives for the public, schools, NGOs and other agencies engaged in driving the climate change agenda and contributing to the National Dialogue on Climate Action on a local and regional basis • Link with third-level institutions in developing a centre of excellence for specific risks — in the case of the Metropolitan Region this will be for urban climate effects • Liaise and interact with the Dublin energy agency Codema

TABLE 6 RELEVANT POLICY OBJECTIVES FROM THE DRAFT REGIONAL SPATIAL AND ECONOMIC STRATEGY EASTERN AND MIDLANDS REGION

Please note the Regional Spatial and Economic Strategy is currently in draft form so the Regional Policies Objectives listed below may be subject to change prior to adoption.

Relevant Policy	Objectives from the Draft Regional Spatial and Econor	nic Strategy Eastern and Midlands Region
Low Carbon Economy RPO 6.20	Support enterprise development agencies and LEOs on the development of industries that create and employ green technologies and take measures to accelerate the transition towards a low carbon economy and circular economy.	Yes, actions (three in total) relating to Transport, Energy and Flood resilience references the Small Business Innovation Research (SBIR)
RPO 7.15:	Local Authorities shall take opportunities to enhance biodiversity and amenities and to ensure the protection of environmentally sensitive sites and habitats, including where flood risk management measures are planned.	Actions under Flood Resilience are consistent with this RPO These include identification of sites for integrated constructed wetlands and SUDs
RPO 7.17	Facilitate cross boundary co-ordination between Local Authorities and the relevant agencies in the Region to provide clear governance arrangements and coordination mechanisms to support the development of ecological networks and enhanced connectivity between protected sites whilst also addressing the need for management of alien invasive species and the conservation of native species.	Actions including Action 5 in Nature Based Solutions are consistent with this as follows: 5 Produce regional floodplain management guidelines - use Santry River as a demonstration
REGIONAL POLICY OBJECTIVES: Green Infrastructure RPO 7.21	Local authority Development Plan and Local Area Plans, shall identify, protect, enhance, provide and manage Green Infrastructure in an integrated and coherent manner and should also have regard to the required targets in relation to the conservation of European sites, other nature conservation sites, ecological networks, and protected species.	DCC County Development Plan 2016-2022 includes a large number of GI policy and objectives such as Dublin City Development Plan 2016-2022 (Policies CC4; GI1; GI10; GI12; GI14; GI19; GI29; GI30; SCO1; SI18, SN3; Section 16.2.1.2; Appendix 23) Actions in the Nature Based Solutions theme include a number of GI actions such as Action 80, for example:

Relevant Policy Objectives from the Draft Regional Spatial and Economic Strategy Eastern and Midlands Region				
		8:Develop Green Infrastructure Strategy for region		
RPO 7.22	Support the further development of Green Infrastructure policies and coordinate the mapping of strategic Green Infrastructure in the Region.	See comment above		
Greenways, Blueways and Peatways RPO 7.23:	Promote the development of a sustainable Strategic Greenway Network of national and regional routes, with a number of high capacity flagship routes that can be extended and /or linked with local Greenways and other cycling and walking infrastructure.	See Actions in Active Travel under Transport Theme		
Climate Change RPO 7.28	Within 1 year of the adoption of the RSES, the EMRA shall seek with other stakeholders to carry out an assessment of transport emissions in the Region to identify GHG forecasting and to analyse the emissions impacts of development in the Region.	This can be supported through the baseline study of Greenhouse Gas Emissions for the local authority undertaken for 2016 by Codema with support from SEAI.		
RPO 7.31:	Local Authorities shall develop, adopt and implement local climate action strategies which shall assess local vulnerability to climate risks, quantify the emissions produced within their jurisdictions, and identify, cost and prioritise adaptation actions in accordance with the guiding principles of the National Adaptation Framework	The CCAP is the draft action plan that will meet this objective.		
RPO 7.32:	Climate Action Regional Offices shall provide guidelines and support to the Local Authorities on the development, adoption and implementation of local climate action strategies (both mitigation and adaption). These guidelines shall include the specific actions and obligations and timescales for same that must be undertaken by the Local Authorities to comply with national policy.	As above, this Draft Climate Change Action Plan has been prepared by the Dublin energy agency Codema, in partnership with the Environment, Public Realm and Climate Change Policy Committee and the Elected Members of Dublin City Council. The Draft Action Plan was also prepared having regard to A Strategy towards Climate Change Action Plans for the Dublin Local Authorities, published in 2017.		
RPO 7.33:	EMRA supports the National Policy Statement on Bioeconomy (2018) and supports the exploration of opportunities in the circular resource-efficient	Action 19 in Energy: Expand and develop Small Business Innovation & Research (SBIR) programme		

Relevant Policy	Objectives from the Draft Regional Spatial and Econon	nic Strategy Eastern and Midlands Region
	economy including undertaking a bio-economy feasibility study for the Region to identify the area of potential growth in the Region to inform investment in line with the national transition objective to a low carbon climate resilient economy.	
Building Standards RPO 7.38:	Local Authorities shall report annually on energy usage in all public buildings and will achieve a target of 33% improvement in energy efficiency in all buildings in line with the requirements of the National Energy Efficiency Action Plan (NEEAP).	Stated target of the CCAP is a 33% improvement in council's energy efficiency by 2020. Baseline section of the CCAP provides a breakdown of this.
RPO 7.39:	Local Authorities shall include policies in statutory land use plans to promote high levels of energy conservation, energy efficiency and the use of renewable energy sources in existing buildings, including retro fitting of energy efficiency measures in the existing building stock and energy efficiency in traditional buildings. All new buildings within the Region will be required to achieve the Nearly ZeroEnergy Buildings (NZEB) standard in line with the Energy Performance of Buildings Directive (EPBD).	Actions in the Energy theme including Action 12:
RPO 7.40:	Support and promote structural materials in the construction industry that have low to zero embodied energy & CO2 emissions.	Several actions in the Energy Theme
Decarbonising Transport RPO 7.41	: Local Authorities shall include proposals in statutory land use plans to facilitate and encourage an increase in electric vehicle use, including measure for more recharging facilities and prioritisation of parking for EVs in central locations.	Several Actions in the Transport Theme address this eg: Action 1 and 2 for example.

3.3 KEY PRINCIPLES IDENTIFIED FROM REVIEW.

Following the review of the relationship between the above plans, policies and programmes the following key principles have been identified and this have been considered through the SEA and helped to inform the CCAP development.

Table 7 Principles from plan, policy and programme review.

SEA Topic	Principles/Implications for the CCAP and SEA	EPA State of Irelands Environment 2016 Key Issues	CCAP 2019-2024 Relevant Theme
Biodiversity, Flora and Fauna	 Conserve and enhance biodiversity at all levels Avoid and minimise effects on nationally and internationally rare and threatened species and habitats through sensitive design and consultation, recognising ecological connectivity where possible Facilitate species and habitat adaption to climate change Avoid and minimise habitat fragmentation and seek opportunities to improve habitat connectivity Ensure careful consideration of non-native invasive and alien species issues 	Implementation of legislation Climate change Environment and health and well being Nature and wild places	Nature Based Solutions Citizen Engagement and Awareness Flood Resilience Resource management
Population and Human Health	 Provide for sustainable communities with key services Energy efficiency in buildings and model transport shift 	Environment and health and well being Implementation of legislation Climate change Community engagement	Energy Transport Nature Based Solutions Resource Management Citizen engagement

SEA Topic	Principles/Implications for the CCAP and SEA	EPA State of Irelands Environment 2016 Key Issues	CCAP 2019-2024 Relevant Theme
	 A high quality environment to live, work and play in Avoid pollution and environmental health impacts (noise and air quality) through mitigation and design Awareness raising 	Sustainable economic activities	
Water	 Maintain and improve water quality Avoid and minimise effects on natural processes, particularly natural flood management and catchment processes through sensitive design and consultation Adapt and improve resilience to the effects of climate change Minimise water consumption/ abstractions Design SUDS to facilitate ecological improvement/ enhancement where possible 	Restore and protect water quality Implementation of legislation Climate change Environment and health and well being	Nature Based Solutions Resource Management Citizen engagement and awareness
Soil and Geology	 Conserve soil resources where possible and avoid waste of soil resources Maintain productive capacity and prevent erosion of soils Ensure careful consideration of non-native invasive and alien species issues 	Climate change Environment and health and well being Sustainable economic activities	Resource Management Nature Based Solutions Citizen engagement and awareness
Material Assets	 Avoid and minimise waste generation Maximise re-use of material resources and use of recycled materials 	Restore and protect water quality Implementation of legislation Climate change	Nature Based Solutions Resource Management Citizen engagement and awareness

SEA Topic	Principles/Implications for the CCAP and SEA	EPA State of Irelands Environment 2016 Key Issues	CCAP 2019-2024 Relevant Theme
	 Minimise energy consumption and encourage use of renewable energy Promote sustainable transport patterns and modes where possible. Plan and provide for sustainable water management and wastewater treatment Modal shifts and sustainable transport Awareness raising 	Environment and health and well being Sustainable economic activities	Flood Resilience Energy Transport
Air Quality and Climate	 Adapt and improve resilience to the effects of climate change Encourage reduction in greenhouse gases through transport, energy, built development. Minimise adverse impacts associated with air and noise quality 	Climate change Implementation of legislation Environment and health and well being	Energy Transport Resource Management Nature based solutions Citizen Engagement
Cultural Heritage	 Conserve, preserve and record architectural and archaeological heritage Avoid and minimise effects on historic environment features through sensitive design and consultation 	Environment and health and well being Sustainable economic activities	Nature based solutions Citizen engagement Transport
Landscape	 Integrate green and blue infrastructure considerations Improve landscape connectivity to surrounding areas 	Environment and health and well being Nature and wild places	Nature based solutions Flood resilience Citizen Engagement Resource Management

SEA Topic	Principles/Implications for the CCAP and SEA	EPA State of Irelands Environment 2016 Key Issues	CCAP 2019-2024 Relevant Theme
Climate change and sustainability	 Adapt and improve resilience to the effects of climate change Promote local/ sustainable sourcing of materials Promote sustainable design and innovation to reduce material consumption 	Environment and health and well being Sustainable economic activities Climate change Implementation of legislation	Nature based solutions Flood resilience Citizen Engagement Resource Management Energy Transport
Inter- relationships	 Maintain and improve the health of people, ecosystems and natural processes Adapt and improve resilience to climate change and extreme weather events Actively seek to integrate opportunities for environmental enhancement 	Environment and health and well being Sustainable economic activities Climate change Implementation of legislation Nature and wild places Restore and protect water quality Community engagement	Nature based solutions Flood resilience Citizen Engagement Resource Management Energy Transport

4 KEY ENVIRONMENTAL RESOURCES

4.1 Introduction

This chapter describes the environmental baseline for the Dublin City CCAP area. The baseline information presents the environmental context within which the CCAP will operate and the opportunities, constraints and targets placed on the plan in this regard. The environmental data is described in line with the legislative requirements of the SEA Directive and Regulations, as amended under the following environmental parameter headings:

- Population and Human Health
- Biodiversity, Flora and Fauna
- Soil and Geology
- Air and Climate
- Water
- Material assets
- Culture
- Landscape
- The inter-relationship between the above parameters will also be considered in this chapter.

4.1.1 THE PLAN AREA AND SPHERE OF INFLUENCE

The CCAP for Dublin City in the first instance identifies both general actions and more site specific actions. However, given that the four Dublin Local Authorities are preparing these CCAPs in tandem, there is also a regional aspect to

⁶ This paragraph is taken from the Urb Adapt Project Summary running till 2019 will use the Dublin Region as a case study that will allow for the integrated assessment and management of the sphere of influence. This is particularly relevant where plan actions relate to features such as rivers and/or landscapes that can and do cross local authority boundaries. Similarly mobile species may disperse over larger areas of the landscape and require consideration at a different scale. The potential for cumulative and in-combination effects (both positive and negative) are also a consideration in this SEA ER.

4.2 Population and Human Health

This section provides information on the current population and demographic trends in Dublin City and more broadly at Regional Level. Impacts can arise on people's health and quality of life from a range of environmental factors, often through a combination of environmental impacts such as landuse, water quality, air quality, noise and transport patterns. Many of these may be exacerbated from climate change effects and impacts.

When compared with their surrounding regions, urban areas are considered to be particularly vulnerable to these climatic changes. This is due to: the high concentrations of population, infrastructure and economic activities located in these areas, the exacerbation of climate impacts by urban-scale phenomena and dependency on surrounding regions for service provision⁶.

Figure 1 below presents population density for the Dublin City based on the 2016 Census. As the figure shows, population density varies throughout the county, with implications in terms of provision of services, ecological connectivity and maximising sustainable

current and future climate vulnerabilities within the context of existing climate and non-climate pressures and spatial planning practices. https://urbadapt.com/ transport and landuse. In terms of broad trends however, the figure below shows greater population densities closer to and in the city centre, with lower population densities to the east and western parts of the City.

5012 Fingal 3084 5328 7505 3690 4875 3347 1545 5125 4904 4390 2122 5334 7995 209 4604 2407 4846 3196 3342 Dublin City 7653 7993 County Boundary National Roads 2747 South Dublin 209 - 3500 3501 - 6000 2785 6001 - 10000 Dún Laoghaire 1729 10001 - 17500 17501 - 26265 Electoral Divisions 2016

Figure 1 Population Density of Dublin City (Census 2016)

Population Density (Census 2016) - Electoral Divisions

Map: RH Data: CSO; SDCC; TII; OpenStreetMap CRS: IRENET95 ITM Scale: 1:75,000 Date: 2019

720000

4.2.2 HUMAN HEALTH

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

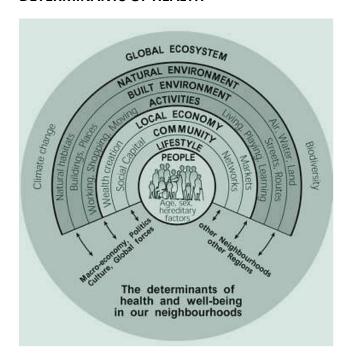
The Institute of Public Health states:

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

Disadvantaged people are more likely to live in poor quality built environments and have limited access to transport and local amenities supporting healthy choices. This has further implications in regard to climate change and CCAP actions such as, retrofitting of houses and potential exposures to air quality emissions.

Figure 2 below identifies key factors that contribute to human health. This is followed by a summary of the key environmental factors that can affect human health.

FIGURE 2 ENVIRONMENTAL DETERMINANTS OF HEALTH⁷



4.2.3 HUMAN HEALTH AND CLIMATE CHANGE⁸ The types of weather changes that are predicted for Ireland may cause health effects such as:

FLOODING, RISING SEA LEVELS AND SEVERE WEATHER EVENTS MAY HAVE DIRECT AND INDIRECT EFFECTS SUCH AS

- Direct Increased injury and drowning
- Indirect electrocution, carbon monoxide poisoning, displacement and significant disruption including for healthcare, mental health effects

WARMER WEATHER INCLUDING HEAT WAVES MAY

 Increase heat-related mortality and decrease cold-related mortality

⁷ The determinants of health and well-being (Barton & Grant 2006)

⁸ This text was included on foot of a submission on the draft SEA ER from the EPA

- Change environmental conditions altering water-borne and vectorborne disease patterns
- Increase winter survival in soil of pests and pathogens
- Increase UV exposure, which increases risk for skin cancers but may be beneficial for some conditions such as rickets & psoriasis
- Increase recreational water accidents but also increase wellbeing from sea bathing

COLD-SNAPS MAY

Increase cold-related mortality

WETTER WINTERS MAY

 Increase contamination of drinking water

DRIER SUMMERS MAY

• Improve wellbeing

All of the above are likely to affect populations unequally as there are likely to variable regional weather effects and variable regional vulnerability. People who are socially, economically, culturally, politically, institutionally, or otherwise marginalised may be especially vulnerable⁹.

There is increasing evidence in relation to mental health and climate change also¹⁰. The rapid climate change we are experiencing is one of the most urgent public health threats in the 21st century and is having a profound impact on

mental health. All countries are affected, although not all in the same way. Climate change has an even bigger impact on countries with poor infrastructure and limited means.

The effects on mental health are multiple. Many studies have found that wellbeing of humans is altered by temperature, for instance: extreme heat can impair the quality of sleep and can make physical activity difficult. However, when the temperature is more extreme, vulnerable groups (e.g. groups with mental health problems or with substance abuse problems, elderly, the poor) have a higher chance of worsened mood or behavioural disorders, violence, aggression or suicide¹¹.

4.2.4 Human Health and Noise Environmental noise is treated in a different way to noise nuisance. A nuisance noise is something that occurs from time to time and is not usually considered to be a feature of life in the local area. For example, a noisy dog or late night parties are short term occurrences. Even if they happen regularly, they are not caused by any long term activities and so they are thought of as nuisance noise.

Environmental noise is from long term or permanent sources, like major transport routes and factories. Noise from these sources has a different effect on people and is managed in a different way. The Environmental Noise Directive was written into Irish law in 2006, through the Environmental Noise Regulations (Statutory Instrument No. 140 of 2006). This law relates to the assessment and

⁹ This additional text was inserted on foot of a submission by the EPA

¹⁰ This additional text was inserted on foot of a submission by the Happy Minds Foundation

¹¹ http://www.nweurope.eu/projects/projectsearch/e-mental-health-innovation-andtransnational-implementation-platform-northwest-europe-emen/news-blogs/climate-changeand-mental-health-a-new-and-growing-challenge/

management of environmental noise. They provide for a common approach intended to avoid, prevent or reduce the harmful effects, including annoyance, due to exposure to environmental noise. These regulations do not apply to nuisance noise which can be dealt with under the Environmental Protection Agency Act.

Noise Action Plans are required under the Environmental Noise Directive (EU 2002/49/EC) transposed in to Irish law by SI 140 of 2006. Dublin City in conjunction with the other three Dublin local authorities have prepared a plan for 2013-2018 and establishes the measures that the councils intend to take to manage environmental noise exposure. The plan also contains an assessment of possible noise hotspots throughout the area. The Dublin Agglomeration Environmental Noise Action plan 2018-2023 was on public display until December 2018.

In the context of the CCAP, existing roads operate as the greatest noise generators. Thresholds for desirable low and undesirable high sound levels in the Noise Action Plan are as follows:

- Desirable Low Sound levels < 50 dB(A) Lnight • < 55 dB(A) Lday
- Undesirable High Sound levels > 55 dB(A) Lnight • > 70 dB(A) Lday

The noise mapping for roads show the M50 as the largest contributor to noise, with the N11 also generating significant noise emissions. Smaller areas of noise hotspots are present around the local authority area.

The Dublin Agglomeration Environmental Noise Action Plan 2013-2018 (and the Draft Dublin Agglomeration Environmental Noise Action Plan 2018-2023) sets out a number of potential mitigation measures to address noise issues that are under the local authorities remit.

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

The Air Quality Index of health¹² is based on hourly monitoring data from sites around Ireland and is based is based on measurements of five air pollutants all of which can harm health. The five pollutants are:

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

Dublin City is located within the 'Dublin City' region. The two key sectors that predominantly impact negatively on air quality are residential heating and transport¹³.

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

¹² http://www.epa.ie/air/quality/

¹³ Air Quality in Ireland 2016 EPA

and burning of specified fuel i.e. only smokeless fuel allowed

The EPA State of the Environment Report (2016) has further highlighted the role of environmental quality and health and in turn has highlighted the adoption of the newer more stringent World Health Organization guideline values for air quality. The Clean Air Policy Package (EC 2014) involves a move to tackling air emissions at source with potentially tighter air quality standards from 2020 onwards¹⁴.

4.2.6 Existing issues Population and Human Health.

The key issues associated with the Eastern and Midland RSES¹⁵ and population/human health were used for this section, complemented by issues identified in the Dublin City CDP 2016-2022, key relevant issues include:

- Addressing historic settlement pat terns leading to sprawl and Unbalanced regional development;
- Increased capacity/ infrastructural requirements for water and wastew ater treatment to service population growth;
- Increased requirements for public transport services and cycle corridors to service population growth and commuter belts;
- Increasing car dependency and associated emissions to air;
- Changes in climate, especially increases in temperature, will impact the concentration of pollutants in the air, as temperatures increase, so too will the concentration of pollutants. This is also the case with the changing strength and frequency of

high wind speeds due to climate change, which may cause pollutant dispersion and could potentially affect a larger area and population.

The following broad range of issues has been identified in the SEA ER of the Dublin City CDP 2016-2022, which include localised as well as more strategic issues:

- The effect of transport sector on air quality – results from air quality monitoring indicate that compliance with stringent new PM10, PM2.5 and NO2 standards may present problems in urban areas where there is heavy traffic.
- Impacts on residents from excessive noise uses, e.g., related to commercial activities, and complaints related to construction.
- Requirements of the 'Dublin Regional Air Quality Management Plan' to be taken into account.
- Implementation of the 'Dublin Agglomeration Action Plan relating to the Assessment and Management of Environmental Noise.'
- Need to encourage people to move into the city rather than out to the suburbs in the interests of sustainable development.
- Demand for more housing units and finite stock of zoned and serviced lands.
- The city has a high vacancy rate and should encourage the use of the existing vacant stock.
- The effect of changing economic circumstances on population figures.

¹⁴ SEA ER of National Mitigation Plan 2017.

¹⁵ SEA Environmental Report for the draft Eastern and Midland RSES https://emra.ie/draft-rses-public-consultation/

 Transboundary impacts with other Dublin Region Local Authorities. These cumulative impacts need to be taken into account.

4.3 BIODIVERSITY, FLORA AND FAUNA In general terms biodiversity¹⁶ refers to:

- Different habitats such as woodlands, wetlands, grasslands and estuarine habitats and the range of flora and fauna species they support.
- Different species such as plants, mammals, birds, insects, fish, microbes, mosses and fungi, and their inter-relationships such as food chains and cohabitation.
- Genetic diversity within species which is vital for healthy populations of individual species to survive. Ecosystems diversity which are the relationships between different species, their habitats and their local, non-living environment (geology, hydrology and microclimate).
- Features of the landscapes, which by virtue of their linear and continuous structure (such as hedgerows or streams) or their function as links (such as ponds or small woods) are essential for the migration, dispersal and genetic exchange of wild species.
- Flora and Fauna are the plant and animal life, respectively.

A wide range of economic and social benefits and services result from the protection of biodiversity, for example, it forms the basis of our landscapes, provides for food and clean water supplies, opportunities for waste disposal, nutrient recycling, flood storage and regulation, amenity and recreational opportunities through development of green infrastructure network.

It is increasingly recognised the nature based solutions can offer a further means to adapt and respond to climate change.

Ireland's draft Biodiversity Sectoral Climate Change Adaptation Plan states that 'Irish biodiversity is highly vulnerable to the impacts of climate change and has a low adaptive capacity compared to other vulnerable sectors. Climate change has major indirect impacts on Irish biodiversity through its interaction with other stressors, in particular habitat fragmentation and loss; overexploitation; pollution of air, water and soil; and spread of invasive species'¹⁷.

4.3.1 OVERVIEW

Dublin city is a largely urban environment and is partially built on reclaimed or infilled lands. The city and its bay, as a natural harbour at the confluence of several river basins, contain a variety of ecosystems that are biologically diverse and of international and national importance for the species which inhabit them and their associations. The ecological value of these areas is a resource for Dublin's citizens and also remarkable for such an urbanised capital city.

The City Council has an objective to promote connectivity of habitats and the enhancement of green corridors of public

¹⁶ Text from draft SEA ER of Clare CDP 2017-2023

¹⁷ This text was inserted on foot of a submission by Birdwatch Ireland

open space both for biodiversity and amenity values. The system of freshwater streams, rivers, estuarine habitats and beaches that is managed by Dublin City Council provides a network of connected natural areas, part of the green infrastructure of Dublin city. To protect and enhance this natural asset, several management plans have been prepared for all aspects, including biodiversity and flora and fauna, for the Dodder, Tolka, Liffey and North Bull Island. Habitat management plans have also been prepared for a number of city parks, including Bushy Park and Le Fanu Park.

Man-made habitats within the Plan area are also important biodiversity areas. Gardens provide habitats for a range of wildlife including various bird species, invertebrates, such as bees and butterflies and mammals, such as hedgehogs, mice, rats and foxes. These species move around between gardens using hedgerows and vegetated areas. These urban green spaces, however small, are therefore of importance as they form part of a network of green spaces across the Plan area including gardens, parks, graveyards, amenity walks, railway lines and patches of woodland and scrub within which animals and plants continue to thrive.

Article 10 of the Habitats Directive recognises the importance of ecological networks as corridors and stepping stones for wildlife, including for migration, dispersal and genetic exchange of species of flora and fauna. The Directive requires that ecological connectivity and areas of ecological value outside the Natura 2000 network of designated ecological sites are maintained and it recognises the need for the management of these areas through

land use planning and development policies.

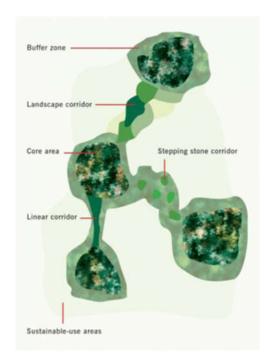
The council has an objective in the existing Plan to promote connectivity of habitats and the enhancement of green corridors of public open space both for biodiversity and amenity values. The system of freshwater streams, rivers, estuarine habitats and beaches that we manage provides a network of connected natural areas, the green infrastructure of Dublin city.

Green infrastructure strategies are recognised as an essential component in European, national and regional policies. The city's green infrastructure network includes historic parks, gardens and Georgian squares of national and international importance. Green infrastructure is recognised as comprising an essential component contributing to quality of life and well-being for residents, in addition to conserving habitat connectivity and reducing habitat fragmentation. To protect and enhance this natural asset, Dublin City Council has prepared several management plans for all aspects, including biodiversity and flora and fauna. These plans include the Dodder, Tolka, Liffey and North Bull Island.

FIGURE 3 OVERVIEW OF LANDSCAPE MOSAIC WITH STEPPING STONES AND ECOLOGICAL CORRIDORS¹⁸

http://www.sicirec.org/definitions/corridors)

¹⁸ source:



4.3.2 DESIGNATED SITES

Within the County there are habitats of high biodiversity and conservation value and a number of designated sites associated within the county which are designated as Special Areas of Conservation (SACs), Special Protection Areas (SPAs) and Natural Heritage Areas (NHAs).

Whilst Natural Heritage Areas (NHAs) and other designated sites do not form part of the Natura 2000 network they contribute to the network in a supporting role, often by providing stepping stones and ecological connectivity for mobile species in particular. Under the Wildlife Amendment Act (2000), Natural Heritage Areas are legally protected from damage from the date they are formally proposed for designation.

SPECIAL AREAS OF CONSERVATION AND SPECIAL PROTECTION AREAS

North Dublin Bay is a candidate SAC, and includes North Bull Island. The site straddles both Dublin City and Fingal County Council administrative areas and covers the inner part of North Dublin Bay, the seaward boundary extending from the

North Bull Wall Lighthouse to the Martello Tower at Howth Head.

South Dublin Bay is also candidate SAC. This site includes Booterstown Marsh, along the city boundary and straddles both Dublin City and Dún Laoghaire-Rathdown County Council administrative areas. The site lies south of the River Liffey and extends from the South Wall to the West Pier at Dún Laoghaire. The new habitats at Merrion Gates and just south is becoming increasingly important for roosting waterfowl and includes embryonic dunes and a sand spit. The largest stand of eelgrass on the east coast occurs within this designated area at Merrion Gates.

An offshore SAC—Rockabill to Dalkey Island SAC is outside the Dublin city boundary, approximately 2.4 km off the Dublin coastline and is designated for reefs and the harbour porpoise.

In addition, there exists the potential for a site located approximately 30 km east of Dublin city to become designated in the future as an SAC for the protection of 'leaking gas structures' (an Annex I habitat). This site is currently called the Codling Fault Zone SAC (site code: 003015.

SPAs are sites which are legally protected for birds under the EU Birds Directive. There are two in Dublin City: South Dublin Bay and River Tolka Estuary SPA and North Bull Island SPA. Article 4(4) of the Birds Directive states 'Outside these protection areas, Member States shall also strive to avoid pollution or deterioration of habitats'.

Local authorities must strive to avoid the deterioration of the habitats of Annex 1 bird species found outside of European sites. The Birds Directive also calls for protection of birds in the wider countryside (outside of SPAs) and this is

detailed further in the NPWS Programme of Measures to address compliance issues in C-418/04

Waterbirds and Sea Level Rise

In 2013 BirdWatch Ireland published a report on the Impacts of Sea-level Rise on the Birds and Biodiversity of Key Coastal Wetlands9. The report assessed the level of risk posed to each of 52 waterbird species by increasing sealevels such that those risks are:

high for species with wholly coastal species distributions and which rely on intertidal habitats (such as Shelduck Tadorna Knot **Calidris canutus and Sanderling** Calidris alba), to medium for species as above but that can feed in alternative locations, such as on grasslands (Light-bellied Brent Goose Branta bernicla hrota, **Oystercatcher Haematopus** ostralegus and Black-tailed Godwit Limosa limosa) and for those with predominantly coastal distributions but which are localised in Ireland (Greenland White-fronted Goose Anser albifrons flavirostris and Bewick's **Swan Cygnus columbianus** bewickii), and too low for other waterbirds whose distributions are not restricted to the coast (e.g. Teal Anas crecca, Golden Plover Pluvialis apricaria and Lapwing Vanellus vanellus) or which occur predominantly in deeper water (e.g.Red-throated Diver Gavia stellata, Great Crested **Grebe Podiceps cristatus, Cormorant Phalacrocorax**

carboand Common Scoter Melanitta nigra)

In addition, the report states that 'Coastal sites are under increasing pressure from a range of anthropogenic sources such as human development, fisheries, aquaculture and human recreation. It is likely that these factors will operate cumulatively with the effects of climate change. There is an increasing need to understand the cumulative nature of pressures already operating at our coastal sites and to predict how this may be exacerbated by future sea-level rise'.

Dublin Bay is the fourth most important site in the country for wintering waterbirds. It is critical that research is undertaken on the climate change impacts to waterbirds within Dublin City but also within the context of the Greater Dublin area where there is significant movement of species between wetlands¹⁹.

NATURAL HERITAGE AREAS (NHA)

Dublin City Council manages several proposed Natural Heritage Areas (pNHA) which are: North Dublin Bay, South Dublin Bay, Mooring 'Dolphins', Dublin Docks near Pigeon House Harbour, the Royal Canal and the Grand Canal. These are designated under the Wildlife Act as of national importance for the habitats and/or species present.

RAMSAR SITES

North Bull Island and Sandymount Strand are listed sites in Dublin city under the RAMSAR Convention of 1971 (signed by Ireland in 1985) as wetlands of international importance, particularly for wildfowl habitats. It is a voluntary treaty of which Ireland is a signatory. The

¹⁹ This text was inserted on foot of a submission by Birdwatch Ireland on the draft CCAP

RAMSAR committee for Ireland is currently compiling a national database on wetlands however there is currently no database for Dublin city.

SPECIAL AMENITY AREA ORDERS (SAAO) North Bull Island is a National Special Amenity Area, representing a landscape of national importance for its aesthetic and recreational value; Bull Island is one of three such designations in Ireland and was designated under Special Amenity Area Order in 1994. There is a proposed SAAO under consideration for the river Liffey valley. While these sites are designated by Ministerial Order on the basis of their outstanding amenity values, it is the natural heritage of both locations which provides the resource for recreation and amenity. Protection of biodiversity, flora and fauna is therefore a contributing factor to amenity potential.

NATIONAL NATURE RESERVES

North Bull Island and Baldoyle Estuary are both designated national nature reserves under the terms of the Wildlife Act.

FLORA PROTECTION ORDER SITES
The making of a Flora Protection Order under the Wildlife Act provides protection for nationally important sites for protected plants. North Bull Island is listed for lesser centaury, hemp nettle and meadow saxifrage. The Royal Canal is listed for opposite-leaved Pondweed.

4.3.3 Dublin Bay Biosphere
North Bull Island was recognised on the
UNESCO World Network of Biosphere
Reserves in 1981. North Bull Island is
unique among biosphere reserves given
its close proximity to a capital city. There
are two golf clubs on the island, the Royal
Dublin Golf Club and St Anne's Golf Club;
these are not part of the biosphere
reserve extents itself but are integral to

the site and have important links to the reserve.

The Dublin Bay Biosphere Biodiversity Conservation and Research Strategy 2016-2020 was published in 2017 and aims, firstly, to provide a coordinated framework for biodiversity conservation and research activities to be undertaken by DBBP and, secondly, to provide clarity regarding these planned activities to all stakeholders within DBB.

4.3.4 REGISTER OF PROTECTED AREAS
In response to the requirements of the
Water Framework Directive a number of
water bodies or parts of water bodies
which must have extra controls on their
quality by virtue of how their waters are
used by people and by wildlife have been
listed on Registers of Protected Areas
(RPAs) (entries to the RPAs have been
detailed further under Section 4.6.5).

4.3.5 AQUATIC BIODIVERSITY

A review of fish stocks carried out for the river Tolka by Inland Fisheries Ireland in 2011 indicated the presence of juvenile Atlantic salmon, represent the first record of wild salmon reproducing in this river in a century. A Fishery Enhancement Plan for Phase 1 of Cardiffsbridge Park, Finglas (2006) was prepared as part of the Master Plan for Cardiffsbridge Park. Dublin City Council has also collaborated with Inland Fisheries Ireland, Queen's University Belfast and local angling clubs in a genetic study of trout populations in all of the city's major rivers to determine spawning areas and population sources for future management of fisheries stocks.

Under Article 5 of the Shellfish Water Directive (2006/113/EC) Malahide Shellfish Area, located approximately 3.2 km to the north-east of Dublin City's boundary, has been designated as shellfish growing waters. A pollution-

reduction programme was established by the minister for the Environment, Community and Local Government to protect these waters and improve water quality.

4.3.7 ALIEN AND INVASIVE SPECIES
The control of invasive species in Ireland comes under the Wildlife (Amendment)
Act 2000. Under the European legislation, the Birds and Natural Habitats Regulations 2011 (SI 477 of 2011), Section 49(2) prohibit the introduction and dispersal of species listed in the Third Schedule (including Japanese Knotweed) whereby "any person who plants, disperses, allows or causes to disperse, spreads or otherwise causes to grow [....] shall be guilty of an offence."

Note some of the alien and invasive species are considered greater risk than others, and the potential for water corridors such as the Dodder to be vectors of the dispersal of these species is important; as well as accidental transfer or introduction arising from construction activities or recreational activities.

4.3.6 Existing Issues: Biodiversity, Flora and Fauna

Projected increases in temperature, wind speeds, cold snaps and rainfall will put an increased stress on biodiversity, by causing damage, habitat loss and increasing the prevalence of invasive species.

Flood plains and wetland areas are essential for flood control, pollution control, water quality and supply as well as act as vital carbon sinks, along with peatlands and woodlands, which could help address climate change.

Changes in precipitation levels, air and soil temperatures, water availability and sea level rise all have implications in terms of effects on biodiversity. The effects will be cumulative, long-term and often complex. The uncertainty that surrounds climate change and what will occur also adds to the complexity and uncertainty of identifying impacts.

Other key issues relate to the following:

- The potential for climate change to increase spread of non-native species, habitat change and increases spread of pathogens
- Using nature based solutions to adapt to climate change
- Ensuring increased walking and cycling proposals minimise adverse effects to flora and fauna.

The SEA ER of the Dublin City Development Plan 2016-2022 highlighted other environmental issues as they relate to biodiversity:

- 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.
- City Council area is traversed by a number of key regional river systems; future development within the city area should not have a deleterious effect on the aquatic life in these systems.
- 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 water quality and associated ecological impacts if no mitigation measures are put in place.
- Increased volumes of surface water run-off due to conversion of permeable landscapes to impermeable. This can lead to

increased flooding, erosion and alteration and direct loss of habitat.

The SEA ER of the Eastern and Midland RSES identifies further potential issues relating to this CCAP:

- Loss or disturbance of habitats and species from land use change and changes to land management; and
- in combination/cumulative effects without landuse plans and programmes such as forestry, fisheries etc.

Figure 4 Special Area of Conservation sites within 15km of the County

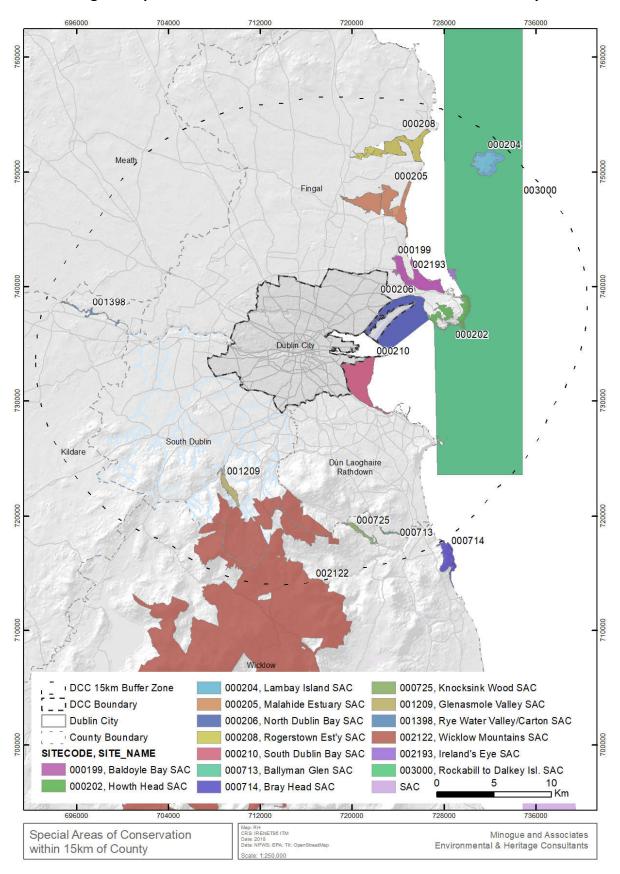


Figure 5 Special Protection Area sites within 15km of the County

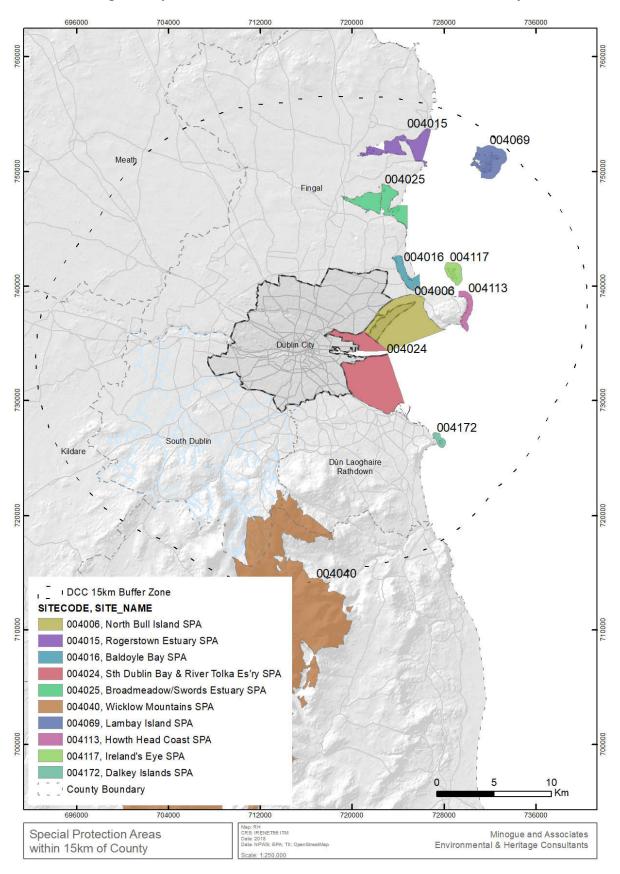
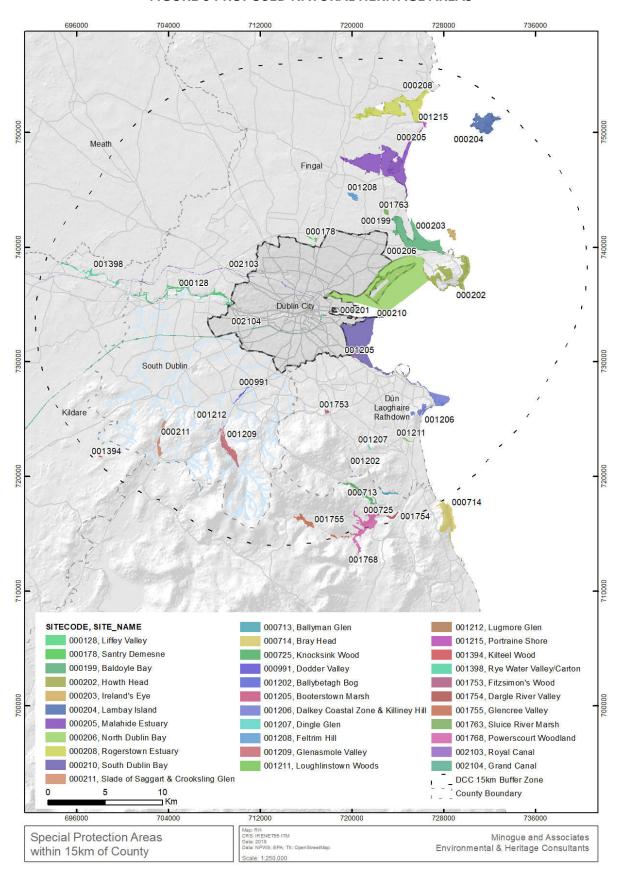


FIGURE 6 PROPOSED NATURAL HERITAGE AREAS



4.4 WATER RESOURCES²⁰ INCLUDING FLOOD RISK

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

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

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

4.4.2 Surface Waters

Surface Waters: Dublin city has river
water bodies monitored under the WFD:
including the Liffey, Tolka, Santry, Dodder

and Camac rivers. Dublin city also has four transitional waterbodies (estuaries) – the Upper and Lower Liffey estuary, the Tolka estuary and North Bull Island Estuary. The entirety of Dublin city's coastline falls within the Dublin Bay coastal water body. There are no lakes within the city

4.4.3 GROUNDWATER:

Groundwater is a further significant resource and refers to water stored underground in saturated rock, sand, gravel, and soil. Surface and groundwater functions are closely related and form part of the hydrological cycle. The protection of groundwater from land uses is a critical consideration and groundwater vulnerability is becoming an important management tool. The entire island of Ireland has been designated as a Protected Area for Groundwater under the WFD.

Groundwater is important as a drinking water supply as well as the supply to surface waters. In addition, groundwater supplies surface waters. Groundwater is exposed to higher concentrations of pollutants that are retained in the layers of rock and soil. The exposure to pollutants lasts much longer as groundwater moves at a slower pace through the aquifer. The quality of our drinking water supply, fisheries and terrestrial based habitats is intrinsically linked with groundwater quality. The Geological Survey of Ireland (GSI) aquifer categories are based on their vulnerability to pollution, i.e. the ease at which it can enter the subsurface layers. The classification of extreme or high vulnerability means that the groundwater in these areas is very vulnerable to contamination due to hydrogeological and soil factors.

-

²⁰ From Catchments.ie

The overall status of the Groundwater is good; the main risks are from urban derived pressures.

4.4.5 COASTAL WATERS

Marine Spatial Planning (MSP) will be a key requirement and challenge in planning for climate change in Ireland as a coastal county, will be of particular relevance to the local authority.

Directive 2014/89/EU established a framework for MSP and details the main goals (Article 5) and minimum requirements (Article 6). The Marine Spatial Plan must be in place by March 2021.

There are three designated bathing waters within the Dublin City Council area at Dollymount, Merrion Strand and Sandymount. Regular monitoring of bathing water quality is carried out during the bathing season in conformance with the requirements of the Bathing Water Quality Regulations 2008 (S.I. 79 of 2008).

Three Bathing waters are present in the Plan area –Dollymount, Sandymount and Merrion Strand. All three bathing waters were in compliance with the EU mandatory and the Irish national standards for bathing water quality in 2013. The most recent data is for 2017 and shows Dollymount and Sandymount achieving excellent/good quality broadly throughout the survey period; Merrion is recorded as having poor water quality on 9 survey days over the bathing season²¹.

4.4.4 REGISTER OF PROTECTED AREAS (RPA) Protected areas are areas that have been designated as needing special protection because of their particular importance for use as bathing waters, drinking water supply, growing and harvesting of

shellfish, conserving sensitive habitats and species or because they are particularly affected by eutrophication due to excessive inputs of phosphorus and/or nitrogen. The River Liffey and Estuary are listed on the RPA for Nutrient Sensitive Waters. Nutrient Sensitive Areas comprise nitrate vulnerable zones designated under the Nitrates Directive (91/676/EEC) and areas designated as sensitive under the Urban Waste Water Treatment Directive (91/271/EEC).

4.4.5 FLOOD RISK

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

A Strategic Flood Risk assessment was undertaken for the County Development Plan.

The highest tide ever recorded in Dublin City was on 3rd January 2014 reaching 3.014 metres in Malin. The second highest tide recorded was on 1st February 2002 at 2.950 metres in Malin. These were the highest tides recorded for the last 400 years, and possibly longer for Dublin Bay. To reduce vulnerability to sea level rise, a minimum safety of four metres above present sea level in the east coast of Ireland is recommended; this accounts for a rise in sea level of 0.5 metres, a storm

²¹ http://www.dublincity.ie/bathingwater. Accessed on 28th January 2019.

surge of 2.95 metres, and a safety margin[21].

It is important to note that sea level rise, while an important phenomenon to understand for Dublin City, is only one element that contributes to flooding issues in the City. It is also important to understand the other elements which, when combined with rising sea levels, contribute to flooding. This includes combinations of extreme tide levels, which are made up of astronomic tides and storm surges (fluctuations in water level due to atmospheric pressure, wind speed, seiches, etc) and wave action.

4.4.6 KEY ISSUES: WATER RESOURCES
The SEA ER of the DCC County
Development Plan 2016-2022 highlighted
the following issues:

- 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 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.

Other issues relating to water and climate change include coastal flooding and erosion, sea level rises and settlement, infrastructure and alteration of coastal habitats including estuaries.

- Avoiding the spread of alien and invasive species
- Opportunities to integrate blue infrastructure measures through flood risk management.

FIGURE 7 RIVERS IN DUBLIN CITY

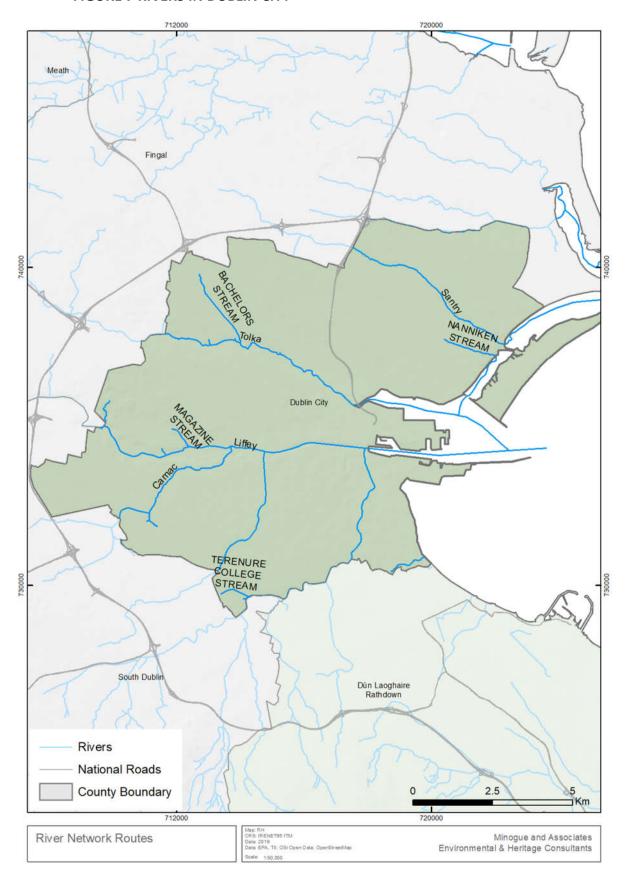


FIGURE 8 WATER FRAMEWORK DIRECTIVE SUBCATCHMENTS OF DUBLIN CITY

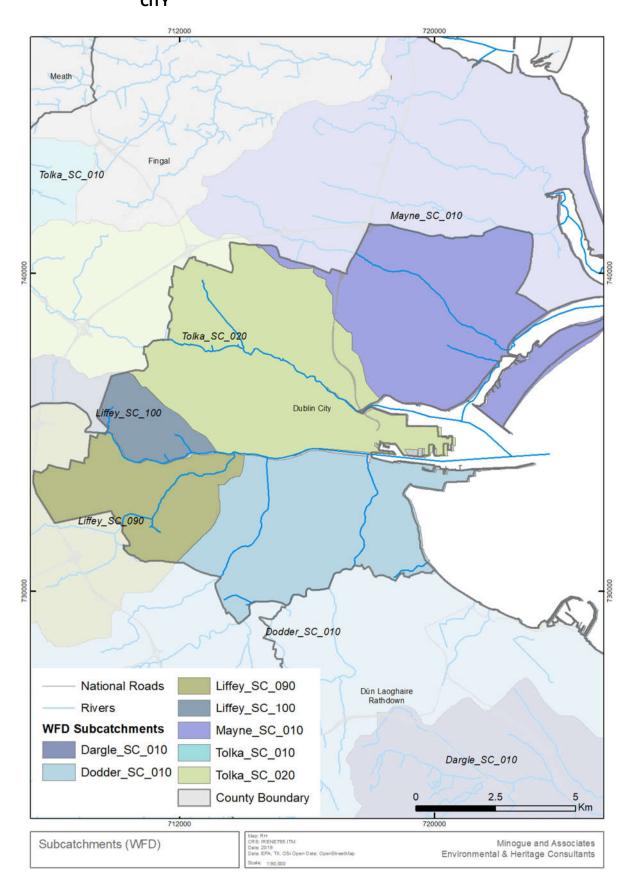


Figure 9 Water Quality of Surface Water Dublin City

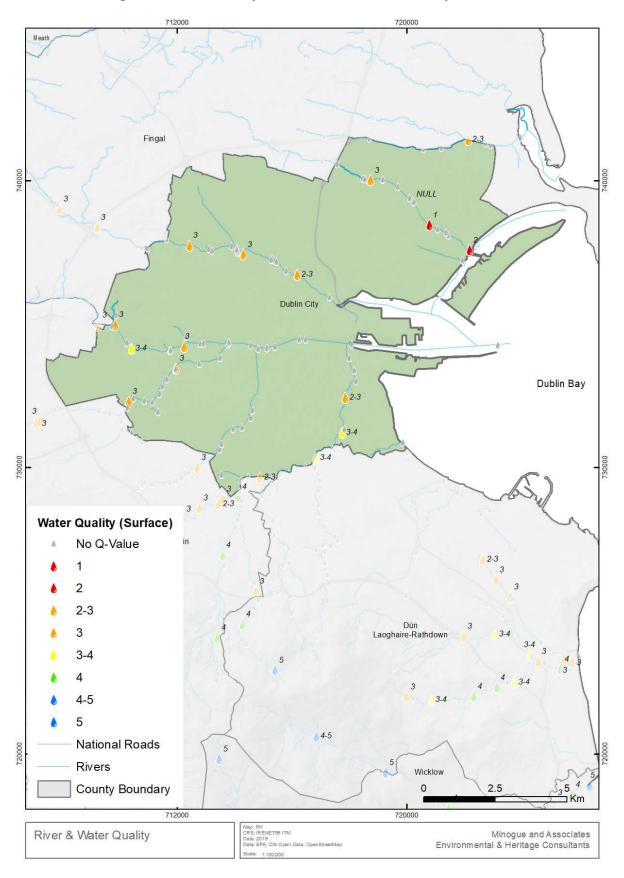
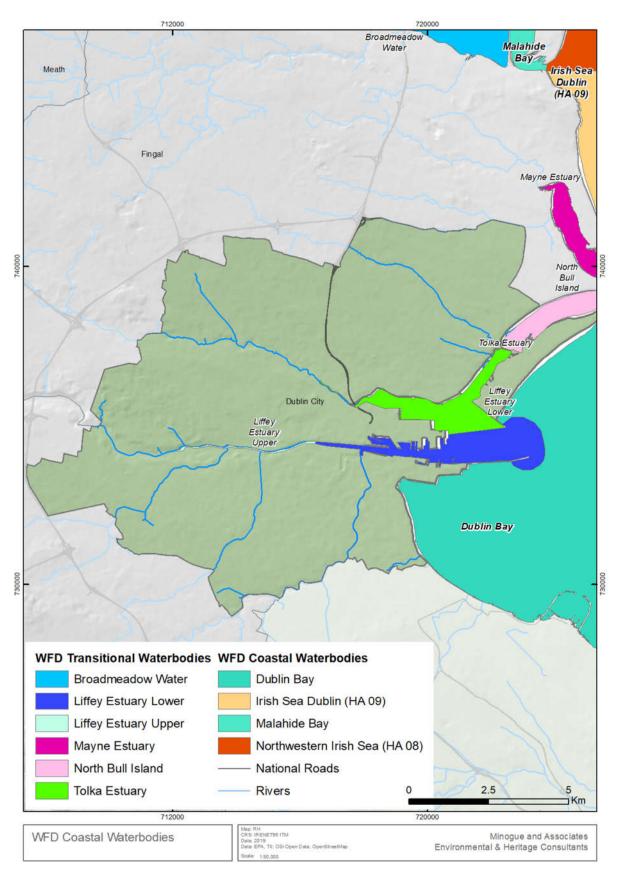


FIGURE 10 COASTAL WATERBODIES UNDER THE WFD FOR DUBLIN CITY



4.5 SOIL AND GEOLOGY

4.5.1 GEOLOGY

Bedrock geology in the county comprises limestone, see **Figure 11**. There are also number of Geological Heritage Sites in the County, see **Figure 12**.

4.5.2 SOIL

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

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

The soil of Dublin is derived from glacial till of Irish Sea origin, with limestone and shale and is largely comprised of greybrown podzols. Lighter-textured greybrown podzolics are good all-purpose soils, while heavier-textured members are highly suited to pasture production, responding well to manurial and management practices. The coast of Dublin has a layer of alluvium overlying the topsoil, which is a result of the lowlying status of the city. This sequence of

soils remains only in undisturbed areas of the coast. As Dublin is a very built-up city, much of the topsoil and alluvium have long since been removed.

Given the historical landuse, systematic geochemical mapping of soils in the greater Dublin area was undertaken as part of a EU project. Over 1000 samples were taken across the greater Dublin area, including the sampling of 368 points within Dublin city's public parks and open spaces. Results show that inner city soils typically have higher levels of potentially harmful elements and organic pollutants than areas towards the outer city; this is a pattern seen in many cities around the world and can be tied to historical industrial activities as well as fossil fuel burning and use of leaded paints and fuels. Polycyclic aromatic hydrocarbons (PAHs) are also present in the soil, reflecting historic coal burning and other historic industrial emissions, as well as more modern transport-related emissions. The presence of polychlorinated biphenyls (PCBs) is likely associated with historic industrial activities and paint particles in the soil.

A significant portion of Dublin City is built on reclaimed or infilled land. This reclamation began back in the eighteenth century. The North Docklands were reclaimed between 1717 and 1729. A 1 km stretch of land between the city centre and the river Dodder was reclaimed by Sir John Rogerson between 1917 and 1927. North Lotts and East Wall were reclaimed by the end of the 1750s. A bank was constructed along the present South Lotts Road by 1760. The area between these banks was gradually reclaimed together with adjoining areas of the Dodder estuary. The dry dock between the Grand Canal Dock and the Dodder was filled in 1918. Reclamation continued progressively in an easterly direction from

the beginning of the nineteenth century. Traditionally the material used for reclamation in Dublin included construction and demolition waste, waste topsoil and municipal and industrial wastes. For example, Ringsend Park was originally a landfill site of unknown material and has only a thin layer of topsoil. The existing promenade along Strand Road was also infilled with landfill materials.²² Many of the city's parks were built over landfill sites, including Fairview Park and Tolka Valley Park.

It is important to both recognise and promote this role in terms of the carbon storage capacity of soil, potential biodiversity and water benefits (subject to agricultural practice) and food security.

Figure 13 presents the county soil map.

4.5.3 EXISTING ISSUES: GEOLOGY AND SOIL

- Maintaining and enhancing soil function and its carbon storage role where possible.
- Addressing extent of soil sealing, increased surface run off and poor permeability of lands in the county
- Retention and creation of areas of greenfield in terms of open space, green infrastructure, permeability and biodiversity considerations.
 - Promoting soil conservation and food security in areas of agricultural production in the county.

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

22

²² Environmental Impact Statement, Sutton to Sandycove (S2S) Project.

Figure 11 Bedrock Geology

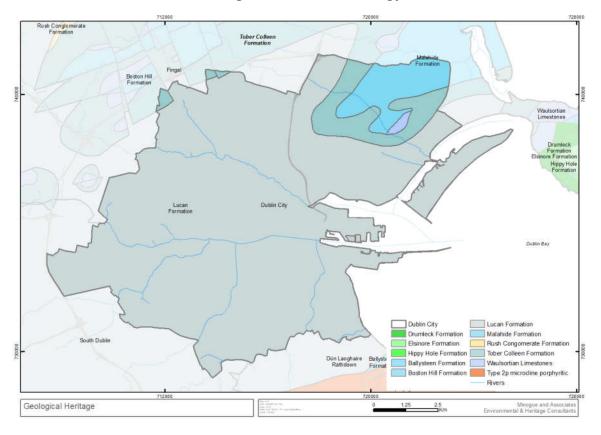


FIGURE 12 GEOLOGICAL HERITAGE SITES IN THE COUNTY

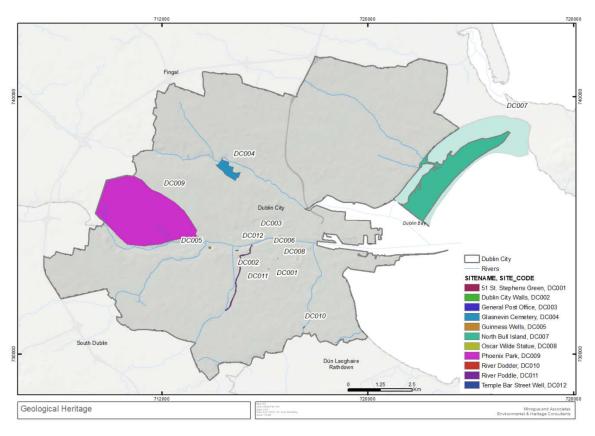
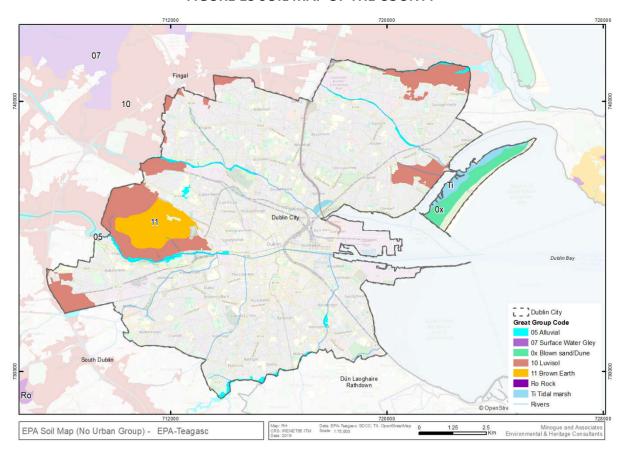


FIGURE 13 SOIL MAP OF THE COUNTY



4.6 CULTURAL HERITAGE

Heritage, by definition, means inherited properties, inherited characteristics and anything transmitted by past ages and ancestors. It covers everything, from objects and buildings to the environment. Cultural heritage includes physical buildings, structures and objects, complete or in part, which have been left on the landscape by previous and indeed current generations. It contains a number of actions to include communicating the story of the County's heritage, caring for and managing that heritage, and increasing the level of community involvement in heritage.

Dublin is an ancient city with many sites of archaeological, architectural and cultural heritage importance. As a vibrant and expanding city, there is a continuing need to balance day to day operations with protection of the cultural resource that is so much a part of the fabric of Dublin and one of the key draws for the tourism industry.

4.6.1 ARCHAEOLOGY

Archaeological heritage is defined as including structures, places, caves, sites, features or other objects, whether on land, underwater or in inter-tidal zones. All archaeological structures, constructions, groups of buildings, development sites, all recorded monuments as well as their contexts, and moveable objects, situated both on land and underwater are part of the

Therefore the archaeological heritage of the area is not confined to the archaeological sites within the Record of Monuments and Places. It also includes any archaeological sites that may not have been recorded yet, as well as archaeology beneath the ground surface, or underwater as well as the context of any such site discovered.

Dublin City Council is rich in archaeology and has a diverse range of monuments covering a number of historic eras. It is deemed that the plan area is of high archaeological potential due to the potential for the presence of hitherto unknown sub-surface archaeological remains. This determination is based on the presence of substantial archaeological remains from many periods of the past within the city area. Dublin originated first as two separate monastic enclosures (Átha Cliath and Linn Dubh), and then as a fortress for Viking ships on the Liffey.

After the Anglo-Norman invasion of 1170, the walled city expanded reclaiming land at wood quay and large suburbs developed to the north (Oxmantown), to the south and west around Ship Street and St Patrick's Cathedral and the Liberties. On the outskirts were villages such as Chapelizod, Finglas and Donnybrook, etc.

Much of the medieval city was still intact in 1610 when John Speed mapped it for the first time. During the eighteenth century however, the Wide Streets Commission reshaped the old medieval city, and created a network of main thoroughfares by wholesale demolition or widening of old streets or the creation of entirely new ones. The result is that it is difficult to grasp the form of the old city or to understand the context of surviving medieval fabric/street patterns at ground level. Nevertheless, much remains that is of value and which can be reinforced or stitched back together and presented in the city's renewal. A clear strategic vision is required for the oldest part of the city.

The City Walls Conservation Plan goes some way to addressing this but should be extended to address the suburbs as a second phase.

Given the limited development in recent years, there have been fewer opportunities to conduct archaeological investigations, given the likely presence of sub-surface archaeology. Church curtilages are important historical resources and can often be used for recreation and amenity purposes as well however this may also lead to the disturbance of archaeological features.

INDUSTRIAL HERITAGE

From around 1750 onwards, numerous large-scale industries developed in Dublin which had a profound effect on the city's economy and society, and which contributed greatly to the physical character of the city today. The term 'industrial heritage' covers everything from the extraction of raw materials, manufacturing and processing into usable forms or finished products, public utilities, transport, communications and energy production. In some contexts it also includes military maritime and institutional functions. It is an aim of the plan to minimise interference in original maritime and transport-related heritage in order to protect docks, quays, sea walls and historic industrial fabric where possible.

The importance of industrial heritage in the shaping of Dublin city cannot be underestimated. The Guinness Brewery is one of Dublin's most important industrial heritage sites and Guinness is identified as a significant brand internationally and is inextricably linked with the capital. With the exception of Guinness however, industry is currently a critically underutilised and undervalued aspect of Dublin's built heritage.

A key issue in the conservation of the city's built heritage is recording and conserving Dublin's unique industrial heritage, a substantial portion of which has already disappeared without record. Industrial buildings are not always of high architectural significance and so are poorly represented on the Record of Protected Structures for this reason. The National Monuments Act (amended) protects sites and monuments down to, but not after, 1700 AD. In this way, industrial heritage has continually fallen between the two primary statutory instruments for protection of built heritage. Dublin City Council has undertaken an inventory of industrial heritage. The Dublin City Industrial Heritage Record (DCIHR) and the Development Plan have regard to this record.

UNESCO WORLD HERITAGE
To build on the city's civic identity, the historic centre of Dublin city is currently on Ireland's Tentative List of UNESCO World Heritage Sites.

4.6.2 BUILT HERITAGE

Part IV of the Planning and Development Act 2000 (as amended) defines the term "architectural heritage" as structures and buildings together with their settings and attendant grounds, fixtures and fittings, groups of structures and buildings and sites, which are of architectural, historical, archaeological, artistic, cultural, scientific, social or technical interest, and "where a structure is protected, the protection includes the structure, its interiors and the land within its curtilage (including their interiors) and all fixtures and features which form part of the interior or exterior of all these structures".

An Architectural Conservation Area (ACA) is a place, area, group of structures or townscape that is of special, architectural,

historical, archaeological, artistic, cultural, scientific, social or technical interest or value, or contributes to the appreciation of protected structures.

There are currently just over 9000 structures listed for protection in the Record of Protected Structures; Dublin City Council is currently revising and updating this register. These structures include individual houses, warehouses, shop fronts, churches, boundary walls, bridges, building exteriors etc. A considerable number of these buildings are considered to be of Local Importance under the National Inventory of Architectural Heritage (NIAH) Guidelines.

In addition to the Record of Protected Structures, structures of architectural heritage merit, although not put forward for inclusion in the Record of Protected Structures (RPS) may be of local value and may continue to contribute to the identity of a particular area of the city. The development plan seeks to actively protect buildings/structures of heritage value, which may not be protected, but which make a positive contribution to the area and identity of the city. Dublin city is unique in form and character. The contributions of any features, which give identity to and enhance that uniqueness, have been given recognition in the preparation of the Plan.

Figure 15 shows the archaeological recorded sites in the County and **Figures 16** and **17** shows the Record of Protected Structures, ACAs and Conservation Areas.

4.6.3 Existing Issues: Cultural Heritage

- Potential for additional archaeological resources
- Adapting older buildings to become more energy efficient or enhance their energy efficiency

- Potential climate change effects on built heritage associated with more extreme climate events.
- Given the spatial concentration of many built heritage features associated with the coastline of DCC the potential effects of sea rises, and surges could increase effects on these features and their settings.
- Protected structures close to flood risk areas
- Increased storm activity has implications for those coastal sites prone to erosion;

 Coastal defence construction pressures such as construction of sea walls, gabions, rock armour revetments and groynes.

These influences may result in damage to archaeological features in the coastal zone (e.g. middens) and intertidal and subtidal areas (e.g. shipwrecks).

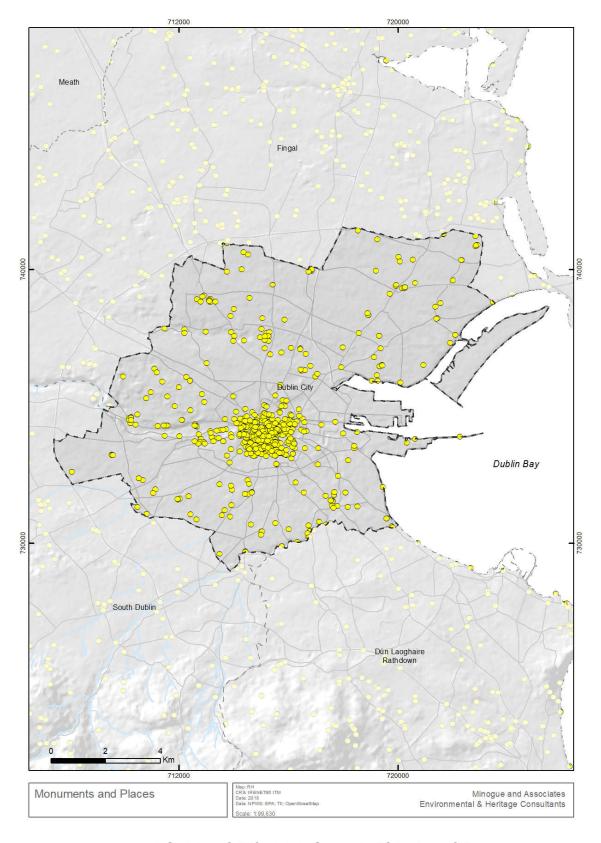


FIGURE 14 SITES AND MONUMENTS DUBLIN CITY

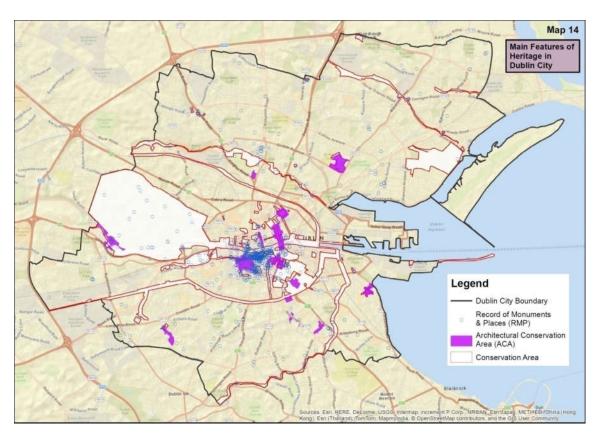
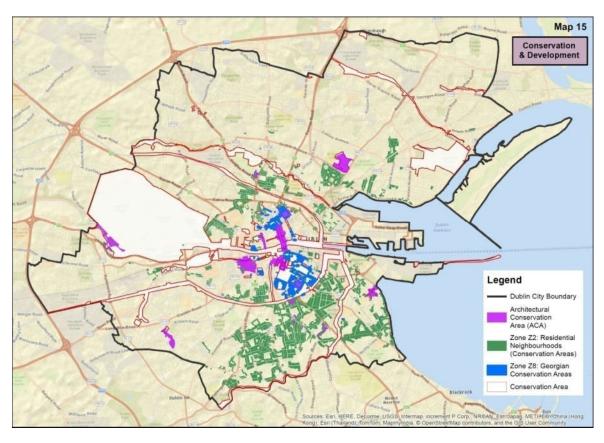


FIGURE 15 RMP, ACAS AND CONSERVATION AREAS DUBLIN CITY (FROM SEA ER OF DUBLIN CITY CDP)





4.7 LANDSCAPE

Landscape consists of the public and private landscape of the city. It fulfils an array of environmental, ecological, social, recreational and aesthetic functions of the developing city. Dublin City has significant green spaces through the provision of parks such as the Phoenix Park, St Anne's Park and a number of institutional lands, including Trinity College Dublin.

The city's parks, institutional lands, private gardens and graveyards all contribute significantly to the biodiversity resource in the city. Remaining hedgerows, semi-natural grasslands and trees are of particular importance.

The city's landscape and parks contain significant wildlife resources, including woodland, semi-natural grasslands and remnant hedgerows. In this way, Dublin's city's parks support species of local and national importance, including otters, bats, hedgehogs and kingfishers. The city's parks also play a significant amenity and educational role in the city.

The townscape of the city is as significant as it creates and contributes to the urban character. This varies within the City, from the older medieval areas to Georgian Dublin and newer redevelopment areas such as the Grand Canal Dock.

Key vistas and viewpoints/landmarks in the city also contribute to local character and include the Grand and Royal Canals, coastal views as well as various tall structures including church steeples and landmarks such as Wellingtons Column in the Phoenix Park.

- 4.7.1 EXISTING ISSUES: LANDSCAPE Landscape measures represent a key opportunity to adapt and respond to climate change impact through the following
 - Blue and green infrastructure planning and delivery
 - Allowing for landscape scale response to increased water levels and flood risk
 - Planning for ecological connectivity
 - In terms of climate change and landscape issues, potential issues including alteration of landscapes associated with changing vegetation, for example changing forestry practices, increased surface water and drying out of wetter, acidic soils.

4.8 AIR QUALITY AND CLIMATE

4.8.1 AIR QUALITY

The Air Quality Index for health (EPA) provides air quality information with health advice for both the general public and people sensitive to air pollution. The index is displayed on a colour-coded map, updated hourly. The index is based on information from monitoring instruments at representative locations in each region. Dublin City is located within the 'Dublin City' region. Air Quality is generally classified as 'good'.

Further information on Air Quality and Human Health is provided in Section 4.2.4.

4.8.2 CLIMATE CHANGE AND GREENHOUSE GAS EMISSIONS

Adaption and responding to climate change is a key objective the CCAP and the following baseline is taken from the DCC CCAP. The adaptation baseline has identified that the effects of climate change are already impacting Dublin City at a significant rate and are very likely to increase in their frequency and intensity.

The number of days with heavy rainfall has increased and the amount of extreme flooding events has also risen in the last 10 years. Dublin City has also experienced extreme temperatures, as witnessed recently in 2018, with Met Éireann issuing its first ever Status Red warning for snow in February, followed by one of the hottest summers on record during June and July.

All these extreme weather events clearly highlight the need to reduce the impacts that climate change is having on the environment, the economy and the citizens of Dublin.

DCC Local Authority Emissions Dublin City Council (DCC) is responsible for the energy use and emissions from its buildings and facilities, its public lighting, and also from its vehicle fleet. The information from the Sustainable Energy Authority of Ireland's (SEAI's) Monitoring and Reporting (M&R) database shows that DCC consumed a total of 186 gigawatt hours (GWh) of primary energy in 2017. The energy database also shows that DCC improved its energy performance by 29.8% between the baseline year (which is an average of between 2006 - 2008) and 2017, which represented a cumulative absolute saving of 39.9 GWh of primary energy during the same period.

This highlights a gap-to-target of 3.2%, meaning that DCC must improve its energy performance by a further 3.2% between now and 2020, in order to meet its 33% energy reduction target.

Buildings and facilities were the highest energy consumers, accounting for 63% of the Council's overall primary energy consumption. This is mainly due to the large number of Council-owned buildings. Public lighting was the second highest energy consumer, accounting for 25% of the total energy consumption, while the municipal fleet accounted for 12% of the total energy use.

As a signatory to the Covenant of Mayors for Climate and Energy, DCC is committed to reducing its own carbon emissions by 40% by 2030, compared to the baseline year.

DCC's emissions decreased from 53,240 tonnes of CO2 in 2006 to 40,370 tonnes of CO2 in 2017. This means that DCC is now 8,430 tonnes of CO2 (16%) away from the 2030 target of a 40% emission reduction from its baseline year.

In 2017, the Council's total emissions amounted to 40,370 tonnes of CO2. Buildings and facilities were the highest contributors, accounting for 55% of total emissions. This was followed by public lighting and the municipal fleet, each contributing 32% and 13% to the Council's emissions, respectively.

TOTAL DUBLIN CITY EMISSIONS The most recently-available information for total emissions in the entire Dublin City area is based on Census 2016 data. Using this data, Codema was able to calculate that the total emissions for the Dublin City area amounted to 2,810,880 tonnes of CO2 equivalent in 2016. The sectors that produced the most emissions were the residential, commercial and transport sectors, accounting for 35%, 33%, and 25% of the total emissions, respectively. Dublin City Council's own emissions accounted for 1.4% of this total, with social housing contributing another 3.3%. This highlights the need for collaboration and action from all stakeholders to tackle the remaining 95.3% of emissions from public and private sector sources in Dublin City.

- 4.8.3 KEY ISSUES: AIR QUALITY AND CLIMATE The SEA ER of the Dublin City Development Plan 2016-2022 identified the following issues:
 - Best practice methods for energy efficiency, energy conservation and water conservation, e.g., district heating network, combined heat and power systems, energy efficiency
 - Continued regard to the Sustainable Energy Action Plan.
 - Feasibility of renewable energy sources throughout the city.
 - Further reductions in CO2 emissions required

- Rising sea levels. Pluvial (rainfall) and coastal flood risk from changing land-use patterns and climate change.
- Importance of city vegetation/ landscape to act as a carbon sink.
- Pressure from transport-related emissions.
- Greater co-ordination with the other planning authorities in the Greater Dublin Region to respond to these shared regional issues set out
- Planning for and adapting to climate change.

The risks associated with sea level rise in DCC are:

- Coastal deposition and damage to existing defences from increased wave heights at the coastline. This will greatly affect coastal habitats, with estuaries and wetlands particularly vulnerable
- Changes in coastal morphology, changes in sea level with an increase in intensity of coastal storms tend to exacerbate coastal erosion and deposition risk
- Increased pressure on sanitation systems sea level rise can result in overflows from combined drainage systems being unable to function, resulting in increased flood risk on land. Also, as wastewater treatment plants and sewage pumping stations are often located close to the coast, these facilities are at particular risk.
- Damage to critical infrastructure and housing from coastal flooding and sea level rise. These results in economic and social risks to DCC especially since some housing and major infrastructure (roads, DART lines) are along the coast

- Increased wave heights and high tides producing damage further inland and upstream
- Destruction and alterations of coastal and marine ecosystems, habitats and species

4.9 MATERIAL ASSETS

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

4.9.1 TRANSPORT

The Dublin City Council area covers an area of approximately 115 km² and is populated by 527,612 people. Within its boundaries there are just over 31 km of Irish Rail track and now the Luas Cross city, Red and Green lines traverse parts of the city. The entire rail track within the Dublin City Council area is designated as major rail.

EXISTING ROAD NETWORK:

A total of circa 1,200 km of road is currently in the charge of Dublin City Council. The roads are of varying quality and are maintained on a demand/priority basis.

Most of the information readily available relates to the city centre, i.e., the area within the canals. The National Transport Authority notes that in total 192,670 people access the canal to the city centre in the morning peak (7.00 a.m. to 10.00 a.m.) by all modes of transport.²³ This number is projected to increase significantly by 2020. It is also reported that 64,169 people accessed the city centre by car at peak time. The network

²³ Report on trends in mode share of vehicles and people crossing the Canal Cordon 2006-2014. National Transport Authority and Dublin City Council (2015).s

within the city centre, i.e., the canals is full at 20,000 cars.

CYCLE

To date a total of circa 191 km of cycle lanes have been provided within the Dublin City Council area (SEA ER of Dublin City Development Plan 2016-2022). This is made up of both segregated lanes and combined bus and cycle lanes. The cycle lanes provided form part of a citywide cycle network.

Construction was completed on a bicycle rental scheme for the city centre, Dublin's City Bikes, and the scheme began operation in September 2009. The scheme has been extremely successful, beginning with 450 bikes at 40 stations and expanding to 550 bicycles at 44 stations in 2011. In 2013 a major expansion was announced, to add a further 950 bikes and 58 additional hire stations. Dublin is the seventeenths city to have implemented such a bike scheme and is one of the most successful in the world

It is estimated that there is approximately 2,400 km of footpath within the City Council area. This is of varying quality and it is maintained on a demand/priority basis.

In June 2015 the NTA and Dublin City Council published their joint Dublin City Transport Study which sets out proposals to enhance movement within and across the city and to facilitate a modal shift to greater use of public transport, cycling and walking.

Figure 17 shows rail and light rail in Dublin City; **Figure 18** shows existing bus provision.

4.9.2 WATER SERVICES

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

WASTEWATER

Waste water in Dublin City is currently treated in Ringsend Wastewater Treatment Works which discharges into Dublin Bay. The treated waters are treated to a Tertiary standard, which is in compliance with the Urban Wastewater Treatment Directive. The quality of the discharged waters is within the requirements of the Urban Waste Water Treatment Directive.

The Greater Dublin Drainage Scheme will represent a significant wastewater infrastructure development for the Greater Dublin Regional area which will allow for an underground orbital sewer and two pumping stations, a new wastewater treatment plan at Clonshaugh (in Dublin City) and an outfall pipe located 6km out to sea from Baldoyle Bay. This project is subject to technical studies with a view to submitting a planning application accompanied by an Environmental Impact Statement (RIS) and Natura Impact Statement (NIS) in 2018.

WATER

It is anticipated that Dublin will need a new major water source by 2025, based on projection of growth in the Greater Dublin Area. Irish Water is currently planning the development of a new major water source for the East and Midlands which will include supplying projected demand in the GDA water supply area. Irish Water is also currently implementing a major water conservation programme in order to maximise the availability of treated water from current sources.

4.9.3 WASTE MANAGEMENT
The Regional Waste Management Plan
2015-2024 for the Eastern-Midlands
Region encompasses the local authorities:
Dublin City, Dún Laoghaire- Rathdown,
Fingal, Kildare, Louth, Laois, Longford,
Meath, Offaly, Westmeath and Wicklow.
The regional plan provides the framework
for waste management for the next six
years and sets out a range of policies and
actions in order to meet the specified
mandatory and performance targets.

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

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

Denmark, Sweden, Japan, Scotland and the Netherlands²⁴ are currently the most advanced countries in terms of embedding the circular economy into their waste management system. Key elements of the communication include:

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

Dublin City Council will be committing a certain amount of waste to the thermal treatment plant in Ringsend within Dublin City Councils administrative area, the construction and use of which forms a part of the waste management strategy for the Greater Dublin Area.

4.9.4 KEY ISSUES: MATERIAL ASSETS
Extreme weather events pose significant risks to critical assets such as electricity infrastructure. Projected increases in temperature, wind speeds, cold snaps and rainfall will also put a stress on the built environment, particularly on critical infrastructure (such as electricity and communication networks) and residential developments (with the most vulnerable populations being particularly at risk).

Increases in wind speeds, cold snaps and rainfall will put a stress on transport

networks, which may lead to disruption of transport services during extreme events

Flooding also puts groundwater supplies at risk, as these can be contaminated due to the high infiltration of flood water.

Key issues to consider for material assets include:

- Encouraging sustainable use of resources
- Reducing reliance on private transport
- Workable alternatives to private transport and future public transport services and modal shift
- Projected increases in temperature, heat waves and droughts may increase the risk of fires in landfill sites and can also increase the prevalence of vermin and odour.
- Energy both energy efficiency in buildings and transport and alternative, renewable sources of energy.

sweden-and-denmark-leading-the-race-to-circularity/

²⁴ http://circulatenews.org/2015/04/an-introduction-to-circular-economy-in-scandinavia-

FIGURE 17 Existing transport provision in Dublin city

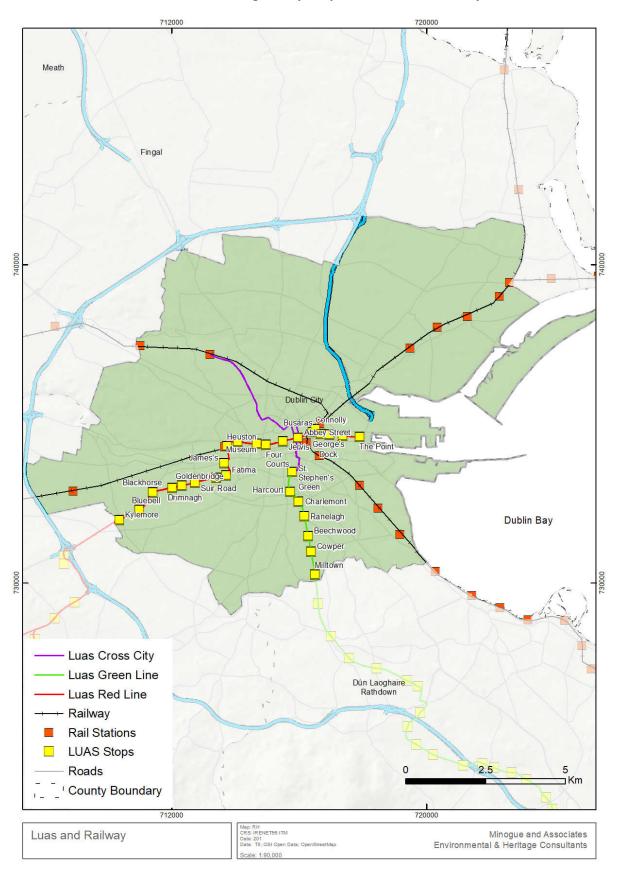
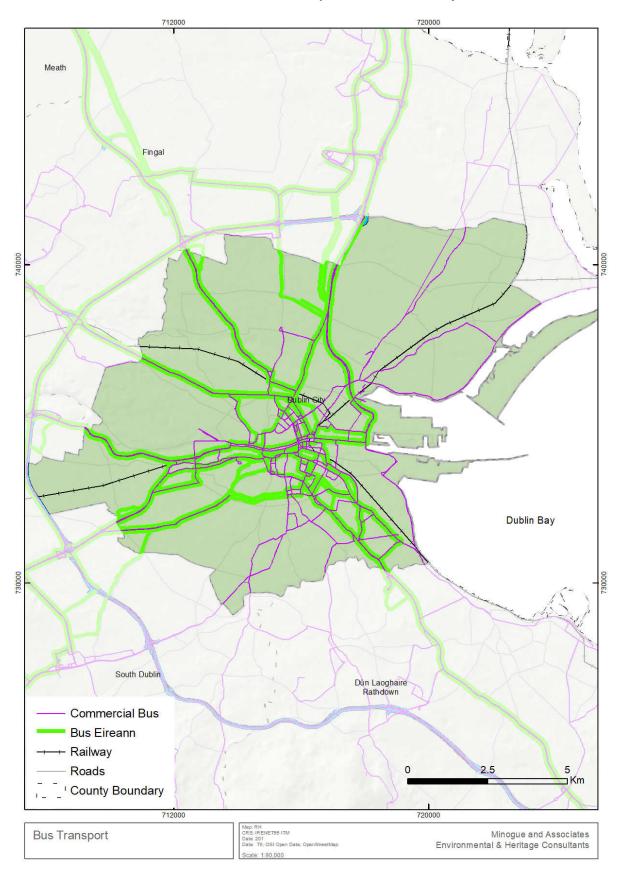


FIGURE 18 Current bus provision Dublin City



4.10 Inter-relationships

4.10.1 ECOSYSTEM SERVICES

Awareness about the roles and functions of ecosystems has increased in recent years and it can be a useful means to highlight their importance and value services to society. The Economics of Ecosystem Services and Biodiversity (TEEB) study defines ecosystem services as: 'the benefits people receive from ecosystems'. Humans are ultimately dependant on the natural environment and ecosystem services highlight how these systems provide and interact to create the essential components for human well- being. Four key services are identified for ecosystems and are shown in the following **Figure 21**.

Food Production Nutrient Cycling Water Soil Formation Wood and Fiber Primary Production Habitat Provision • Fuel Provisioning Supporting Services Services Cultural Regulating Services Services Spiritual Aesthetic Climate Regulation Educational Flood Regulation Water Purification Recreational Source: Millenium Ecosystem Assessment, 2005.

FIGURE 19 ECOSYSTEM SERVICES.

4.10.2 NATIONAL ECOSYSTEM AND ECOSYSTEM SERVICES MAPPING PILOT (NPWS)

The National Parks and Wildlife Service (NPWS) commissioned a short project for a National Ecosystem and Ecosystem Services mapping pilot for a suite of prioritised services based on available data. The project completed in 2016.

In addition to highlighting the importance and values of biodiversity and ecosystems, the project set out to initiate discussion on how ecosystem services assessments can be integrated into multi-sectoral decision making processes in Ireland. The deliverables also contribute to meeting a number of Ireland's national, EU and UN obligations. The project utilised available information and built upon existing approaches and tools including the MAES conceptual framework and the JNCC Spatial Framework approach and CICES (Common International Classification of Ecosystem Services) as well as initiatives and activities in Ireland. The following **Figures 20, 21** and **22** show an initial assessment from this project highlighting the ecosystems services provided in the 4 Dublin Local Authorities. These are briefly discussed below in the context of the relevant CCAP.

FIGURE 20 ECOSYSTEM SERVICES –WATER REGULATION OF FLOWS

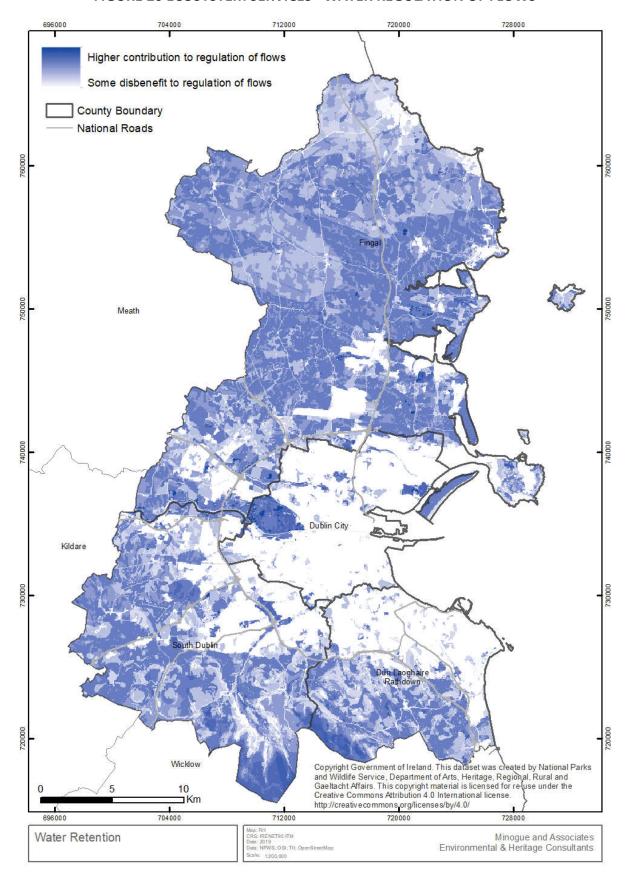


FIGURE 21 ECOSYSTEM SERVICES –WATER FILTRATION

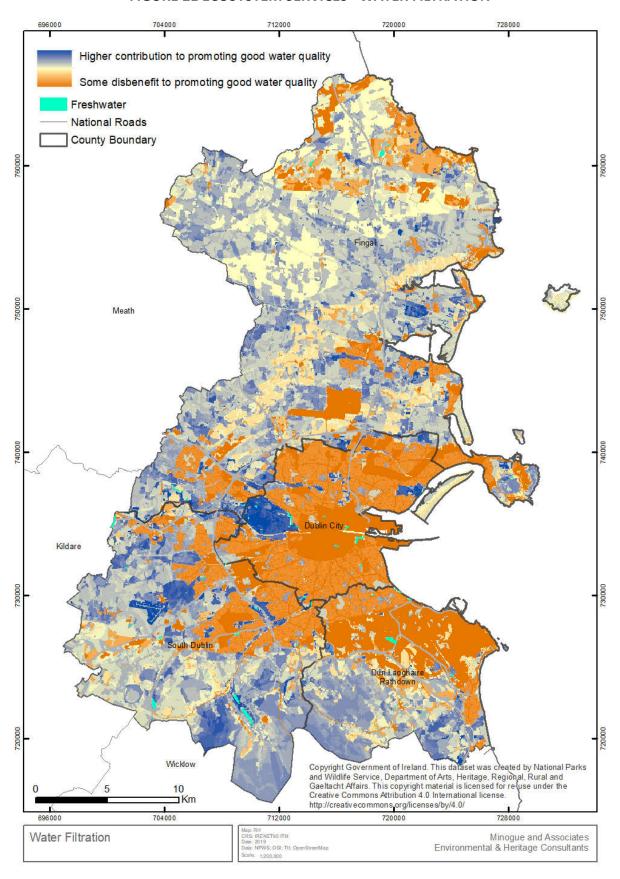
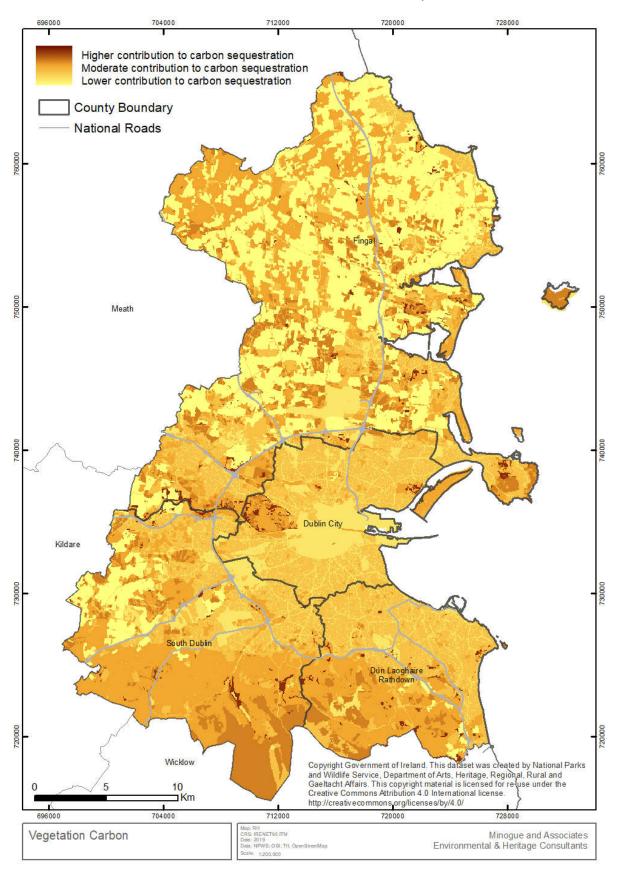


FIGURE 22 ECOSYSTEM SERVICES- CARBON SEQUESTRATION



In the context of Dublin City, the above assessment demonstrates the importance of the surrounding areas in terms of water storage, filtration and carbon sequestration. The large open space/parkland at Phoenix Park and Bull Island highlight the importance of these areas within the context of providing ecosystem services to Dublin City.

4.10.1 Environmental Sensitivity.

In accordance with the SEA Directive, the interrelationship between the environmental parameters above must be taken into account. Although all such parameters may be considered interrelated and may impact on each other at some level environmental

The Figure below shows the overall environmental sensitivity for the plan area and sphere of influence, and follows the same approach (i.e.: ranking of environmental parameters) as that used in the Dublin City CDP 2016-2022 SEA process.

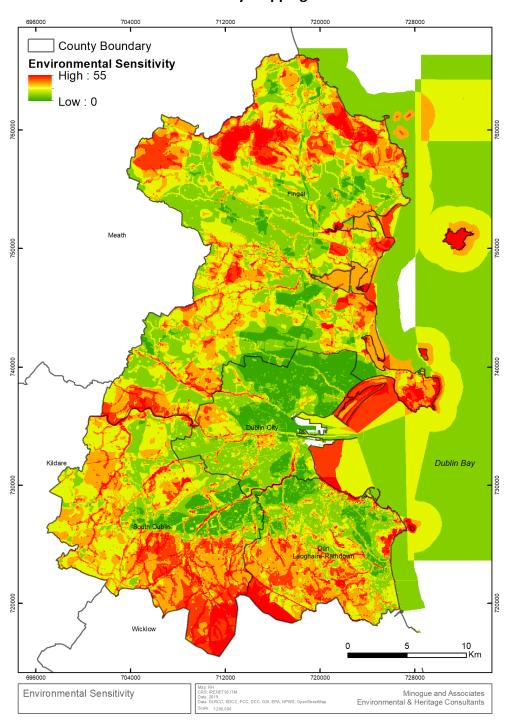
In order to show consistency between the four local authorities in terms of overall environmental sensitivity, the following parameters were utilised:

Every Parameter value = 5 (except Groundwater Vulnerability)

All Dublin Local Authorities	 SAC, SPA, NHA, pNHA NIAH, SMR ACA (SDCC; FCC; DLR) / Arch zone (DCC) Rivers / Lakes Nutrient Sensitive Waters Corine – pasture/non-irrigated/peat/natural grassland categories Ancient Woodland Survey (NPWS) RPA drinking water rivers RPA drinking SWB RPA bathing SWB Sites and Monuments GW Vulnerability 		
Fingal County Council FCC, SDCC, DLR	Highly Sensitive Landscapes Nature Development Areas Record Protected Structure	South Dublin CC	 SDCC- Grean Areas (Urban Atlas) - SDCC - AREAS_OF_ARCHELOGICAL_POTENTIAL SDCC - Views SDCC - Hedgerows SDCC- Parks SDCC - Trees in Dodder Valley Conservation Area; Ecological Networks, Coastal Habitats

By mapping key environmental layers (GIS) to produce an environmental sensitivities map, it provides a visual impression which can assist in identifying which areas within the Plan area experience the highest concentration of environmental sensitivities and consequently the areas potentially most vulnerable to potential environmental impacts from development. This can be a useful guide when considering the strategic options in relation to the plan during the early stages in the plan making process, and identifying areas that are of greater or lesser vulnerability. **Figure 23** shows the environmental sensitivity map for the four Dublin Local Authorities.

FIGURE 23 Environmental sensitivity mapping of the four Dublin Local Authorities



4.11 EVOLUTION OF THE ENVIRONMENTAL BASELINE IN THE ABSENCE OF THE CCAP

The SEA legislation requires that consideration is given to the likely evolution of the current baseline where implementation of the CCAP 2019-2024 does not take place. In the absence of the CCAP the environment would evolve under the requirements of the Dublin City Development Plan 2016- 2022.

Overall, this Climate Change Action Plan will be monitored and updated on an annual basis, with a review and revision every five years. Whilst the Dublin City CDP 2016-2022 will remain the primary landuse framework for the county, in the absence of the CCAP, the detailed actions accompanied by targets and indicators will not allow for the annual measuring of progress in this area. This presents a lost opportunity to implement changes at local authority, and community level across the county.

Key actions relating to nature based solutions which offer a suite of positive environmental effects would not be implemented with subsequent opportunities lost to green up infrastructure, promote food security and enhance tree planting. Other actions such as wetlands provision in public parks would be omitted.

At county level, the local authority would be less likely to contribute to continue to the reduction in carbon emissions associated with their fleet, lighting and buildings.

Promoting regional or inter county actions relating to public transport, walking and cycling may be less effective in the absence of this action plan.

4.12 ENVIRONMENTAL ISSUES IN NEIGHBOURING AREAS.

Whilst the CCAP is prepared for Dublin City, the regional approach for the four DLAs is a key element of the four CCAPs; therefore a summary of key environmental issues identified for Climate Change in the SEA ER of neighbouring local authority areas is presented below in Table 4. It is accepted that many of the climate change issues are cross cutting and give rise to a variety of effects and issues on SEA parameters, in particular, biodiversity, flora and fauna, water resources, soil, landscape, material assets and population and human health.

TABLE 8KEY CLIMATE CHANGE ISSUES IDENTIFIED IN SEA ER OF NEIGHBOURING LOCAL AUTHORITY COUNTY DEVELOPMENT PLANS

SEA Topic	Existing Environmental Issues Dublin City Council
Fingal County Development Plan 2017-	Some of the likely potential impacts of climate change for Fingal have been identified as follows: Increased likelihood and magnitude of precipitation levels and flooding
2023	events Disruption to urban infrastructure due to flooding Increased sea levels and loss of coastal land Potential residential and commercial water shortages, and Increased vulnerability for at risk sections of society due to changing demographic and hazards
	Towns along the coast will become increasingly vulnerable to rises in sea levels, coastal erosion and coastal squeeze. More intense storm events are also likely outcomes of climate change.

South Dublin County Development Plan 2016-2022

The two single greatest issues facing South Dublin in relation to climate change relate to increased amounts of greenhouse gas emissions from Transport movements, and the danger posed by flooding events, which will occur as a result of the former. Solutions require reductions in unsustainable transport movements, and the amelioration of potential flooding events.

The manner in which transport movements can be reduced is tied into the provision of high quality public transport between key locations in South Dublin and into Dublin City.

At the neighbourhood level, the design and incorporation of walkable and cycle friendly urban developments is to be accommodated. The preservation, or creation of walking links along the most direct routes within existing urban areas, specifically to shop, workplaces, schools and public transport links, must be given high priority, otherwise trips by car will continue to grow.

Reducing car movement at the neighbourhood level through increasing ease of pedestrian movement must be the foundation stone for an overall decrease in emissions.

The potential for increased flooding in the County, particularly in proximity to the Dodder River. Accommodation of retention areas for flood waters must be considered at this stage, prior to the onset of major flooding events. In addition to maintaining green spaces and existing flood plains free from development, the requirements of the Dodder River CDFRAMS (and the Liffey CFRAMS) must be taken into account.

Dun Laoghaire Rathdown County Development Plan 2016-2022

Legislative objectives governing air and climatic factors in Dún Laoghaire-Rathdown were not identified as being conflicted with.

Kildare County Development Plan 2017 -2023

Legislative objectives governing air and climatic factors in County Kildare were not identified as being conflicted with.

Meath County Development Plan 2013-2019

Land use changes can and will have far reaching implications for climate change that could include sweeping changes to commuter patterns with the building of more one-off houses in rural areas (also influenced by Government policy such as the Guidelines for Sustainable Rural Housing) and the resultant increase in GHGs, SO2, NOx, VOC and other pollutant emissions.

5 STRATEGIC ENVIRONMENTAL OBJECTIVES

5.1 Introduction

The purpose of the SEA Objectives is to ensure that the assessment process is transparent and robust and that the CCAP considers and addresses potential environmental effects. SEA Objectives have been set for each of the ten environmental topics identified at the Scoping Stage of the SEA process.

These objectives are derived from the principles identified through the plan, policy and programme review and align where possible with the SEOs developed for the Dublin City Development Plan 2016-2022. Where they differ from the CDP 2016-2022 objectives, the text is shown in italic bold font. The results of this are summarised in a table, called an evaluation matrix (See Chapter Seven and Annex A of this SEA ER).

TABLE 9 STRATEGIC ENVIRONMENTAL OBJECTIVES

SEA Topic	Environmental Protection Objective
Biodiversity Flora and Fauna	To protect and where appropriate enhance the diversity of habitats, species, ecosystems and geological features.
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.
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.
Air Quality and Climate	Minimise emissions of pollutants to air associated with development activities and maintain acoustic quality.
	Contribute to the mitigation of/and adaptation to climate change and implement requirements of Strategic Flood Risk assessment
Soil and Geology	See Landscape Objective
Assets	



Cultural Heritage



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.

To protect and where appropriate enhance the character, diversity and qualities of Dublin city's cultural, including architectural and archaeological, heritage.





To protect and where appropriate enhance the character, diversity and special qualities of Dublin city's landscapes and soils.



Interrelationships

Maintain and improve the health of people, ecosystems and natural processes

Actively seek to integrate opportunities for environmental enhancement during adaptation to climate change

6 CONSIDERATION OF ALTERNATIVES

6.1 Introduction

One of the critical roles of the SEA is to facilitate an evaluation of the likely environmental consequences of a range of alternative development scenarios, in this case the Dublin City CCAP 2019-2024. These alternative development scenarios should meet the following considerations:

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

In developing, refining and assessing the alternatives for the draft CCAP, the toolkit included in Developing and Assessing Alternatives in Strategic Environmental Assessment Good Practice Guidance (EPA 2015) was utilised.

In addition to the above, the CCAP will function within the policy hierarchy established by national, regional and county strategic plans, as well as relevant legislation.

This chapter presents the approach to considering and assessing the alternatives for the CCAP. Section 6.2 presents the alternative scenarios. Section 6.3 presents the evaluation of the alternatives for potential environmental effects. This in turn informed the selection of a preferred alternative for the CCAP which is presented in Section 6.4.

6.2 ALTERNATIVES CONSIDERED

In a *Strategy towards Climate Change Actions Plans for Dublin 2017*, seven focus areas were identified as having the greatest potential to help the Dublin LAs move towards a zero-carbon society and adapt to the effects of climate change. These focus areas were as follows:

• Water, Waste, Planning, Transport, Energy, Ecosystems and Biodiversity and Citizen Engagement.

The focus areas can have predominately either mitigation or adaptation solutions, or both. For example, the Energy focus area mainly concerns mitigation (i.e. reducing the use of fossil fuels and their associated CO2 emissions), while Water largely focuses on adapting to changes that are occurring or will occur in the near future due to climate change. Meanwhile, the Citizen & Stakeholder Engagement focus area concerns both mitigation and adaptation.

The aim of the CCAP is to work with the other Dublin local authorities in a co-ordinated manner to achieve the actions identified as being capable of implementing over a Five Year Period whilst also contributing to both mitigation and adapting to climate change. In

considering Alternative Scenarios for the CCAP, the following questions were used to help frame the Consideration of Alternatives²⁵:

WHY?

Can the objectives be met without a new plan/programme?

- Are there other relevant considerations (e.g. AA, WFD, FRA)?

Therefore the Alternatives considered are as follows:

²⁵ Adapted from Figure 4.3 Developing and Assessing Alternatives in the Strategic Environmental Assessment Process (EPA, 2015).

TABLE 10 ALTERNATIVES CONSIDERED

	Why Can the objectives be met without a new plan/programme? •Is the alternative viable? Is it a reasonable/realistic alternative? •Are there other relevant considerations (e.g. AA, WFD, and FRA)?	What What? How should the alternative be implemented (e.g. using which technology/method)? •Can environmental best practice be applied to meet the need? •Can environmentally less damaging methods be applied?	Where Where? Where is the alternative intended to go? What is its extent? Can alternative locations be identified for the identified technologies/methods/zonings? Are these less environmentally sensitive?	When? What are the details of the timeframe for implementation/ which are the critical details here is the alternative intended to go? What is its extent? •Can alternative locations be identified for the identified technologies/methods/zonings? •Are these less environmentally sensitive?
Alternative 1: Do-Nothing (rely CDP policies and objectives to address and adapt to climate change)	This alternative could see the do nothing scenario be continued by using the existing CDP policies and landuse zonings to continue to adapt and plan for effects on climate change.	Through using climate change policies in the CDP and providing the landuse framework for responding to climate change. Landuse activities relevant could include renewable energy, transport and flood risk management	This would include the city of Dublin	This would cover the timeframe of the current CDP upto 2022
Alternative 2: Prioritise largest greenhouse gas emission sectors –	This would require the preparation of an action plan that would concentrate on energy and transport for Fingal as a means to address	It would prioritise measures that would reduce energy emissions, promote renewable energy and sustainable transport projects	This would include the city of Dublin	This would likely reflect the timeframe of the CDP given its landuse implications.

	Why Can the objectives be met without a new plan/programme? •Is the alternative viable? Is it a reasonable/realistic alternative? •Are there other relevant considerations (e.g. AA, WFD, and FRA)?	What? How should the alternative be implemented (e.g. using which technology/method)? •Can environmental best practice be applied to meet the need? •Can environmentally less damaging methods be applied?	Where Where? Where is the alternative intended to go? What is its extent? Can alternative locations be identified for the identified technologies/methods/zonings? Are these less environmentally sensitive?	When? What are the details of the timeframe for implementation/ which are the critical details here is the alternative intended to go? What is its extent? •Can alternative locations be identified for the identified technologies/methods/zonings? •Are these less environmentally sensitive?
Energy and Transport	and respond to climate change			
Alternative 3: Approach the priority areas in a balanced manner to provide for both responses to climate change impacts (adaptation) and reduce greenhouse gas missions mitigation).	This is the existing CCAP. It would consider a mixture of adaptation and mitigation measures for the climate change action plan and would include citizen engagement and awareness raising throughout. It would be underpinned by a baseline assessment of greenhouse gas emissions and sectoral use in the county	This would include a suite of measures that would aim to bring co-benefits where possible and rely on nature based solutions where possible	This would be tailored to Dublin City but prepared as part of a broader regional approach to climate change	This would extend to 2024 and include a detailed monitoring regime to allow for annual reporting and monitoring of actions.

Why	What	Where	When
Can the objectives be	What?	Where?	When?
met without a new	How should the	Where is the alternative intended to	What are the details of the
plan/programme?	alternative be	go?	timeframe for implementation/
Is the alternative	implemented (e.g. using	What is its extent?	which are the critical details here is
viable? Is it a	which	Can alternative locations be	the alternative intended to go?
reasonable/realistic	technology/method)?	identified for the identified	What is its extent? •Can
alternative?	 Can environmental best 	technologies/methods/zonings?	alternative locations be identified
Are there other	practice be applied to	Are these less environmentally	for the identified
relevant	meet the need? •Can	sensitive?	technologies/methods/zonings?
considerations (e.g.	environmentally less		 Are these less environmentally
AA, WFD, and FRA)?	damaging methods be		sensitive?
	applied?		

6.3 Assessment of potential effects for each alternative scenario

This section presents the assessment of potential environmental effects for each Alternative Scenario. This is undertaken by assessing each alternative against the SEOs presented in Chapter 5 of this SEA ER. It is informed by the environmental baselines as well as the policy review.

The assessment of Alternatives is categorised as follows, as many of the alternatives share similar objectives, to highlight where an alternative may generate particular positive or negative effects, a + or - is shown. :

Positive	
Neutral	
Uncertain	
Negative	

TABLE 11 ASSESSMENT OF ALTERNATIVES

Strategic Environmental Objectives	Alternative 1:Do Nothing Scenario	Alternative 2.Prioritise Energy and Transport	Alternative 3 Prioritise all main sectors and include for awareness raising
Biodiversity			
To protect and where appropriate, enhance the diversity of habitats, species, ecosystems and geological features.	Uncertain to negative	Uncertain/ negative	Positive++
Population and Human Health			
To create a sustainable compact city and a high quality safe environment in which to live, work and/or visit.	Positive	Uncertain	Positive++
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.	Positive	Positive	Positive++
Comment: Whilst all alternatives show consistency			
assessment and promotes nature based solutions as performance of the option Soil and Geology and Landscape	another means to respond to	climate change thereby increasing	the overall environmental
To protect and where appropriate enhance the	Positive	Neutral	Positive++
character, diversity and special qualities of Dublin city's landscapes and soils.	TOSILIVE	reactal	TOSICIVETT
Material Assets			
To make best use of Dublin city's infrastructure and material assets and to promote the sustainable	Positive	Positive	Positive

Strategic Environmental Objectives	Alternative 1:Do Nothing Scenario	Alternative 2.Prioritise Energy and Transport	Alternative 3 Prioritise all main sectors and include for awareness raising
development of new infrastructure to meet the			
needs of the city's population			
Climate and Air Quality			
Minimise emissions of pollutants to air associated	Positive	Positive	Positive++
with development activities and maintain acoustic			
quality.			
Contribute to the mitigation of/and adaptation to	Uncertain	Neutral	Positive ++I
climate change and implement requirements of			
Strategic Flood Risk assessment.			
Cultural Heritage			
To protect and where appropriate enhance the	Positive	Uncertain	Positive
character, diversity and qualities of Dublin city's			
cultural, including architectural and archaeological,			
heritage.			
Landscape			
To protect and where appropriate enhance the	Neutral	uncertain	Positive++
character, diversity and special qualities of Dublin			
city's landscapes and soils.			

6.5 Preferred Alternative

In terms of all SEOs, Alternative 3 is identified as creating most positive interactions as it provides greater environmental performance overall and also allows for a greater environmental gains, than may be achieved through Alternatives 2 and 1. In addition, the mulit faceted approach contributes to greater co-benefits by providing for a wider range of environmental effects particularly around nature based solutions and resource management. The inclusion of measures for citizen engagement and awareness raising through the CCAP option is also positive for a number of SEOs.

7 ASSESSMENT OF SIGNIFICANT ENVIRONMENTAL EFFECTS

7.1 Introduction

The purpose of this section of the Environmental Report is to predict and evaluate as far as possible the environmental effects of the CCAP 2019-2024.

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

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

7.2 APPROACH TO ASSESSMENT

Having established the environmental baseline and the key environmental sensitivities for the Plan area in Chapter 4, and the Strategic Environmental

Objectives in Chapter 5, an assessment for any potential environmental effects from implementing the CCAP can be undertaken.

An assessment of cumulative and incombination effects is also presented in the concluding section of this chapter.

7.2.1 POPULATION AND HUMAN HEALTH-SIGNIFICANT EFFECTS
Land use planning impacts on the everyday lives of people and can either hinder or help promote healthy sustainable environments and communities. For example the provision of safe walking routes and cycle-ways, parks, playgrounds, safe routes to school, public transport facilities, etc. result in direct and indirect health benefits and

allow for healthier transportation choices

to be made by communities above private

motor car.

Many of the actions identified in the CCAP give rise to long term positive effects on population and human health both by responding and adapting to the impacts of climate change, and also reducing greenhouse gas emissions through a series of measures.

Reflecting the opportunity for co-benefits of the CCAP, measures around energy efficiency and district heating opportunities can help address fuel poverty in relation to vulnerable individuals as well as the chance to reuse energy from within the local area, for example Energy: Action 2 Requirement for all new developments to be district heating-enabled in Poolbeg West, North Lotts and Grand Canal SDZs.

Actions 12 (Fabric upgrade programme) and 16 (PV panels) provides positive, long term effects both in relation to resource management (by reusing existing buildings and greenhouse gas savings

through avoiding new build particularly of concrete sourced products), but it also helps to address fuel poverty particularly in housing stock that may require upgrading to achieve greater energy efficiency, reducing fuel bills and overall enhancing the comfort of these dwellings.

Reflecting key objectives in the Dublin CDP 2016-2022 the CCAP will support and encourage a modal shift in transport by expanding the walking and cycling network, encouraging and promoting greater engagement and awareness raising in relation to walking and cycling and promoting behavioural change; for example see the following *Transport Actions 16 to 19 Pedestrian zones, Action 26 Identify and promote use of new routes on Hike It! Bike It! Like It! platform and 27 Develop cycle network strategy,* in addition to public realm and planning measures.

All the measures included in the Nature Based Solutions and a large number of the Flood Resilient measures are identified as generating long term positive effects on this SEO.

The measures particularly in Nature Based Solutions provide for multiple positive effects via tree planting, woodland strategy, SUDs, and wetlands, which can provide a range of ecosystem services including water purification, carbon storage, and assist in absorption of emissions associated with transport such as Particulate matter and providing noise buffers, these create positive effects on population and human health (see for example Action 12 Identify areas for integrated constructed wetlands, Action 10 Implement Dublin Bay Biosphere work

programme, 31 Develop urban woodland strategy.

By implementing measures around flood management and where measures such as wetlands and flood attenuation ponds are created, these respond to potential flood risk events and therefore give rise to positive effects on these SEOs.

Mitigation measures are recommended in relation to preparation of a Coastal Zone Management plan to include consideration of cultural heritage which provides consistency with both population and cultural heritage SEOs.

The Department of Health will submit a Sectoral Adaptation Plan to the Department of Communications, Climate Action and the Environment with a submission of 30th September 2019; this will interact with other adaptation plans and provide more detail and information on how the health service will adapt and mitigate to the challenges of climate change²⁶.

7.2.2 BIODIVERSITY, FLORA AND FAUNA-SIGNIFICANT EFFECTS
The promotion of a nature based measures and resource management in particular along with blue and green infrastructure actions all strengthen overall protection of biodiversity

resources and the Biodiversity SEOS.

Mapping trees in the county (Nature Based Solutions Action 14), Collect data to inform preparation of a list of habitats and species in Dublin city vulnerable to climate change (Action 7)), as well as Action 1 Regional working group on nature based solutions and joint action plans to protect native habitats and species across all 4 DLS (Action 2) are examples of actions

²⁶ This text was added on foot of a submission by the EPA on the draft SEA ER

that are long term positive and consistent with these SEOs.

A number of these Transport Actions are recommended for mitigation either due to the potential in the absence of mitigation on conservation management objectives of European Sites (Actions 45 Sustainable Transport hubs –various locations); however it is considered the existing environmental protection measures in the DCC CDP2016-2022 should address these potential effects appropriately.

Walking and cycling actions, if they were to take place on or near sensitive habitats or species vulnerable to disturbance would give rise to adverse effects. However the existing environmental protection provisions in the CDP will apply and provide sufficient mitigation measures.

Indirect and cumulative positive impacts are identified for biodiversity in relation to actions around Resource Management such as reducing illegal dumping.

Nature based solutions identified as particularly positive include Action 8
Develop Green Infrastructure Strategy for the Region. Citizen engagement actions include Action 33 Identify sites suitable for community gardens for local food production are further such examples.

7.2.3 WATER - SIGNIFICANT EFFECTS
Potential effects on water resources (and frequently biodiversity) in the absence of mitigation include:

 Surface water runoff from impermeable surfaces leading to reduced water quality in groundwater springs or surface waters affecting qualifying habitats and species downstream(impacts can range from short to long term);

- Changes in the flow rate of watercourses arising from an increased footprint of impermeable surfaces within the Plan area - increasing the extent of impermeable surfaces will result in a decrease in infiltration and an increase in runoff;
- Generally, land use practices can result in water quality impacts and whilst surface water impacts may be identified quickly, impacts to groundwater can take much longer to ascertain due to the slow recharge rate of this water resource;
- Water quality impacts can also have human health impacts in the case where bacterial or chemical contamination arises.

The Dublin City CDP 2016-2022 already includes a range of provisions and measures to address and minimise the above effects, including measures around green infrastructure, flood risk management and development control.

The CCAP however further enhances and strengthens these through the flood resilience actions and nature based solutions in particular. Additional tree planting and a focus on riparian habitat (Actions 3 Establish a cross-departmental Trees and SUDS Working Group to promote and pilot water sensitive urban design incorporating urban tree planting and 35 Study impacts and benefits of increased buffer distances to watercourses) provide for positive effects as they reduce soil run off and allow for water attenuation and filtration. Again this provides for longer, positive effects associated with linear habitat creation and ecological connectivity.

Measures around SUDs, such as Action 36 (retrofitting of SUDs) in the Flood Resilience theme are particularly positive, creating long term direct positive effects on water resources, as well as soil and biodiversity, landscape and population as well as Action 12 Identify areas for integrated constructed wetlands.

An additional mitigation measures is recommended for the Flood Resilience to provide consistency in awareness raising and natural flood management measures across the DLAs. A mitigation measure is also recommended as an overarching measure for flood defence actions -again to promote nature based solutions.

7.2.4 SOIL AND GEOLOGY - SIGNIFICANT FEFECTS

Soil quality and function may be enhanced through particular measures associated with flood resilience, nature based solutions and resource management in particular.

Awareness raising around illegal dumping (Action 12) and Action 19 leaf composting can generate positive effects on soil through enhancement of the resource and a more sustainable approach to enriching soil. Action 38 *Prepare an analysis of soil sealing in Dublin City to determine levels of permeability* is particularly important given the largely urban character of the city's soils and its functions in terms of carbon sequestration and water attenuation, as well as its contribution to biodiversity.

A number of the measures relating to flood resilience including recognition of flood plains and production of Regional Flood Plain Management Guidelines (Action 5) indirectly benefit soil and geology SEOs.

7.2.5 AIR QUALITY AND CLIMATE

Overall the CCAP will contribute positively to climate change adaptation through the following:

- Blue and green infrastructure giving rise to increased surface water storage and potential carbon sequestration
- Focus on energy efficiency and innovation as seen through the actions identified in the Energy Theme, examples include
- Action 4 provides for an evidence based climate change chapter in the County Development Plan, both of which will allow for policy responses and in the CDP context, landuse zoning responses based on the evidence prepared.
- Other energy related measures including Energy efficiency works in 30 Council owned and operated buildings (Action 10) are all identified as positive in relation to this SEO.

Key measures relating to behavioural change around transport and the increase in walking/cycling and public transport measures are essential in addressing transport emissions over the lifetime of the CCAP and beyond.

Recognising the ecosystems functions of soil, water and biodiversity is a key element in the Nature Based solutions theme and is an important acknowledgement that also provides for positive effects across a number of SEOs.

The CCAP includes targets relating to 40% reduction in the councils' Greenhouse Gas Emissions by 2030 (primarily through lighting and energy measures), a 33% improvement in the councils energy efficiency by 2020. However the CCAP also

acknowledges that the council's outputs are relatively minor given the wider sectoral emissions in the county and this is why many of measures relate to the council leading on climate action, promoting behavioural change, facilitating sustainable transport options, promoting increased energy efficiency and supporting nature based solutions and citizen engagement.

The preparation of a new baseline of emissions and the annual monitoring reporting of the CCAP is a critical feature that should allow review of progress on a regular basis.

7.2.6 CULTURAL ASSETS - SIGNIFICANT EFFECTS Archaeology and Built heritage features are present throughout the plan area, and in particular those archaeological or built heritage features associated with the coastline and Dublin Bay may be particularly vulnerable to climate change effects.

The concentration of built heritage features and historic settlements on the coastline increases their vulnerability to the effects of climate change.

Cultural heritage is not often considered or captured adequately in coastal zone management planning and this can give rise to adverse effects on cultural heritage, for example:

Overlooking cultural resources can result in

- loss of cultural identity associated with certain habitats;
- loss of tourism, recreational and educational opportunities;

- decline in local ecological knowledge, skills and technology pertaining to habitat management;
- and loss of opportunities for social and cultural capital²⁷.

Therefore it is recommended a mitigation measure be included for the Coastal Zone Management Planning actions (Action 9).

The CCAP does not directly identify cultural heritage however through public realm improvements, green infrastructure measures and nature based solutions, effects on cultural heritage features may be minimised over the CCAP.

7.2.7 MATERIAL ASSETS - SIGNIFICANT IMPACTS Many of the measures in Energy, Transport and Flood Resilience in particular provide for mitigation and adaptation with a view to minimising adverse effects of climate change on material assets, and also responding and facilitating behavioural and modal change in energy use and transport. Examples of these include the following:

- Energy: Action 1: Create an Energy Masterplan for the Dublin Region,
- Transport: Action 27 Develop and extend cycle network; Action 45 Sustainable Transport Hubs
- Flood Resilience: whilst most of the measures here mitigate and adapt to climate change, with accompanying positive effects on material assets SEOs, Actions 16 Develop template to capture impacts, response and costs for all major climate events and 18 are recommended for mitigation to allow for the inclusion of 'environmental externalities' in any costing exercise, as well as

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²⁷ Coastal cultural heritage: A resource to be included in integrated coastal zone management SornaKhakzad^aMarnixPieters^bKoenraadVan Balen^c

- promotion of natural flood measures as a priority in any updated guidelines or policies.
- Actions under Resource
 Management are also identified as generating positive, long terms effects particularly around the circular economy, reuse and awareness raising around food waste and recycling.
- Where flood resilience measures relate to identification of integrated wetlands, the Geological Survey of Irelands National Aquifer and Recharge maps should be consulted²⁸.
- **Geological Survey Ireland is** undertaking a new coastal vulnerability to sea-level rise mapping initiative. The maps produced in this project will aim to identify the coastal regions most likely to be affected by impacts of sea-level rise by using a coastal Vulnerability index (CVI) approach. Areas of assessment will include getting up-to-date information on current state of coastal defences, records of areas of inundation during extreme events for validating models and access to quality controlled and publically available tide gauge records for Dublin Bay²⁹

7.2.8 LANDSCAPE - SIGNIFICANT EFFECTS
Long term positive effects are identified
for the CCAP and landscape primarily
through the nature based solutions, public
realm enhancement, green and blue
infrastructure, increased tree planting etc.

Many of the measures in the CCAP require a landscape level response such as

Regional Flood Plain management guidelines, recognition of green and blue infrastructure and corridors and this an important approach to take when responding to climate change.

Overall, positive effects identified for Landscape SEOs, as landscape change can be considerable with climate change effects in terms of changing water levels, habitat change, transport measures and adaptation measures such as flood risk management.

An increase in open space, green infrastructure, public realm and permeability would all create long term positive effects for the Landscape SEOs.

²⁸ This text was inserted on foot of a submission by the Geological Survey of Ireland on the draft SEA ER

²⁹ As above

7.3 IN-COMBINATION AND CUMULATIVE SIGNIFICANT EFFECTS

This section of the Environmental Report provides an outline of the potential cumulative effects on the environment as a result of implementation of the CCAP.

Cumulative effects are referred to in a number of SEA Guidance documents and are defined in the EPA SEA Process Checklist as "effects on the environment that result from incremental changes caused by the strategic action together with other past, present and reasonably foreseeable future actions. These effects can result from individually minor but collectively significant actions taking place over time or space"30 These effects can be insignificant individually but cumulatively over time and from a number of sources can result in the degradation of sensitive environmental resources. The assessment of cumulative effects is a requirement of the SEA Directive (2001/42/EC).

The 2004 Guidelines produced by the DECLG outlines that the SEA process is in a good position to address cumulative effects for which the Environmental Impact Assessment process is not equipped to deal with. Due to the strategic nature of the SEA process a forum is provided in which cumulative effects can be addressed.

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

progressive effect likely to emerge over time.

7.3.1 SUMMARY OF CUMULATIVE AND IN-COMBINATION EFFECTS IDENTIFIED Cumulatively and in combination, several of the CCAP Actions encourage a modal shift and in turn gives rise to indirect positive effects, for example by creating more physical activity in terms of travel to work and school, positively affecting air quality with accompanying benefits to both population and human health . In addition, this can create a reduction in emissions associated with Particulate Matter and Nitrogen Dioxide. This benefits both human health as well as Biodiversity, flora and fauna and surface water features.

The majority of the Flood Resilient measures are identified as being consistent and positive across all SEOs, in particular measures that promote natural based solutions such as tree planting and SUDs are all positive across all parameters and can provide multi-functional benefits in the landscape.

In combination and cumulative effects are particularly relevant to the Nature Based solutions actions which together create long term positive effects across Population, Landscape, Biodiversity, Soil and Geology, Water and Material Assets whilst responding to climate change effects.

The resource management is also a critical theme as it promotes reduction and reuse and measures around illegal dumping and leaf composting all interact to generate positive effects.

Threaded throughout the CCAP is the theme of citizen engagement and awareness raising and this is critical to

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³⁰ (EPA SEA Process Checklist (2011)).

both inform, educate and engage citizens in relation to responding to climate change, whilst also identifying positive measures. Many of the engagement actions should increase public awareness and a sense of responsibility, collective and individual action in addressing and adapting to climate change. Positive in combination effects are identified for human health around modal shifts, and green infrastructure, behavioural change, tree planting and responding to flood risk.

The SEA ER of the Dublin City Development Plan 2016-2022 provided a cumulative assessment of national level plans and programmes as they relate to the CDP. These are presented overleaf and are updated to reflect any recent important plans/programmes/projects.

7.3.1 POTENTIAL CUMULATIVE EFFECTS FROM OTHER PLANS AND PROJECTS Table 12 Potential cumulative and in combination effects

Plan	Comment	Cumulative effects
Climate Change Action Plans 2019-2024 for other Dublin Local Authorities	During the formulation of the CCAPs for the Dublin Region, a suite of common thematic actions have been prepared for each of the local authority areas The individual action plan for each Local Authority has undergone Habitats Directive Assessment and Strategic Environmental Assessment. It has been found that by implementing the mitigation policies and objectives of the relevant CDP as identified in the NIR and SEA ER, effects to the environment and European Sites are not likely to occur	Adverse cumulative effects not identified
National Planning Framework	The purpose of the NPF is to provide a focal point for spatial plans throughout the planning hierarchy. It will provide a framework for the new Regional Spatial and Economic Strategies (RSESs) by the three Regional Assemblies and the associated enhancement of the economic development focus of local authorities as per the Local Government Reform Act 2014. The NPF will co- ordinate the strategic planning of urban and rural areas in a regional development context to secure overall proper planning and development as well as co-ordination of the RSES's and city/ county development plans in addition to local economic and community plans and local area plans and other local development.	The SEA And NIR of the NPF and Draft RSES are now available. The CCAP are consistent with key objectives as shown in Section 3 of this SEA ER.
Regional Spatial & Economic Strategy (Draft)	The RSES is a strategic plan which identifies regional assets, opportunities and pressures and provides appropriate policy responses in the form of Regional Policy Objectives. At this strategic level it provides a framework for investment to better manage spatial planning and economic development throughout the Region	The SEA Scoping Report is available for the draft Strategy. No in combination effects are identified
Water Services Strategic Plan	Ireland's first integrated national plan for the delivery of water services, the Water Services Strategic Plan (WSSP) addresses six key themes and was adopted in 2015. It was subject to full SEA and AA and concluded that Overall, the assessment has identified that the implementation of the draft WSSP is likely to	No in-combination impacts were predicted as a result of implementation of the Plans

	have positive effects on the majority of the SEOs that have been used in the assessment to help characterise the environmental effects of the WSSP and no significant negative effects were identified.	
Neighbouring County Development Plans	These plans were subject to full SEA and AA and concluded that subject to full adherence and implementation of measures likely significant effects were not identified.	No in-combination impacts were predicted as a result of implementation of the Plans
River Basin District Management Plans.	The National River Basin District Management Plan is now published (2018). The second cycle River Basin Management Plan aims to build on the progress made during the first cycle with a greater emphasis on ensuring the evidence base is available and the administration supports are fully in place to support key measures. The approach to the plan development involves characterisation of Ireland's water bodies in order to develop a tailored programme of measures to allow for the protection of good status or the restoration of good status for all water bodies. The outcomes are then monitored in order to feed into further characterisation and measures setting as the cycle moves forward. The plan was subject to SEA and Appropriate Assessment.	No in-combination impacts are predicted as a result of implementation of the Plans
CFRAMS Study	The Eastern CFRAM study has been commissioned in order to meet the requirements of the Floods Directive, as well as to deliver on core components of the 2004 National Flood Policy, in the Eastern district.	No in-combination impacts are predicted as a result of implementation of the Plans.

Greater
Dublin
Drainage

Irish Water made a planning application for strategic infrastructure development to An Bord Pleanála for the Greater Dublin Drainage Project in June 2018. The GDD project proposes a new regional wastewater treatment facility to be located in the townland of Clonshaugh in north county Dublin, an underground orbital sewer from Blanchardstown to Clonshaugh, a new pumping station at Abbotsown, a partial diversion of the north fringe sewer, and an outfall pipeline to return the treated water to the Irish Sea. The project also includes a regional sludge treatment centre at the new GDD facility and an associated biosolids storage facility at Newtown near Kilshane Cross.

Chapter 23 of the EIAR was reviewed with a focus on the cumulative impacts,
No in-combination impacts are predicted as a result of implementation of the Project

The Greater Dublin Transport Strategy 2016-2035

The Transport Strategy for the Greater Dublin Area, 2016-2035 has been prepared and published by the National Transport Authority. It sets out how transport will be developed across the region, covering Dublin, Meath, Wicklow and Kildare, over the period of the strategy and has been approved by the Minister for Transport, Tourism and Sport in accordance with the relevant legislation. Luas, heavy rail and orbital bus routes are of particular relevance to the elements of this Strategy and the CCAP.

Positive effects in relation to the prioritisation of public transport modes above private transport.

8 MITIGATION

8.1 Introduction

Section (g) of Schedule 2(B) of the SEA Regulations (Annex 1(g) of the SEA Directive) requires the Environmental Report to describe the measures envisaged to prevent, reduce and/or offset as fully as possible any significant adverse effects on the environment from implementation of the CCAP 2019-2024. Mitigation involves ameliorating significant negative effects. Where the environmental assessment identifies significant adverse effects, consideration is given in the first instance to preventing such impacts or where this is not possible, to lessening or offsetting those effects. Mitigation measures can be generally divided into those that:

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

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

Many impacts will be more adequately identified and mitigated at masterplan, project and EIA level. In general terms, all proposals for development will be required to have due regard to environmental considerations outlined in this Environmental Report and associated assessments. Proposals for development which are deemed contrary to the environmental objectives contained in the Dublin City CDP 2016-2022 will not normally be permitted, and if permitted, will be developed with specific mitigation measures. It is important to highlight the potential for different environmental effects arising from green adaptation measures and grey adaptation measures that will comprise harder, largely engineered solutions. For the latter, careful scrutiny and full implementation and application of mitigation measures as detailed in this chapter will apply³¹.

The following sections present the principal environmental protection measures already included in the Dublin City CDP 2016-2022 that will apply; please note this is not an exhaustive list.

 $^{^{31}}$ This text was added on foot of a submission on the draft SEA ER from the EPA

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

The CCAP has been prepared having regard to the policies and objectives outlined within the Dublin City Development Plan 2016-2022. The particular environmental protection measures for the CDP 2016-2022 are as follows:

TABLE 13 ENVIRONMENTAL PROTECTION MEASURES IN DUBLIN CDP 2016-2022

DUBLIN CITY COUNCIL DEVELOPMENT PLAN 2016-2022

Policies/Objectives	CLIMATE CHANGE
CC1	To prioritise measures to address climate change by way of both effective mitigation and adaptation responses in accordance with available guidance and best practice
CC2	To mitigate the impacts of climate change through the implementation of policies that reduce energy consumption, reduce energy loss/wastage, and support the supply of energy from renewable sources. It is an Objective of Dublin City Council: CCO1: To implement the 'National Climate Change Adaptation Framework' (2012) by adopting a Climate Change Action Plan for Dublin City which will assist towards meeting National and EU targets. This will be adopted by end of 2018
CCO2	To support the implementation of the forthcoming 'Climate Change Strategy for Dublin and Climate Change Action Plan for Dublin City'. It is an Objective of Dublin City Council:
CCO3	To support the implementation of the national level 'Strategy for Renewable Energy 2012–2020' and the related National Renewable Energy Action Plan (NREAP) and National Energy Efficiency Action Plan (NEEAP).
CCO4	To support the implementation of the 'Dublin City Sustainable Energy Action Plan 2010–2020' and any replacement plan made during the term of this development plan. It is an Objective of Dublin City Council:
CCO5	To support and collaborate on initiatives aimed at achieving more sustainable energy use, particularly in relation to the residential, commercial and transport sectors.
CCO6	To promote the concept of carbon-neutral sustainable communities throughout the city and to seek to initiate and support carbon neutral demonstration projects in conjunction with local communities.

CCO7C	To actively promote and facilitate the growth of the new emerging green industries to contribute both to the reduction of the city's energy consumption levels and to the role of the city as a leader in environmental sustainability.
CCO8	In conjunction with Codema, to complete a comprehensive spatial energy demand analysis to help align the future energy demands of the city with sustainable energy solutions
CCO9	To encourage the production of energy from renewable sources, such as from bio-energy, solar energy, hydro energy, wave/tidal energy, geothermal, wind energy, combined heat and power (CHP), heat energy distribution such as district heating/ cooling systems, and any other renewable energy sources, subject to normal planning considerations, including in particular, the potential impact on areas of environmental sensitivity including Natura 2000 sites.
CCO10 CCO11	To support renewable energy pilot projects which aim to incorporate renewable energy into schemes where feasible. To support and seek that the review of the national building regulations be expedited with a view to ensuring that they meet or exceed the passive house standard or equivalent, with particular regard to energy performance and other sustainability considerations, to alleviate poverty and reduce carbon reduction targets. It is the Policy of Dublin City Council:
CC3	To promote energy efficiency, energy conservation, and the increased use of renewable energy in existing and new developments.
CC4	To encourage building layout and design which maximises daylight, natural ventilation, active transport and public transport use. It is an Objective of Dublin City Council
CCO12	To ensure high standards of energy efficiency in existing and new developments in line with good architectural conservation practice and to promote energy efficiency and conservation in the design and development of all new buildings in the city, encouraging improved environmental performance of building stock.
CCO13	To support and encourage pilot schemes which promote innovative ways to incorporate energy efficiency into new developments
CCO14	To support the government's target of having 40% of electricity consumption generated from renewable energy sources by the year 2020.
CCO15	To facilitate the provision of electricity charging infrastructure for electric vehicles. It is the Policy of Dublin City Council
CC5	To address flood risk at strategic level through the process of strategic flood risk assessment, and through improvements to the city's flood defences (see appendix 11).
	WATER QUALITY
SIO6	It is an Objective of Dublin City Council

	To implement the European Union Water Framework Directive through the implementation of the appropriate River Basin
	Management Plan and Programme of Measures.
SI07	To take into consideration the relevant River Basin Management Plan and Programme of Measures when considering new development proposals.
SI4	To promote and maintain the achievement of at least good status in all water bodies in the city.
SI5	To promote the enhancement of aquatic ecosystems and, with regard to their water needs, terrestrial ecosystems and wetlands directly depending on the aquatic ecosystem
SI6	To promote the protection and improvement of the aquatic environment, including through specific measures for the progressive reduction or cessation of discharges and emissions.
SI7	To promote the progressive reduction of pollution of groundwater and prevent its further pollution
SI8	To mitigate the effects of floods and droughts subject to environmental assessments
	FLOOD MANAGEMENT
SI9	To assist the Office of Public Works in developing catchment-based Flood Risk Management Plans for rivers, coastlines and estuaries in the Dublin city area and have regard to their provisions/recommendations.
SI10	To have regard to the Guidelines for Planning Authorities on the Planning System and Flood Risk Management, and Technical Appendices, November 2009, published by the Department of the Environment, Community, and Local Government as may be revised/updated when assessing planning applications and in the preparation of plans both statutory and non-statutory. It is the Policy of Dublin City Council
SI11	To put in place adequate measures to protect the integrity of the existing Flood Defence Infrastructure in Dublin City Council's ownership and identified in the Strategic Flood Risk Assessment and to ensure that the new developments do not have the effect of reducing the effectiveness or integrity of any existing or new flood defence infrastructure and that flood defence infrastructure has regard also to nature conservation, open space and amenity issues.
SI12	To implement and comply fully with the recommendations of the Strategic Flood Risk Assessment prepared as part of the Dublin City Development Plan.
SI13	That development of basements or any above-ground buildings for residential use below the estimated flood levels for Zone A or Zone B will not be permitted
SI14	To protect the Dublin City coastline from flooding as far as reasonably practicable, by implementing the recommendations of the Dublin Coastal Flood Protection Project and the Dublin Safer Project

SI15	To minimise the risk of pluvial (intense rainfall) flooding in the city as far as is reasonably practicable and not to allow any development which would increase this risk.
SI16	To minimise the flood risk in Dublin City from all other sources of flooding, including fluvial, reservoirs and dams and the piped water system.
SI17	To require an environmental assessment of all proposed flood protection or flood alleviation works. It is an Objective of Dublin City Council:
SI08	All development proposals shall carry out, to an appropriate level of detail, a Site-Specific Flood Risk Assessment (SSFRA) that shall demonstrate compliance with: The Planning System and Flood Risk Management, Guidelines for Planning Authorities, Department of the Environment, Community and Local Government, November 2009, as may be revised/updated and the Strategic Flood Risk Assessment (SFRA) as prepared by this Development Plan. The site-specific flood risk assessment (SSFRA) shall pay particular emphasis to residual flood risks, site-specific mitigation measures, flood-resilient design and construction, and any necessary management measures (the SFRA and Appendix B4 of the above-mentioned national guidelines refer). Attention shall be given in the site-specific flood risk assessment to building design and creating a successful interface with the public realm through good design that addresses flood concerns but also maintains appealing functional streetscapes. All potential sources of flood risk must be addressed in the SSFRA.
SIO9	Proposals which may be classed as 'minor development', for example small-scale infill, small extensions to houses or the rebuilding of houses or paving of front gardens to existing houses, most changes of use and small-scale extensions to existing commercial and industrial enterprises in Flood Zone A or B, should be assessed in accordance with the Guidelines for Planning Authorities on the Planning System and Flood Risk Management and Technical Appendices, November 2009 as may be revised/updated, with specific reference to Section 5.28 and in relation to the specific requirements of the Strategic Flood Risk Assessment. The policy shall be not to increase the risk of flooding and to ensure risk to the development is managed.
SIO10	That recommendations and flood maps arising from the Fingal-East Meath CFRAM Study, the Dodder CFRAM Study and the Eastern CFRAM Study are taken into account in relation to the preparation of statutory plans and development proposals. This will include undertaking a review of the Strategic Flood Risk Assessment for Dublin city following the publication of the Final Eastern CFRAM Study, currently being produced by the OPW
SIO11	To work with neighbouring local authorities when developing cross-boundary flood management work programmes and when considering cross-boundary development

SIO12	To ensure each flood risk management activity is examined to determine actions required to embed and provide for effective climate change adaptation as set out in the Dublin City Council climate change adaption policy and in the OPW Climate Change Sectoral Adaptation Plan Flood Risk Management applicable at the time.
	NATURAL HERITAGE & LANDSCAPE
GI6	It is the Policy of Dublin City Council
	To support and implement the objectives of the National Landscape Strategy
GI7	To continue to protect and enhance landscape, including existing green spaces through sustainable planning and design for both existing community and for future generations in accordance with the principles of the European Landscape Convention.
GI8	To protect and enhance views and prospects which contribute to the appreciation of landscape and natural heritage. It is an Objective of Dublin City Council:
GI06	To prepare a Landscape Character Assessment (LCA) for Dublin city during the lifetime of the plan in accordance with the National Landscape Strategy and forthcoming national methodology
GI07	To promote the city landscapes, including rivers, canals and bay, as a major resource for the city and forming core areas of green infrastructure network
GI08	To undertake a 'Views and Prospects' study to identify and protect the key views and prospects of the city. Additional views and prospects may be identified through the development management process and local area plans
GI09	To maximise managed access to key landscape and amenity areas of Dublin city
GI1	It is the Policy of Dublin City Council: To develop a green infrastructure network through the city, thereby interconnecting strategic natural and semi-natural areas with other environmental features including green spaces, rivers, canals and other physical features in terrestrial (including coastal) and marine areas.
GI2	That any plan/project, either individually or in combination with other plans or projects that has the potential to give rise to significant effect on the integrity of any European site(s), shall be subject to an appropriate assessment in accordance with Article 6(3) and 6(4) of the EU Habitats Directives.
GI3	To develop linear parks, particularly along waterways, and to link existing parks and open spaces in order to provide green chains throughout the city. Where lands along the waterways are in private ownership, it shall be policy in any development proposal to secure public access along the waterway.
GI5	To co-ordinate open space, biodiversity and flood management requirements, in progressing a green infrastructure network.
GI5	To promote permeability through our green infrastructure for pedestrians and cyclists.

	It is an Objective of Dublin City Council:
GIO1:	To integrate Green Infrastructure solutions into new developments and as part of the development of a Green Infrastructure Strategy for the city
GIO2:	To apply principles of Green Infrastructure development to inform the development management process in terms of design and layout of new residential areas, business/ industrial development and other significant projects It is an Objective of Dublin City Council:
GIO3:	To focus on key streets in the city area between the canals for 'greening' by way of higher standards of planting and amenity along key routes.
GIO4	To improve pedestrian and cycle access routes to strategic level amenities while ensuring that ecosystem functions and existing amenity uses are not compromised and existing biodiversity and heritage is protected and enhanced.
GIO5:	To engage with and involve corporate volunteers, landowners and relevant agencies to support their communities in the development and delivery of green infrastructure programmes.
GI9	It is the Policy of Dublin City Council 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
GI10:	To continue to manage and protect and/ or enhance public open spaces to meet the social, recreational, conservation and ecological needs of the city and to consider the development of appropriate complementary facilities which do not detract from the amenities of spaces.
GI11:	To seek the provision of additional spaces in areas deficient in public open spaces – by way of pocket parks or the development of institutional lands.
GI12:	To ensure equality of access for all citizens to the public parks and open spaces in Dublin City and to promote more open space with increased accessibility and passive surveillance where feasible. In this regard the 'Fields in Trust' benchmark for green/recreational space city wide shall be a policy goal and quality standards.
GI13	To ensure that in new residential developments, public open space is provided which is sufficient in quantity and distribution to meet the requirements of the projected population, including play facilities for children.
GI14:	To promote the development of soft landscaping in public open spaces, where feasible, in accordance with the principles of Sustainable Urban Drainage Systems
GI19:	It is the Policy of Dublin City Council: To ensure a co-ordinated approach to the management of Dublin Bay with other State and semi-State agencies through the Dublin Bay Biosphere Partnership to develop a Biosphere Strategy for the sustainable development of Dublin Bay.

GI20:	To seek continued improvement in water quality, bathing facilities and other recreational opportunities in the coastal, estuarine and surface waters in the city, having regard to the sensitivities of Dublin Bay and to protect the ecology and wildlife of Dublin Bay.
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.)
GI22	To promote nature conservation of Dublin Bay by improving information and interpretation of its biodiversity for recreational users and visitors
GI23	To protect flora, fauna and habitats, which have been identified by Articles 10 and 12 of Habitats Directive, Birds Directive, Wildlife Acts 1976–2012, the Flora (Protection) Order 2015 S.I No. 356 of 2015, European Communities (Birds and Natural Habitats) Regulations 2011 to 2015.
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 Arts, Heritage, Regional, Rural and Gaeltacht Affairs.
GI25	To make provisions for habitat creation/ maintenance and facilitate biodiversity by encouraging the development of linear parks, nature trails, wildlife corridors, urban meadows and urban woodlands
GI26:	To have regard to the conservation and enhancement of significant non-designated areas of ecological importance in accordance with
GIO22	It is an Objective of Dublin City Council To promote and upgrade visitor facilities at North Bull Island to raise awareness of biodiversity and promote nature conservation and manage recreation sustainably, having regard to Article (6) of the Habitats Directive. It is the Policy of Dublin City Council:
GI27:	To minimise the environmental impact of external lighting at sensitive locations to achieve a sustainable balance between the needs of an area, the safety of walking and cycling routes and the protection of light sensitive species such as bats. It is an Objective of Dublin City Council:
GIO23:	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
GIO24:	To develop Biosecurity Codes of Practice to deal with invasive species and ensure compliance with EU (Birds and Natural Habitats) Regulations 2011 and EU Regulations 2014 on the prevention and management of the introduction and spread of invasive alien species.

GI28:	To support the implementation of the Dublin City Tree Strategy, which provides the vision for the long-term planting, protection and maintenance of trees, hedgerows and woodlands within Dublin City
GI29:	To adopt a pro-active and systematic good practice approach to tree management with the aim of promoting good tree health, condition, diversity, public amenity and a balanced age-profile.
GI30:	To encourage and promote tree planting in the planning and development of urban spaces, streets, roads and infrastructure projects
GIO25	It is an Objective of Dublin City Council To protect trees in accordance with existing Tree Preservation Orders (TPOs) and, subject to resources, explore the allocation of additional TPOs for important/ special trees within the city based on their contribution to amenity or the environment.
GIO26	To review ancient and species-rich hedgerows within the city (as identified in the 2006 survey of ancient and species rich hedgerows in Dublin city) and protect existing hedgerow sections
GIO27	To protect trees, hedgerows or groups of trees which function as wildlife corridors or 'stepping stones' in accordance with Article 10 of the EU Habitats Directive.
GIO28	To identify opportunities for new tree planting to ensure continued regeneration of tree cover across the city, taking account of the context within which, a tree is to be planted and planting appropriate tree species for the location
GIO29:	To encourage trees to be incorporated in (a) the provision of temporary green spaces (e.g. pop-up parks) either planted into the soil or within moveable containers as appropriate and (b) within sustainable urban drainage systems (SUDS), as appropriate.

8.3 RECOMMENDED MITIGATION MEASURES FOR THE DRAFT DUBLIN CITY CCAP

Please see the SEA Statement and SEA Screening Report for the Final Mitigation measures approved by Dublin City Council

Overarching measure	An integrated approach to decision making in relation to these climate change actions is recommended.	Included in CCAP Yes/no?
Flood Resilience	Recommended text in green	
3	Prepare and Implement an Integrated Coastal Zone Management Plan that addresses natural and cultural heritage and aligns with the Marine Spatial Planning Directive	
7	Develop template to capture impacts, response and costs (including ecosystem services/natural capital costs) for all major climate events	
10	Update DLA urban drainage and flooding policies for current knowledge of flood risk and the latest best practice in drainage design promoting natural flood measures as a priority	
	The following flood storage actions will incorporate nature based solutions and biodiversity enhancement measures where possible.(Refers to actions 11 to 18)	
New measures to be consistent with neighbouring Local Authorities	Communication and awareness campaigns on flood risk management and natural flood management measures	

9 Monitoring

9.1 Introduction

It is proposed, in accordance with Article 10 of the SEA Directive, to base monitoring on a series of indicators which measure changes in the environment, especially changes which are critical in terms of environmental quality, for example water pollution levels. Monitoring will focus on the aspects of the environment that are likely to be significantly impacted upon by the implementation of the CCAP 2019-2024.

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

The monitoring programme will consist of an assessment of the relevant indicators and targets against the data relating to each environmental component. Similarly, monitoring will be carried out frequently to ensure that any changes to the environment can be identified.

Overall, this Climate Change Action Plan will be monitored and updated on an annual basis, with a review and revision every five years. This draft of the Climate Change Action Plan was developed through DCC's Climate Change Sub-Committee of the Environment SPC and approved by Environment SPC.

The Executive Manager of the Environment & Transportation Department will report on progress to the SPC annually and the SPC will monitor progress towards the set targets. Every five years there will be a full review and revision of the plan taking into account demographic, technical and other changes that have occurred and any new targets that have been introduced.

Consequently, it is recommended that this SEA monitoring regime be undertaken in line with the development plan review process; as the data will be captured through the CCAP monitoring regime, the strategic environmental monitoring can both use these data and also be derived from the planning and landuse data by DCC.

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

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

- Monitoring specific indicators and identifying any significant effects, including cumulative effects;
- Reviewing the effectiveness of monitoring/mitigation measures during the lifetime of the CCAP; and
- Identifying any cumulative effects.

It is recommended that the monitoring report be made available to the public upon its completion. Table 12 below presents the SEA Monitoring Table. This table sets out the strategic environmental objectives, indicators and targets to be applied in monitoring the significant environmental effects of the implementation of the CCAP, in accordance with Section 13J(2) of the Planning and Development (SEA) Regulations 2004, as amended. It is proposed that the SEA monitoring reporting should go parallel with the reviewing of the CCAP to the CDP and when the next plan is being prepared.

Table 14 Monitoring Measures

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/ crèches/community parks/sports facilities and primary health centres	Every 2 years	(PPDD)
Flora and Fauna	To protect and where appropriate enhance the diversity of habitats, species, ecosystems and geological features.	appropriate enhance the diversity of habitats, species, ecosystems and species which are within designated sites	Number of developments granted planning permission within designated sites.	Every 2 years	(PPDD) Parks and Landscape Services
			Number of Natura Impact Statements submitted to Dublin City Council	Every 2 years	Parks and Landscape Services

Environmental Receptor	Environmental Protection Objective	Target	Indicator	Frequency of Reporting	Department Responsible
		habitats and species outside of designated sites.	Percentage increase or decrease of bat and otter populations in Dublin city	Every 2 years	Parks and 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 and 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 and Landscape Services
			Totals of, or reduction in the quantum of greenfield lands; length of linked green corridors		(PPDD) Parks and 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 and Landscape Services
		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 and Landscape Services

Environmental Receptor	Environmental Protection Objective	Target	Indicator	Frequency of Reporting	Department Responsible
			Tree canopy cover within the city area to contribute to carbon sequestration (no. of trees)	Every 2 years	Parks and Landscape Services
		Implementation of setback/ buffer zones of 10 m for development along watercourses	Number of planning applications adhering to the 10 m 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 Air Quality	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 regulation limits	Every 2 years	Roads and Traffic – Noise and Air Section
All Quality	Minimise emissions of pollutants to air associated with development activities	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

Environmental Receptor	Environmental Protection Objective	Target	Indicator	Frequency of Reporting	Department Responsible
	quality.	Increase energy efficiency (reduce energy waste) from renewable energy	Number of objectives implemented from Dublin City Energy Strategy	Every 2 years	Energy Division
		sources in line with the National Energy Efficiency Action Plan	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 and group heating systems	Every 2 years	Energy Division
		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 and Traffic – Noise and 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 and Traffic

Environmental Receptor	Environmental Protection Objective	Target	Indicator	Frequency of Reporting	Department Responsible
		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 and 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 and Engineering - Water Division
		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 and Engineering — Water Division
Water	To protect and where necessary improve the quality and management of watercourses and	Achieve and maintain good status of all surface water bodies.	Improvement in Status of Water Body as per RBMP	Every 2 years	Environment and Engineering – Water Division

Environmental Receptor	Environmental Protection Objective	Target	Indicator	Frequency of Reporting	Department Responsible
	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.	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 and Engineering – Water Division
		Identify and provide Surface Water pipelines as appropriate	Lengths of new Surface Water pipeline installed	Every 2 years	Environment and 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	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 and Transportation
	infrastructure to meet the needs of the city's population	Extend and improve the cycling and walking network	Number of new cycling and walking schemes implemented	Every 2 years	Environment and 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

Environmental Receptor	Environmental Protection Objective	Target	Indicator	Frequency of Reporting	Department Responsible
		Protect and enhance green infrastructure	Number of greenfield sites developed	Every 2 years	(PPDD) Parks and Landscape Services
Cultural 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
		monuments	Number of archaeological sites with archaeological conditions attached	Every 2 years	(PPDD) City Architects – 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,	Number of conservation plans implemented through the Dublin Heritage Plan	Every 2 years	(PPDD) City Architects – Conservation

Environmental Receptor	Environmental Protection Objective	Target	Indicator	Frequency of Reporting	Department Responsible
		to ensure enhancement of key sites			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 landscapes and soils and geological features	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 and Landscape 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 and Landscape Services
		Develop brownfield lands and vacant sites	Total area of brownfield lands and vacant sites developed	Every 2 years	(PPDD) Parks and Landscape Services

Environmental Receptor	Environmental Protection Objective	Target	Indicator	Frequency of Reporting	Department Responsible
Inter- relationships	Maintain and improve the health of people, ecosystems and natural processes Actively seek to integrate opportunities for environmental enhancement during adaptation to climate change	Integration of blue and green infrastructure measures including in approved planning applications within Dublin City Council including SUDS, Integrated Wetlands, Hedgerows, Native tree planting scheme	Blue and Green Infrastructure measures implemented over lifetime of plan Number of Blue infrastructure features included in development		

9.3 Conclusion

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

The SEA and Appropriate Assessment processes have been undertaken in line with the Planning and Development (Strategic Environmental Assessment) Regulations 2004 to 2011 (as amended). Subject to the full and proper implementation of the mitigation measures outlined in this SEA Environmental Report and the Proposed CCAP, it is considered that significant adverse impacts on the environment will be avoided.

ANNEX A: DETAILED ASSESSMENT OF ACTIONS IN THE DUBLIN CLIMATE CHANGE ACTION PLAN 2019-2024

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

SEA Topic								
Biodiversity Flora and Fauna	Population and human health Noise	Water Resources including flood	Soil and Geology	Material Assets	Air Quality and Climatic Factors	Cultural Heritage	Landscape	Interrelation ship
								(3)

ENERGY AND BUILDINGS

	Action Area						Onto darge			9
	Energy Planning									
1	Create Energy Master Plan for the Dublin Region		^	\$	\$	\$	↑	\$	\$	^
2	Requirement for all new developments to be district heating-enabled in Poolbeg West, North Lotts and Grand Canal SDZs	\$	^	^	\$	↑	^	^	↑	^
3	Prepare Dublin City Sustainable Energy and Climate Action Plan	^ \$	↑	↑	^	↑	↑	↑	↑	↑
4	Evidence-based climate change chapter in County Development Plan 2022-2028	^	↑	↑	^	↑	^	↑	↑	^
	ENERGY Management									

	Action Area						Cinala charge			③
5	Develop ISO 50001 compliant energy management system	0	^	↑	^	↑	^	↑	↑	^
6	Annual Monitoring and Reporting to SEAI	0	↑	↑	↑	↑	↑	↑	^	^
7	Publish Energy Review annually	0	↑	0	0	↑	↑	0	0	^
8	Display Energy Certificates for public buildings	0	↑	0	0	↑	↑	0	0	^
	ENERGY EFFICIENCY & RENEWABLES									
9	Identify sites for trialling renewable energy projects, including Solar PV	\$	^	↑	^	^	^	↑	↑	^

	Action Area						Circle charge			③
10	Energy efficiency works in 30 Council owned and operated buildings	^	^	^	↑	↑	↑	↑	↑	^
11	Dublin Fire Brigade energy efficiency works	0	^	0	0	^	^	0	0	^
12	Continue the Fabric Upgrade Programme of housing stock	0	•	0	0	↑	↑	0	0	^
13	Develop and implement Public Lighting Master Plan	\$	•	0	0	↑	↑	0	0	^
14	Landlord lighting upgrades in 15 complexes across the City	\$	^	0	0	^	^	0	^	^
15	Facilitate EPC project in 7 leisure centres/dry sports centres across Dublin City	^	^	↑	↑	↑	^	^	^	^

	Action Area						Chulle charge			③
16	Install PV panels on Council buildings in Dominick Street, North King Street, Cornamona Court	0	^	↑		↑	↑	0	0	^
17	New nZEB Super Depots	0	^	^	^	^	↑	^	↑	^
	RESEARCH & INNOVATION									
18	Develop proposal to use Docklands SDZ to test smart public lighting infrastructure	^	^	^	^	↑	↑	↑	↑	^
19	Expand and develop Small Business Innovation & Research (SBIR) programme	^	^	^	↑	↑	↑	↑	^	^
20	Work with CARO on research and project proposals for grant funding	^	↑	↑ 0	↑ 0	↑	↑	0	1 0	^
	ENERGY AWARENESS									

	Action Area						Cinata charge			9	
21	Continued staff energy awareness in Council buildings	0	^	0	0	1	↑	0	0	^	
22	Engage with students about energy and buildings through CPD Programme/Engineers Week		^		^	•	↑	•		^	
23	Provide citizens with energy awareness material in public buildings		^			↑	^			^	
24	Provide City Council tenants with energy awareness materials at home, particularly at the time of taking up new tenancy		^			•	^			^	
25	Monitor and develop the Home Energy Savings Kits in DCC's public libraries		^			↑	^			^	

	Action Area						Ornita charge			③
	ENERGY & BUILDINGS									
26	Develop research and funding opportunities for renewable and efficiency projects	^	↑	^	^	•	↑	↑	^	↑
27	Dublin District Heating System	↑	^	^	^	↑	^	^	^	^
28	Undertake programme of flat complex regenerations	↑	^	↑	↑	↑	^	↑	^	↑

Comment: For all of the above actions there are positive, long term impacts regarding climate change, air quality, population and human health and overall will achieve consistency with the Interrelationship SEOs.

For a number of the actions, there are no significant interactions identified for a number of SEOS, examples being energy awareness raising and SEOs relating to water.

For some of the actions such as grand applications/funding in conjunction with CARO (Action 20) neutral or positive effects for SEOs around biodiversity, landscape as the detail at this stage is not known.

For proposals around lighting, district heating, energy masterplans – impacts may be identified, again for Biodiversity e.g.; adverse effects on lighting of dark corridors used for commuting by species such as otters/bats. However, existing provisions of the Dublin City CDP 2016-2022 are considered to be appropriate and robust in this instance to ensure adverse effects are avoided.

Action Area



















For energy and building actions, positive long term effects relating to cumulative action addressing greenhouse gas emissions across all SEOs are identified. Though small, combined together, these actions can make a contribution and showcase best practice elsewhere.

A small number of SEOs could, in the absence of mitigation give rise to potential adverse effects; these relate to the following:

Action 1: Create an Energy Masterplan for Dublin,

Action 2: District heating enabled in Strategic Development Zones

Action 3: Develop a Public Lighting Masterplan "

However, there are sufficient and appropriate mitigation measures through environmental protection measures in the DCC CDP 2016-2022 to address these and provide appropriate mitigation.

TRANSPORT

	TRANSPORT					F	Climate charge			③
1	Develop strategy to convert fleet to low emission vehicles	0	↑	0	0	^	^	O	0	↑
2	Pilot more electric vehicles within Council fleet	0	^	О	0	^	^	O	0	↑

	TRANSPORT						Citizan Mary			③
3	Conduct detailed study of staff modal split	О	^	0	Ο	^	^	Ο	О	^
4	Promote Cycle-to- Work Scheme to DCC staff	0	^	О	0	^	^	0	Ο	^
5	Implement Smart Mobility Hub in Civic Offices	0	^	0	0	^	^	0	O	^
6	Carbon offset programme for staff flights	^	^	^	^	^	^	^	^	^
7	Occupational driver training for fleet staff	0	^	0	О	^	^	Ο	О	^
8	Assess potential for using an e-mobile for real time air quality monitoring in the City Centre	О	↑	0	О	^	^	0	0	^

	TRANSPORT		*			7	Circular charge.			®
	PLANNING & PUBLIC REALM									
9	Implement the measures outlined in the Dublin City Centre Transport Study 2016	^	^	^	^	^	^	^	^	^
10	Implement traffic calming programme	0	^	0	0	^	^	0	^	^
11	Expand 30 km/h speed limit zones to all residential areas of the City	О	^	0	0	^	↑	0	0	^
12	D30 public awareness campaign of speed limits in City	0	^	0	0	^	^	0	0	^
13	Regular maintenance of regional and local roads	\$	^	‡	0	^	^	0	0	^

	TRANSPORT						Circum Marga			9
14	Rolling out last mile delivery eco hubs in the City Centre Area	^	^	^	^	^	^	^	^	^
15	Develop 'last mile' delivery solutions, as part of SBIR challenge		↑			^	^			↑
16	Phase I Pedestrian Zones (2016-2022): Liffey Street Mary Street Talbot Street Castle Street/Cork Hill Barnardo's Square Temple Bar Public Realm		^	^	^	↑	^	↑	↑	↑
17	Phase II Pedestrian Zones (2023-2028):	^	^	^	^	^	^	^	^	^

TRANSPORT	i		Clinate charge		③
Dame Street West					
Lord Edward Street					
Parnell Street					
O'Connell Bridge					
D'Olier Street					
Lombard Street					
Westland Row					
Nassau Street					
Aungier Street/Valentine District					
Merrion Square					
Pearse Street					
North Lotts					
North Quays					

	TRANSPORT					(2)	Cinala charge			③
18	Phase III Pedestrian Zones (2029 and beyond): • South Quays • Tara Street	^	^	^	^	^	^	^	^	^
	Parkgate Street									
19	To investigate the introduction of traffic-free areas on sections of	1	^	^	^	^	^	^	^	^
	Drury Street									
	• South William Street									
	Exchequer Court									
	Dame Court									
	Dame Lane									
	retaining access for car parks and deliveries									

	TRANSPORT						Circle Starge			9
20	World Car Free Day	↑	↑	^	^	^	↑	↑	↑	↑
21	European Mobility Week	0	^	0	0	^	↑	0	0	^
22	DCC to liaise with NTA on BusConnects programme	\$	^	1	^	^	^			^
23	2 EV Charging point trials in the Docklands	О	↑	O	o	^	1	o	О	↑
24	Assessment of Council public car parks for trickle and rapid charge EV points	О	1	0	O	1	^	O	О	•
	ACTIVE TRAVEL & BEHAVIOUR CHANGE									

	TRANSPORT					F	Cinate charge			③
25	Organise Pedestrian Days in areas with high footfall	O	↑	o	o	^	^	o	^	↑
26	Identify and promote use of new routes on Hike It! Bike It! Like It! platform	Û	^	\$	↑	^	^	^	^	^
27	Develop cycle network strategy	\$	↑	\$	\$	\$	^	\$	\$	^
28	Dodder Greenway (Pedestrian and Cycle Improvement) - 7.5Km section	↑	^	↑	↑	^	^	^	^	^
29	4 km Clontarf-to-City Centre Cycle Scheme	\$	↑	↑	↑	^	↑	↑	↑	•
30	Liffey Cycle Route	О	^	^	^	^	^	\$	1	^
31	Fitzwilliam Cycle Route - 1 km route	0	^	1	↑	^	^	1	^	^

	TRANSPORT		i			(F)	Circum charge			③
	with upgrades for junctions									
32	Sandyford-to-City Centre Cycle Scheme - proposal and options for 9 km route	\$	↑	\$	↑	↑	↑	\$	\$	↑
33	Royal Canal Phase 3 - 2.1 km two-way cycle track with pedestrian route	↑	↑	^	↑	↑	↑	↑	↑	↑
34	Grand Canal Premium Cycle Route - 4.4 km addition to route linking Portobello to Blackhorse	О	↑	^	↑	↑	↑	↑	↑	↑
35	Pedestrian and cycle bridges over the Royal Canal at North Wall Quay	0	↑	^	↑	↑	^	^	^	^
36	Cycle Training Programme for 6th	О	↑	^	↑	↑	^	^	^	→

	TRANSPORT					(2)	Clinds darge			③
	Class students / Pedal Power Labs									
37	Emissions-linked parking charges in City Centre	↑	↑	↑	↑	↑	↑	↑	↑	↑
38	Increase number of public bike parking facilities	О	↑			^	↑	\$	↑ \$	^
39	Expand Stationless Bike scheme	0	↑	0	О	↑	↑	О	О	↑
40	Expand Dublinbikes scheme	О	1	0	О	↑	↑	\$	\$	↑
41	Implement policy to increase modal shift to cycling	^	^	^	^	^	•	^	^	^
42	DCC to host Velo City 2019	0	•	0	О	↑	^	О	О	↑

	TRANSPORT					(F)	Clinate charge			③
43	Install pilot Electric Vehicle charging station at John Rogersons Quay	О	↑	О	О	^	^	О	0	^
44	Samuel Beckett Bridge segregated cycle lane	О	↑	О	О	^	^	0	0	^
	PUBLIC TRANSPORT									
45	Sustainable transport hubs – various locations	\$	^	\$	Û	•	•	\$	\$	•
46	Develop bus routes including the Bus Connects programme	\$	↑	\$	1	^	^	\$	\$	^
47	Carry out Canal Cordon Count	0	•	О	О	О	О	О	О	^

	TRANSPORT		i			F	Onda dage			③
48	Implement policy to increase modal shift to public transport	^	↑	↑	↑	↑	↑	↑	↑	↑
49	Implement policy to give bus priority on core bus network	•	•	^	^	•	•	^	•	•
	TRANSPORT									
50	Develop a strategy to promote car sharing	0	1	0	0	↑	↑	0	0	↑
51	Expand availability of EV charging points	0	1	0	0	↑	↑	0	0	↑
52	Replace diesel hand sweepers/power washers with electric models	0	•	0	0	•	•	0	0	•
53	Dublin City Council to promote Mobility-as- a-Service (MaaS) initiatives in the City	0	^	0	0	•	•	0	0	^

TRANSPORT	ii ii		F	Clinia charge		®
to increase active travel options						

Comment: As with the energy actions, all of these actions for Transport generate positive, medium to long term effects across Climate change, Air quality, Material Assets and Human Health.

Actions such as 14, 16, 18 and 19 that reduce traffic in town and seek to implement/research pedestrian areas in the city centre are positive and create long, term positive effects across all parameters. These actions can lead to a decline in local air pollution hotspots with accompanying benefits for population and human health as well as biodiversity. In addition these actions result in a reduction in noise emissions with accompanying positive benefits for the public and urban realm. Increase permeability means that opportunities to enhance green infrastructure measures at local scale can also be considered.

Cumulatively and in combination, several of this actions encourage a modal shift and in turn this would give rise to indirect positive effects, for example by creating more physical activity in terms of travel to work and school, positively affecting air quality with accompanying benefits to both populations, human health and with a reduction in emissions associated with Particulate Matter and Nitrogen Dioxide positive effects on Biodiversity, flora and fauna and surface water features.

A number of these Transport Actions are recommended for mitigation either due to the potential in the absence of mitigation on conservation management objectives of European Sites (Actions 12, 13 and 14); however it is considered the existing environmental protection measures in the DCC CDP2016-2022 should address these potential effects appropriately.

The following Actions Dodder greenway (action 28) and Action 32—Sandyford to City routes are identified in the AA Screening as needed to progress to Stage 11 AA as given the absence of specific details (no finalised route was available at the time of writing; a preferred emerging route was published in Oct. 2018) regarding this projects the potential likely significant effects to the follows European Sites cannot be ruled out at this stage:

Action 45 was described in the AA screening as follows:

Yes. Given that the location of these hubs are not known and that their provision is likely to result in land use works the potential for likely significant effects to the following European Sites cannot be ruled out at this stage:

North Dublin Bay SAC;

TRANSPORT



















North Bull Island SPA:

South Dublin Bay River Tolka Estuary SPA;

South Dublin Bay SAC; and

Baldoyle Bay SAC.

In terms of larger/regional transport actions (e.g. Bus Connects) the SEA ER of the Eastern and Midland RSES (draft) highlights the following

Modifications to existing road and rail routes, and the building of any new routes, have potential to impact negatively on biodiversity. Any potential impacts of ongoing or proposed road or rail projects should be considered. Key projects include proposed road projects in the Region and an aspiration for the future twin tracking of the rail line both north and south from Dublin with the DART extension involving electrification of part of it. As the rail line runs adjacent to, and in some cases through, European sites, such projects will require appropriate assessment. In addition to loss of annexed habitat there is potential for bird collisions with overhead cables for the DART where it crosses estuaries such as at Malahide and Rogerstown (Scoping submission)

Construction of linear road and rail infrastructure has the potential for short to long term direct and indirect negative effects for all environmental receptors as a result of emissions, habitat loss and disturbance of species, deterioration in air quality and noise disturbance. Robust feasibility studies and site / route selection are the most effective manner to reduce impacts on the environment from such enhancements and the RSES should require these stages are fully delivered before decisions are made. It is particularly important that demand management and overall systems management options are given proper consideration as options to online and offline solutions. It is acknowledged that investment priorities for these strategic assets are administered by other agencies and departments and as such an RPO which seeks to proactively engage with the key stakeholders for land transport would be a positive addition

(Discussion in SEA ER of Transport policies)

FLOOD RESILIENCE

	FLOOD RESILIENCE						Cloude charge			③
	FLOOD RISK MANAGEMENT									
1	Implement flood risk management guidelines	^	•	↑	↑	↑	↑	^	^	^
2	Coordinate Emergency Response Plans	↑	^	1	↑	↑	↑	↑	^	^
3	Implement flood awareness campaign with the OPW	\$	^	\$	\$	↑	↑	\$	\$	^
4	Monitoring of flood forecasting and warning system	^	1	↑	↑	^	↑	^	↑	↑
5	Produce new Design Guide for SuDS	^	1	↑	↑	↑	↑	↑	^	^
6	Implement Sustainable urban Drainage Guidelines in Council buildings	^	1	↑	^	^	^	^	↑	↑

	FLOOD RESILIENCE						Challe charge			③
7	Build demonstration sites to show options for SuDS	^	↑	^	^	^	^	^	↑	↑
8	Establish a Dublin Bay Sentinel Group, led by DCC and including other key stakeholders, to monitor tide levels and other marine related flood risk issues in Dublin Bay.	↑	↑	↑	↑	↑	^	^	↑	↑
9	Develop and implement an Integrated Coastal Zone Management plan for Dublin Bay, considering natural and cultural heritage, aligned with County Climate Change Action Plans, other local authority plans and strategies and aligns with the Marine Spatial Planning Framework Directive.	\$	↑	\$	\$	↑	^	\$	\$	^

	FLOOD RESILIENCE						Clinate charge			®
1 0	Implement the Dublin Bay Biosphere work programme	^ \$	↑	^	↑	↑	↑	↑	^	↑
1 1	Trial hemp baskets for flood protection	^	↑	^	↑	↑	↑	↑	↑	↑
1 2	Identify areas for integrated constructed wetlands	\$	↑	1	↑	↑	↑	↑	\$	^
1 3	Expansion of rainfall sensors and weather stations, as part of the Connect Flooding Demonstrator programme	0	↑	•	↑	↑	1	↑	\$	↑
1 4	Phase 2 of Gully Monitoring SBIR Challenge	0	^	↑	↑	↑	↑	↑	\$	^
1 5	Develop a climate change impact GIS risk map with scenarios for the Dublin Region	↑	↑	1	^	^	↑	0	O	↑

	FLOOD RESILIENCE						Cimala charge			®
1 6	Develop template to capture impacts, response and costs including ecosystem services/natural capital costs for all major climate events	\$	↑	↑	↑	↑	↑	↑	\$	↑
1 7	Establish a Working Group to deal with the issue of pluvial flood risk. This shall include: How to manage "urban creep" and the increase in impermeable surfaces Promotion of SuDS early in design process Development of pluvial flood forecasting through use of point rainfall forecasting Interim use of DCC "FLAG" meetings as a model for DLAs in	\$	↑	↑	↑	↑	↑	^		↑

	FLOOD RESILIENCE					#	Clinda charge			®
	relation to pluvial flood forecasting and response. • Water quality									
1 8	Update DLA urban drainage and flooding policies for current knowledge of flood risk and the latest best practice in drainage design promoting natural flood measures as a priority	\$	↑	↑	↑	^	^	^	\$	↑
1 9	Risk workshops to assess impacts on Council services	\$	↑	↑	^	↑	↑	^	\$	^
	FLOOD DEFENCE									
The	following flood storage actions w	ill incorpora	te nature ba	ased sol	utions a	nd biodiv	ersity enha	ncement	measures who	ere possible
2	South Campshires Flood Defence	↑	↑	↑	^	^	^	^	^	↑

	FLOOD RESILIENCE					A	Cinale charge			③
2	Sir John Rogerson's Quay flood alleviation scheme	↑	^	^	↑	^	^	^	↑	↑
2 2	North Campshires flood alleviation scheme	^	^	^	^	^	^	^	^	•
2 3	Clanmoyle flood alleviation scheme	^	↑	↑	↑	^	^	^	^	•
2 4	Wad flood alleviation scheme	^	^	↑	↑	↑	^	^	^	↑
2 5	Poddle flood alleviation scheme	\$	\$	\$		\$	\$	\$	\$	\$
2	Camac flood alleviation scheme	\$	\$	\$	\$	\$	\$	\$	\$	\$
2 7	Dollymount flood alleviation scheme	^	^	^	^	^	^	↑	^	•

	FLOOD RESILIENCE						Clinate charge			®
2 8	Clontarf Promenade flood alleviation scheme	^	↑	↑	↑	^		^	^	
2 9	Sandymount Promenade flood alleviation scheme	\$	\$	\$	1	\$	\$	\$	\$	\$
3 0	Sandymount Phase 2 flood alleviation scheme	‡	\$	\$	\$	\$	\$	\$	‡	\$
3	Chapelizod flood alleviation scheme	‡	1	\$	\$	\$	\$	\$	‡	\$
3 2	Island Bridge flood alleviation scheme	‡	\$	\$	\$	\$	\$	\$	‡	\$
3	Santry River Regeneration Project	‡	\$	\$	\$	\$	\$	\$	‡	\$
3 4	River Dodder Flood Defence Works in the fluvial section upstream of Ballsbridge	\$	①	\$	\$	\$	Û	\$	\$	1

	FLOOD RESILIENCE						Clouds charge			®
	FLOOD RESILIENCE									
<i>3 5</i>	Study impacts and benefits of increased buffer distances to watercourses	↑	↑	1	1	↑	↑	↑	↑	^
3 6	Promote and encourage community involvement in the retrofit of SuDS in existing developments	↑	1	↑	↑	•	↑	^	↑	↑
	Communication and awareness campaigns on flood risk management and natural flood management measures									

Comment:

In relation to the Coastal Zone Management Plan it is recommended that additional mitigation be provided to allow for the preparation of an integrated coastal zone plan that addresses cultural and well as natural resources and heritage and is line with the Marine Spatial Planning Directive.

For several of the flood related projects positive effects are identified as they have already been through the consenting process and are completed. For a series of other actions like such as Action 25 (Poddle,) 26 (Camac), 31 Chapelizoid – these actions are identified

FLOOD RESILIENCE















as requiring mitigation but it is considered that sufficient mitigation measures are present in either the SEA or Dublin City CDP 2016-2022 relating to flood management. However, to promote co benefits and avoid where possible an over-engineered approach to such works, an overarching mitigation measure promoting nature based solutions where possible is recommended at the start of this section.

A new mitigation measure in relation to awareness raising is recommended to ensure regional consistency across the DLAs in citizen engagement and awareness raising around flood risk management and natural flood management measures.

NATURE BASED SOLUTIONS

	NATURE-BASED SOLUTIONS						Climate change			
	OPERATIONS									
1	Establish regional working group on nature-based solutions	^	^	↑	^	^	^	^	^	^
2	Agree joint action plans to protect native habitats and species across all 4 DLAs	^	^	↑	↑	↑	↑	^	^	^
3	Establish a cross- departmental Trees and SUDS Working Group to promote and pilot water sensitive urban design incorporating urban tree planting	^	^	↑	^	↑	^	^	↑	↑
4	Workshop on Trees and SUDS	1	↑	↑	↑	↑	↑	^	↑	^

	NATURE-BASED SOLUTIONS						Climate change			③
5	Produce regional river basin management guidelines. Use Santry River as demonstration	^	↑	↑	^	^	^	↑	^	^
6	Facilitate an annual workshop for information exchange between biodiversity experts	^	↑	^	^	^	^	↑	↑	^
7	Collect data to inform the preparation of a list of habitats and species in Dublin City vulnerable to climate change	^	^	^	^	^	^	^	^	^
	GREEN INFRASTRUCTURE									
8	Develop Green Infrastructure Strategy for region	^	↑	↑	↑	↑	↑	↑	↑	^

	NATURE-BASED SOLUTIONS					7	Climate charge			9
9	Implement Public Open Space and Parks Strategy	^	^	^	^	^	^	^	^	^
1 0	Map access to green space in City to identify areas of need	^	^	↑	↑	^	^	^	↑	↑
1 1	Continued development of the Dodder Greenway	Û	‡	Û	↑	^	↑	‡	1	↑
1 2	Assess the feasibility of green walls	^	↑	^	^	^	^	^	^	↑
	TREE MANAGEMENT									
1 3	Implement Dublin City Tree Strategy	^	^	↑	^	^	↑	^	^	^
1 4	Continue to map and collect data on trees in Dublin City	^	^	^	^	^	^	^	^	↑

	NATURE-BASED SOLUTIONS					7	Cleate charge			®
1 5	Promote and expand Native Tree Trails programme	↑	^	↑	^	^	^	^	^	^
1 6	Produce guidance on species of public trees for urban planting in accordance with Action 3.1 of the Dublin City Tree Strategy	^	^	↑	^	^	^	^	^	^
1 7	Tree-planting activities with schools including annual National Tree Week and National Tree Day	^	^	↑	↑	↑	↑	^	↑	^
1 8	Investigate the use of the DAFM NeighbourWood Planting scheme for use in suitable urban area as part of the DCC Tree Strategy	^	↑	^	1	^	↑	↑	↑	^
	NATURE CONSERVATION	1	^	^	^	^	^	↑	↑	^

	NATURE-BASED SOLUTIONS						Omate charge			③
1 9	Implement Dublin City Council Invasive Alien Species Action Plan	^	^	^	^	^	^	^	^	↑
2 0	Promote international World Wetlands Day	^	^	^	^	^	^	^	^	↑
2	Provide data to RAMSAR	↑	^	^	^	^	^	↑	^	↑
2 2	Prepare and publish Flora of Bull Island	↑	^	^	^	^	^	^	^	↑
2 3	Conduct a common cord- grass management study and monitoring for North Bull Island SPA	↑	^	^	↑	^	↑	^	^	•
2 4	Prepare a GIS-based ecological sensitivity map of Dublin Bay Biosphere	↑	↑	^	↑	^	^	↑	↑	•

	NATURE-BASED SOLUTIONS					F	Circles sharps			9
2 5	Participate in the INTERREG-funded Acclimatize research project	^	^	^	^	^	^	^	^	↑
2	Conduct light-bellied brent goose roost survey	^	↑	↑	↑	^	^	^	^	↑
2 7	Implement the North Bull Island Management Plan	^	↑	↑	^	^	^	^	^	^
	NATURE-BASED SOLUTIONS	1	^	^	↑	^	^	^	↑	^
2 8	Pilot projects for green roofs on civic buildings	↑	^	^	↑	^	^	^	^	^
2 9	Develop demonstration sites to showcase nature-based solutions with existing land uses	↑	↑	^	^	^	^	^	↑	↑

	NATURE-BASED SOLUTIONS						Circle Starge			③
3 0	North East Inner City Greening Strategy	↑	^	↑	^	↑	^	^	^	^
3 1	Develop urban woodland strategy	^	↑	↑	↑	^	↑	^	^	^
3 2	Incorporate tree and shrub planting in all new Council housing developments	↑	^	^	↑	^	↑	↑	^	^
3	Assess feasibility of urban orchards	^	^	↑	↑	^	↑	^	^	•
3 4	Produce A Guide to Sustainable Living in Dublin City	↑	^	^	↑	^	↑	↑	^	^
3 5	Identify sites suitable for community gardens for local food production	↑	^	^	↑	^	↑	↑	^	^

	NATURE-BASED SOLUTIONS						Climate charge			③
3 6	Assessment of causes and impacts of Ectocarpus brown algal growth in Dublin Bay	^	↑	↑	^	^	^	↑	↑	^
3 7	Prepare a preliminary list of species and habitats vulnerable to climate change for informing environmental impact assessments	^	•	•	•	•	•	↑	^	•
3 8	Prepare an analysis of soil sealing in Dublin City to determine levels of permeability	1	↑	•	•	•	•	↑	^	↑

Comment: the nature based solutions provide for consistency with all the SEOs. This is largely due to the multi-benefit effects of such actions, for example expanding county tree canopy and green roofs will all provide co-benefits to biodiversity, flora and fauna, assist with air quality purification, with accompanying positive effects on human health, assist with carbon storage, and provide landscape benefits.

Action 11 Dodder Greenway extension - Given that the project level details for this scheme are as yet not available and the presence of a hydrological pathway between this watercourse and North Dublin Bay SAC and North Bull Island SPA the potential for likely significant effects to a number of European Sites at Dublin Bay cannot be ruled out:

RESOURCE MANAGEMENT

	RESOURCE MANAGEMENT					F	Climba charge			8
	WASTE MANAGEMENT									
1	Monitor and enforce waste regulation	^	↑	1	^	↑	^	↑	↑	^
2	Assess waste in Council buildings and plan actions	^	↑	1	^	↑	^	↑	↑	^
3	Run staff recycling awareness campaign	0	↑	0	0	^	↑	0	0	^
4	Identify areas in need of civic amenity sites and waste transfer stations	0	^	0	0	^		0	0	^
5	Apply for LAPN (Local Authority Prevention Network) grants	0	^	0	0	^	^	0	0	^

	RESOURCE MANAGEMENT						Olmble charge			(3)
6	Create Stop Food Waste campaign for businesses and schools	0	↑	0	0	↑	↑	0	0	^
7	Promote Reuse Month annually	^	↑	↑	^	^	^	^	^	^
8	Use Eco-Merit programme to advise businesses on reducing waste	^	1	•	^	^	^	^	^	↑
9	Promote recycling to householders through a range of workshops, talks and programmes	^	↑	↑	^	^	^	^	^	^
10	Continue to work with the Rediscovery Centre to promote sustainability	^	^	↑	^	^	^	^	•	↑

	RESOURCE MANAGEMENT						Olmula charge			®
11	Research and implement sustainable procurement guidelines	↑	^	↑	^	↑	^	^	^	^
	LITTER & RECYCLING IN PUBLIC REALM	^	↑	↑	^	↑	^	↑	↑	^
12	Run anti-dumping and anti-litter campaigns	^	↑	^	↑	^	↑	^	^	↑
13	Organise Marine Litter clean up days	^	↑	↑	↑	^	↑	^	^	^
14	Solar Compactor Bins provided in City -	^	↑	^	↑	^	↑	^	^	^
15	Mapping and tagging of City bins	^	↑	↑	↑	^	↑	^	^	↑
16	Identify areas in need of recycling infrastructure	^	↑	^	↑	^	↑	^	^	^

	RESOURCE MANAGEMENT						Olmate charge			9
17	Develop pilot projects for recycling	^	↑	↑	^	^	^	^	^	^
18	Engage with relevant stakeholders and deliver an energy efficiency, circular economy and sustainability training programme targeting micro and small enterprises	^	↑			^	^	^	^	^
19	Investigate introducing a leaf composting programme across the City	↑	↑	↑	^	^	↑	^	^	^
20	Support and promote Tidy Towns/ Green Schools/ City Neighbourhoods initiatives	↑	↑	↑	↑	^	↑	^	•	•

	RESOURCE MANAGEMENT						Olinda charge			③
21	Develop sustainability guidelines and terms and conditions for any events supported, facilitated or organised by DCC	•	•	1	↑	1	↑	•	•	•
22	Review terms and conditions for all events approved by DCC to incorporate possible sustainability conditions	•	↑	•	•	↑	↑	↑	•	^
23	Any events supported, facilitated or organised by DCC will not permit balloon or Chinese lantern releases	^	•	↑	^	↑	^	↑	•	^
24	DCC to consult with the events industry on alternatives to noncompostable single use food and beverage containers at DCC events	↑	↑	↑	↑	↑	^	↑	↑	^

	RESOURCE MANAGEMENT						Olmdin charge			®
25	DCC to select an appropriate event as a pilot to trial alternatives to non-compostable single use food and beverage containers	↑	•	↑	^	↑	↑	↑	•	→
26	Phase out the use of single use plastic cups from all DCC canteens and replace with the use of ceramic cups and personal reusable cups	↑	•	•	↑	^	^	↑	•	↑
27	Identify pilot locations for water access points	↑	↑	↑	↑	^	↑	↑	↑	↑
28	Host and select sites for the Composting Demonstration using Master Composter EPA Stop Food Waste Programme or similar programme to assist sustainable gardening	↑	↑	•	↑	↑	•	↑	•	^

	RESOURCE MANAGEMENT					F	Olmate charge			9
	and management of landscaping waste									
29	Continue to investigate best practice in street recycling facilities	↑	^	^	^	↑	^		→	↑
	WATER CONSERVATION									
30	Implement water conservation campaign in civic buildings		^	^	↑	↑	↑			
31	Develop and implement an education programme to tackle climate issues related to the water sector	↑	↑	^	^	↑	^	↑	^	↑
	RESOURCE MANAGEMENT									

	RESOURCE MANAGEMENT						Climate change			®
32	Green street cleaning; use biodegradable cleaning agents	↑	•	↑	↑	↑	↑	↑	•	↑
33	Develop sustainable construction waste policy	^	↑	1	↑	↑	↑	↑	^	↑
34	Trial of low flush toilets in Council headquarters and social housing		↑		↑	1				^
35	Research feasibility of rainwater harvesting in Council buildings and social housing	^	•	^	↑	↑	•	^	•	↑

Comment:

Again most of the measures are consistent with the SEOs in particular material assets, population and human health, climatic change and air quality.

For several SEOS the indirect and long term effects are positive, for example the water conservation measures.

Actions that address illegal dumping and potential reuse of emissions from landfills generate positive effects as a reduction in illegal dumping creates long term positive effects on soil and geology, water and biodiversity, as well as Landscape and

RESOURCE MANAGEMENT

















Population. In turn an indirect positive effect may relate to accidental introduction of invasive species both through illegal dumping from construction or industry or plastic rubbish which has been identified as a vector for invasive species through water bodies.

ANNEX B: REVIEW OF PLANS AND PROGRAMMES

INTERNATIONAL LEVEL

Title	Summary
Sustainable Development	
UN convention of	The UN convention of Biological diversity was opened for signature at the Earth Summit in Rio de Janeiro on 5 June 1992 and entered into force
Biological Diversity, 1992	on 29 December 1993. To date, there are 193 Parties signed up. The CBD is often seen as the key international instrument for sustainable
	development. The Ecosystem Approach, an integrated strategy for the management of resources, is the framework for action under the
	Convention.
EU Environmental Action	The 7 th EU Environmental Action Programme is more strategic in nature and identifies three main areas to guide EU environmental policy and
Programme to 2020	research. The three thematic priority objectives are intended to:
	Protect nature and strengthen ecological resilience
	Boost sustainable resource-efficient low-carbon growth, and
	Effectively address environment-related threats to health.
Environmental Assessment	
SEA Directive - Assessment	This Directive requires plan-makers to carry out an assessment of the likely significant environmental effects of implementing a plan or
of the effects of certain	programme before the plan or programme is adopted.
plans and programmes on	
the Environment,	
(2001/42/EC) 2001	
Environmental Impact	The EIA Directive (85/337/EEC) came into force in 1985 and applies to a wide range of defined public and private projects, which are defined
Assessment Directive	in Annexes I and II of the Directive. This has been amended with Directive 2011/92/EU and the 2014 Directive (see below).
(85/337/EEC).	
Environmental Impact	It is necessary to amend Directive 2011/92/EU in order to strengthen the quality of the environmental impact assessment procedure, align
Assessment Directive	that procedure with the principles of smart regulation and enhance coherence and synergies with other Union legislation and policies, as well
(2014/52/EC)	as strategies and policies developed by Member States in areas of national competence. The Directive now applies from May 2017.
Biodiversity, Flora and Fauna	
UN Convention of	The Convention on Biological Diversity (CBD) entered into force in December 1993. It has 3 main objectives:
Biological Diversity, 1992	1. The conservation of biological diversity.

Title	Summary
	2. The sustainable use of the components of biological diversity.
	3. The fair and equitable sharing of the benefits arising out of the utilisation of genetic resources.
The Convention on	Protection and conservation of wetlands and habitats of importance to waterfowl
Wetlands of International	
Importance (The Ramsar	
Convention) 1971 and	
subsequent amendments	
EU Biodiversity Strategy to	In 2011 the European Commission adopted a new strategy to halt the loss of biodiversity and ecosystem services in the EU by 2020. There are
2020	six main targets, and 20 actions to help Europe reach its goal. The six targets cover:
	· Full implementation of EU nature legislation to protect biodiversity.
	· Better protection for ecosystems, and more use of green infrastructure.
	· More sustainable agriculture and forestry.
	· Better management of fish stocks.
	· Tighter controls on invasive alien species.
	· A bigger EU contribution to averting global biodiversity loss.
EU Directive on the	This Directive ensures far-reaching protection for all of Europe's wild birds, identifying 194 species and sub-species among them as
Conservation of Wild Birds,	particularly threatened and in need of special conservation measures. Member States are required to designate Special Protection Areas
(2009/147/EC) 1979.	(SPAs) for 194 particularly threatened species and all migratory bird species. SPAs are scientifically identified areas critical for the survival of
Known as the Birds	the targeted species, such as wetlands. They are part of the Natura 2000 ecological network established under the Habitats Directive
Directive	92/43/EEC.
EU Directive on the	The main goal of the Directive is to promote the maintenance of biodiversity by requiring Member States to take measures to maintain,
Conservation of Natural	protect or restore natural habitats, animal and plant species to a favourable conservation status, introducing robust protection for those
Habitats and of Wild Flora	habitats and species of European importance. For Ireland, these habitats include raised bogs, active blanket bogs, turloughs, sand dunes,
and Fauna, (92/43/EEC),	machair (flat sandy plains on the north and west coasts), heaths, lakes, rivers, woodlands, estuaries and sea inlets. The Directive provides for
1992 known as the	a network of protected sites known as The Natura 2000 network, which limits the extent and nature of development which may have a
Habitats Directive	detrimental effect on the flora or fauna identified therein.
European Communities	These regulations consolidate the European Communities (Natural Habitats) Regulations 1997 to 2005 and the European Communities (Birds
(Birds and Natural	and Natural Habitats)(Control of Recreational Activities) Regulations 2010, as well as addressing transposition failures identified in the CJEU
Habitats) Regulations 2011	judgements.

Title	Summary
Green Infrastructure Strategy	Articles 6(1) and (2) of the Regulations require Member States to take appropriate conservation measures to maintain and restore habitats and species, for which a site has been designated, to a favourable conservation status. Furthermore the Regulations require Member States to avoid damaging activities that could significantly disturb these species or deteriorate the habitats of the protected species or habitat types. Under these regulations any plan or project likely to have a significant effect on a Natura 2000 site, either individually or in combination with other plans or projects, shall undergo an Appropriate Assessment to determine its implications for the site. The competent authorities can only agree to the plan or project after having ascertained that it will not adversely affect the integrity of the site concerned. In exceptional circumstances, a plan or project may still be allowed to go ahead, in spite of a negative assessment, provided there are no alternative solutions and the plan or project is considered to be of overriding public interest. The European Commission in May 2013 adopted a Green Infrastructure Strategy, 'to promote the deployment of green infrastructure in the EU in urban and rural areas'. This is a key step in implementing the EU 2020 Biodiversity Strategy and specifically Target 2 that requires that 'by 2020, ecosystems and their services are maintained and enhanced by establishing green infrastructure and restoring at least 15% of degraded ecosystems'. Green Infrastructure (GI) is contributing to all other targets of the EU Biodiversity strategy – in particular the full implementation of the Birds and Habitats Directive (target 1) – and to maintain and enhance biodiversity in the wider countryside and the marine environment (targets 3 and 4).
Population and Human Healt	l h
The Stockholm Convention	The Stockholm Convention on Persistent Organic Pollutants is a global treaty to protect human health and the environment from chemicals that remain intact in the environment for long periods, become widely distributed geographically, accumulate in the fatty tissue of humans and wildlife, and have adverse effects to human health or to the environment.
Several environmental paran	neters interact and impact on human health including water quality, infrastructure, air quality, soil, cultural heritage and landscape; the plans,
policies and programmes ass	ociated with these are presented under thematic headings as appropriate.
Geology and Soil	
EU Soil Thematic Strategy	In September 2006, the European Commission published the final Thematic Strategy for Soil Protection (COM(2006)231 final) and a proposal for a Directive establishing a framework for the protection of soil across the EU (COM(2006)232). The objective of the strategy is to protect and ensure the sustainable use of soil, based on the guiding principles of preserving soil functions, preventing further degradation and restoring degraded soils to a level of functionality consistent with current and intended use. Once adopted the European Soil Thematic Strategy will guide and frame Ireland's approach to developing its own soil protection strategy.

Title	Summary
Water Resources	
Water Framework	The Water Framework Directive (WFD) was adopted in 2000 in an effort to establish a framework for the protection of waterbodies within
Directive (2000/60/EC) as	the EU including:
amended	inland surface waters; groundwater; transitional waters; and coastal waters.
	The key aims of the WFD are:
	expanding the scope of water protection to all waters, surface waters and
	groundwater;
	achieving "good status" for all waters by a set deadline
	water management based on river basins;
	"combined approach" of emission limit values and quality standards.
	getting the prices right;
	getting the citizen involved more closely, and
	streamlining legislation.
	Its ultimate objective is to achieve "good ecological and chemical status" for all Community waters by 2015.
Floods Directive	The Directive aims to establish a common framework for assessing and reducing the risk that floods within the European Union pose to
(2007/60/EC)	human health, the environment, property and economic activity.
The Drinking Water	This Directive is intended to protect human health by laying down healthiness and purity requirements which must be met by drinking water
Directive (DWD),	within the Community.
(98/83/EC) 1998	
Groundwater Directive,	This directive establishes a regime which sets underground water quality standards and introduces measures to prevent or limit inputs of
(2006/118/EC) 2006	pollutants into groundwater.
EC Bathing Water Quality	This Directive strengthens the rules guaranteeing bathing water quality It supplements Directive 2000/60/EC on water protection and
Directive, (2006/7/EC) 2006	management. Each year, the Member States are required to identify the bathing waters in their territory and define the length of the
	bathing season. They shall establish monitoring at the location most used by bathers or where the risk of pollution is greatest.
Climate and Air Quality	
Paris (Climate Change)	The Paris Agreement is an agreement within the United Nations Framework Convention on Climate Change (UNFCCC), dealing with
Agreement	greenhouse-gas-emissions mitigation, adaptation, and finance, starting in the year 2020. There are 197 parties signed to the agreement, The
	main aim is to reduce the impacts of climate change through setting emission reduction Plans & guidelines.

Title	Summary
Kyoto Protocol	The Protocol was initially adopted on 11 December 1997 in Kyoto, Japan, and entered into force on 16 February 2005. To date 191 states
	have signed and ratified the protocol. Following the Conference of Parties to the Climate Change Convention (COP) meeting in Copenhagen
	2009, the EU revised its commitment to reducing greenhouse gases by increasing the target to 20% reduction on 1990 levels by 2020.
The Ambient Air Quality	The EU objective in relation to air quality is 'to achieve levels of air quality that do not result in unacceptable impacts on, and risks to, human
and Cleaner Air for Europe	health and the environment'.
(CAFE) Directive	
Material Assets	
EU Directive on Waste,	This Directive requires EU States to publish waste management plans. It requires a system of permits and registrations to be put in place to
(2006/12/EC), 2006	authorise all waste management infrastructure, as well as setting down the basic requirements that need to be satisfied for these statutory authorisations to be issued.
EU Directive on Waste	This Directive establishes a legal framework for the treatment of waste within the Community. It aims at protecting the environment and
(2008/98/EC), 2008	human health through the prevention of the harmful effects of waste generation and waste management.
(2000) 00) 20)	The Directive requires Member States to take measures for the treatment of their waste in line with the following hierarchy which is listed in
	order of priority: prevention; preparing for reuse; recycling; other recovery, notably energy recovery; disposal.
EU Urban Waste Water	The aim of the Urban Waste Water Directive is to protect inland surface waters from the adverse effects of discharges of urban wastewater
Treatment Directive	and discharge of certain biodegradable industrial waste water (particularly from the agro-food industry).
(91/271/EEC), 1991	
Directive 2009/28/EC on	Directive 2009/28/EC on the promotion of the use of energy from renewable sources establishes the basis for the achievement of the EU's
the promotion of the use of	20% renewable energy target by 2020. Under the terms of the Directive, each Member State is set an individually binding renewable energy
energy from renewable	target, which will contribute to the achievement of the overall EU goal. Each Member State is required to adopt a national renewable energy
sources	action plan.
Cultural Heritage Archaeology	y and Built Heritage
The World Heritage	The World Heritage Convention was adopted by the United Nations Educational, Scientific and Cultural Organisation (UNESCO) in November
Convention	1972. The World Heritage Convention aims to promote cooperation among nations to protect heritage around the world that is of such
	outstanding universal value that its conservation is important for current and future generations
	The following sites are on the tentative list for World Heritage Site Designation in the county: Inis Cealtra and the Burren.

Title	Summary
European Convention on	This Convention was ratified by Ireland in 1997 and as such the Planning Authority is legally bound by it. The aim of the Convention is to
the Protection of the	'protect the archaeological heritage as a source of the European collective memory and as an instrument for historical and scientific study'. It
Archaeological Heritage,	requires that appropriate consideration be given to archaeological issues at all stages of the planning and development process.
1992 (The Valletta	
Convention)	
Convention for the	Ratified by Ireland in 1997, the 1985 Convention for the Protection of the Architectural Heritage of Europe is intended to reinforce and
Protection of the	promote policies for the conservation and enhancement of Europe's heritage. The Convention is dual purpose, involving the promotion of
Architectural Heritage of	architectural heritage policies while fostering European-wide co-operation measures. Covering monuments, groups of buildings and sites of
Europe, 1985 (Granada	importance, the Convention requires a national inventory of architectural heritage to be developed. Legal protection measures must be
Convention)	established, with a system of formal authorisation required for works affecting protected sites and structures. Architectural heritage
	conservation considerations are required to feature in the Convention signatories' town and Regional planning processes.
Landscape	
The European Landscape	The 2000 European Landscape Convention, adopted in Florence (and was ratified by Ireland in 2002), requires a commitment to introduce
Convention 2000	policies on landscape protection and management. It promotes the protection, management and planning of EU landscapes as a response to
	European-wide concerns that the quality and diversity of landscapes were deteriorating. The underlying purpose of the Convention is to
	encourage public authorities to adopt policies and measures at local, Regional, National and International level to protect and manage
	landscapes throughout Europe.
Other relevant conventions,	plans, policies and programmes
The Aarhus Convention	The Aarhus Convention establishes a number of rights of the public (individuals and their associations) with regard to the environment. The
	Parties to the Convention are required to make the necessary provisions so that public authorities (at national, regional or local level) will
	contribute to these rights to become effective.
Environmental Liability	The overall objective of the Directive and the Regulations is to prevent and remedy environmental damage by
Directive 2004/35/EC	holding operators whose activities have caused environmental damage financially liable for remedying the damage.
	The Environmental Liability Regulations 2008 define environmental damage under three categories:
	Damage to natural habitats and protected species - any damage that has significant adverse effects on reaching or
	maintaining the favourable conservation status of European designated habitats or species (i.e. those covered by the
	Habitats Directive (92/43/EEC) and Birds Directive (79/409/EEC)). Water damage - damage which significantly
	adversely affects the ecological, chemical and/or quantitative status and/or ecological potential of waters covered in
	the Water Framework Directive (2000/60/EC). Land damage - any contamination that creates a significant risk of

Title	Summary
	human health being adversely affected as a result of the direct or indirect introduction in or under the land of
	substances, preparations, organisms or micro-organisms.

NATIONAL LEVEL

Title	Summary
Susta	ainable Development
Our Sustainable Future A	Our Sustainable Future timeframe is to 2020 to tie in with other national and international frameworks, but a longer-term horizon to 2050 is
framework for sustainable	also taken where appropriate, to provide a framework for guiding and reporting on long-term broad development trends such as on climate
development in Ireland	change.
Water Framework Directive	On April 17th 2018 the Government published the River Basin Management Plan for Ireland 2018-2021. The Plan sets out the actions that
River basin management	Ireland will take to improve water quality and achieve 'good' ecological status in water bodies (rivers, lakes, estuaries and coastal waters) by
plans 2018	2027.
National Mitigation plan	The National Mitigation Plan contains a series of mitigation measures and actions to address the immediate challenge of climate change to
	2020 and to prepare for the EU targets that Ireland will take on for 2030. It will also begin the development of work to meet the objectives of
	the National Policy Position for 2050. The National Mitigation Plan covers greenhouse gas emissions in the Electricity Generation, Built
	Environment, Transport, and Agriculture, Forest and Land Use sectors, Environmental analysis was undertaken as part of the development of
	the Plan with appropriate assessment and environmental assessment taking place.
Sectoral Climate Adaptation	Sectoral Planning Guidelines for Climate Change Adaptation have been developed for, and are primarily intended for the use of, the sectors
Plans 2018	required to prepare statutory sectoral adaptation plans under the Framework(NAF). The guidelines aim to ensure that a coherent and
	consistent approach to adaptation planning is adopted by the key sectors in Ireland. With each specific region having a plan tailored to their
	specifics
Local Authority Adaptation	The guidelines are based on a staged and proportionate approach to adaptation planning
strategy development	and are structured around a 6-step planning cycle, these are:
Guidelines, EPA 2016	1) Preparing the Ground;
	2) Climate Impact Screening;
	3) Prioritisation;
	Executive Summary - Sectoral Planning Guidelines for Climate Change Adaptation iii
	4) Priority Impact Assessment;

Title	Summary
	5) Develop your Plan;
	6) Implement, Evaluate and Review
The National Planning	Is a national document that will guide at a high-level strategic planning and development for the country over the next 20+ years, so that as
Framework 2040	the population grows, that growth is sustainable (in economic, social and environmental terms).
	Finalisation of the NPF alongside the ten-year National Development Plan will put together one plan to guide strategic development and
	infrastructure investment at national level.
	The NPF with the National Development Plan will also set the context for each of Ireland's three regional assemblies to develop their
	Regional Spatial and Economic Strategies taking account of and co-ordinating local authority County and City Development Plans in a manner
	that will ensure national, regional and local plans align.
Biodiversity, Flora and Fauna	
Actions for Biodiversity 2017	The National Biodiversity Plan is intended to play a central part in Ireland's efforts to halt biodiversity loss and was developed as in line with
- 2021, Ireland's 3rd	the EU and International Biodiversity strategies and policies. It sets out the strategic objectives of the government in relation to biodiversity
National Biodiversity Plan	They include:
	1. mainstreaming biodiversity across the decision making process in the State;
	2. strengthening the knowledge base underpinning work on biodiversity issues;
	3. increasing public awareness and participation;
	4. ensuring conservation of biodiversity in the wider countryside;
	5. ensuring conservation of biodiversity in the marine environment;
	6. expanding and improving on the management of protected areas and protected species;
	7. enhancing the contribution to international biodiversity issues.
Wildlife (Amendment) Act	The Wildlife Act is Ireland's primary national legislation for the protection of wildlife. It covers a broad range of issues, from the designation of
2000	nature reserves, the protection of species, regulation of hunting and controls in wildlife trading. It is implemented by a series of regulations.
2000	The Act provides strict protection for nearly all birds, 22 other animal species, and 86 plant species. These species are protected from injury, or
	from disturbance / damage to their breeding or resting place wherever these occur. The 2000 Act was amended in 2010.
National Heritage Plan	The Department of Arts Heritage Gaeltacht and the Islands published the National Heritage Plan in April 2002. The plan sets out a vision for the
(2002)	management of the heritage of Ireland. A key element of the process of formulating the National Heritage Plan is the requirement to prepare
(2002)	Local Heritage Plans at County and City level.
	Local Heritage Fiants at County and City level.

Title	Summary
All Ireland Pollinator Plan	The All-Ireland Pollinator Plan: A shared plan of action has been developed by a fifteen member steering group and identifies 81 actions across
2015-2020	five objectives. Sixty-eight partner organisations from both public, private and NGO sectors have supported the Plan, with responsibility for
	delivering the 81 actions shared out between these organisations. It is a voluntary Plan.
	The Pollinator Plan has 5 key objectives:
	1. Making Ireland pollinator friendly (farmland, public land & private land)
	2. Raising awareness of pollinators and how to protect them
	3. Managed pollinators – supporting beekeepers and growers
	4. Expanding our knowledge on pollinators and pollination service
	5. Collecting evidence to track change and measure success
European Union (Invasive	The European Union (Invasive Alien Species) (Freshwater Crayfish) Regulations 2018 (SI 354/18) came into force on 18 September 2018. The
alien species) (Freshwater	new measures are designed to combat the threat of disease spread from several species of non-native crayfish. The new regulations will give
Crayfish) regulations 2018	Irish authorities the powers to prevent the arrival and spread of the five non-native species of crayfish included on the EU list of invasive alien
	species.
Irish waters Capital	This is a plan by Irish water to develop and implement investment in improvements in drinking water quality, leakage, water availability,
Investment programme	wastewater compliance, efficiencies and customer service across 380 projects around Ireland. The main objectives are
	1. Eliminating Boil Water Notices in Roscommon
	2. Providing more water and in particular reducing disruption to supply in the Dublin area
	3. Improving Water Quality
	4. Investing for economic development
	5. Tackling leakage
	6. Increasing wastewater treatment capacity and improving environmental compliance
	7. Better Control and Monitoring
	8. Improving existing plants
Irish waters Capital	The capital investment programme outlines the number of projects being invested in across the country by Irish water. An application to
Investment programme	upgrade the Ringsend WWTP has been commissioned the application seeks permission for works required to facilitate the use of Aerobic
2017-2021 including	Granular Sludge (AGS) technology, to omit the previously permitted long sea outfall tunnel and to upgrade the sludge treatment facilities at
forthcoming planning	Ringsend, Dublin 4, and to provide for a Regional Biosolids Storage Facility in Newtown, Dublin 11. Environmental impact assessment and
application for ring send	appropriate assessment were both carried out on this project.
WWTP upgrade	

Title	Summary
Waterways Ireland Heritage	The Waterways Ireland Heritage Plan provides, a strategic framework for the integration of built, natural and cultural heritage into the future
Plan 2014-2020	management of the waterways of Ireland.
Population and Human Health	
Guidelines for Planning	The aim of these guidelines is to set out the key planning principles which should be reflected in development plans and local area plans, and
Authorities on Sustainable	which should guide the preparation and assessment of planning applications for residential development in urban areas.
Residential Development in	
Urban Areas (Cities, Towns &	
Villages)(2009)	

Geology and Soil	
Geological Heritage Sites	The Wildlife (Amendment) Act 2000 provides for designation of Natural Heritage Areas (NHAs) which will include geological sites. Until
Designation (under the	actually designated, there is no real protection for any important sites identified by GSI and recommended for NHA status. However, a
Wildlife Amendment Act	number of geological features are protected because they are the underlying reason for a biological or ecological site protected as a National
2000)	Nature Reserve, National Park or as a Special Area of Conservation (SAC). In addition many local authorities have scheduled County
	Geological Sites within their County Development Plans.
Water Resources	
National River Basin District	The National River Basin District Management Plan is now published (2018). The second cycle River Basin Management Plan aims to build on
Management Plan 2018	the progress made during the first cycle with a greater emphasis on ensuring the evidence base is available and the administration supports
	are fully in place to support key measures. The approach to the plan development involves characterisation of Ireland's water bodies in order
	to develop a tailored programme of measures to allow for the protection of good status or the restoration of good status for all water bodies.
	The outcomes are then monitored in order to feed into further characterisation and measures setting as the cycle moves forward. The plan
	was subject to SEA and Appropriate Asssesment.
Water Services Act (2007)	The Act sets down a comprehensive modern legislative code governing functions, standards, obligations and practice in relation to the
	planning, management, and delivery of water supply and waste water collection and treatment services. The Act focuses on management of
	water "in the pipe", as distinct from broader water resources issues such as river water quality, etc.
Water Services	The 2012 Act amends the 2007 Water Services Act in order to comply with a European Court of Justice ruling against Ireland in October 2009.
(Amendment) Act (2012)	The Court found that Ireland had failed to fulfil its obligations under the Waste Directive (75/442/EEC) regarding domestic waste waters

	disposed of through septic tanks and other individual waste water treatment systems. The new Part 4A requires each water services
	authority to establish and maintain a register of domestic waste water treatment systems situated within their functional area.
Irish Water Services Strategic	The 25 year plan for strategic delivery of water services is currently being prepared and the SEA Scoping report was issued for consultation
Plan SEA and AA	with a deadline in September 2014.
The Planning System and	In relation to planning at the County level the guidelines require planning authorities to:
Flood Risk Management	• introduce flood risk assessment as an integral and leading element of their development planning functions at the earliest practicable
Guidelines (and Technical	opportunity.
Appendices) for Planning	Align strategic flood risk assessment (SFRA) with the SEA process.
Authorities (DoEHLG, OPW),	 Establish flood risk assessment requirements as part of the preparation of the County Development Plan.
2009	 Assess planning applications against the guidance set out in the Guidelines.
	• Ensure development is not permitted in areas of flood risk except where there are no suitable alternative sites.
Climate and Air Quality	
National Adaptation	Ireland's first statutory National Adaptation Framework (NAF) was published in 2018. The NAF sets out the national strategy to reduce the
Framework 2018	vulnerability of the country to the negative effects of climate change and to avail of positive impacts. The NAF was developed under the
	Climate Action and Low Carbon Development Act 2015.
	The NAF builds on the work already carried out under the National Climate Change Adaptation Framework (NCCAF, 2012). The NAF outlines a
	whole of government and society approach to climate adaptation in Ireland. Under the NAF a number of Government Departments will be
	required to prepare sectoral adaptation plans in relation to a priority area that they are responsible for. Work on these plans will begin in
	2018. Local authorities are required to prepare local adaptation strategies The NAF will be reviewed at least once every five years. The NAF
	also aims to improve the enabling environment for adaptation through ongoing engagement with civil society, the private sector and the
	research community.
National Climate Change	The National Climate Change Strategy 2007 - 2012 sets out a range of measures, building on those already in place under the first National
Strategy (2007-2012)	Climate Change Strategy (2000) to ensure Ireland reaches its target under the Kyoto Protocol. The Strategy provides a framework for action
	to reduce Ireland's greenhouse gas emissions
Review of Ireland's climate	The National Economic and Social Council submitted a review of Ireland's climate change policy to the Minister of Environment in late 2012.
change policy and Climate	The review includes the development of potential policies and measures to reduce greenhouse gas emissions in agriculture, transport, heat in
	buildings and renewable energy supply and a basis for a national transition to a low-carbon future by 2050.

Action and Low Carbon Bill								
2013								
Material Assets								
Smarter Travel, A	Smarter Travel is the transport policy for Ireland that sets out how the vision of a sustainable travel and transport system can be achieved.							
Sustainable Transport								
Future, A New Transport								
Policy for Ireland 2009-2020								
Design Manual for Urban	Design Manual for Urban Roads and Streets incorporates good planning and design practice to support and encourage more sustainable travel							
Roads and Streets 2013	patterns in urban areas.							
Electric Vehicle Grant	The electric Vehicle grant scheme is a government initiative to promote electric car use throughout the country. The scheme provides grants of							
scheme and VRT relief	up to 5,000 euro that are incentivised to promote electric and hybrid car use and thus reduce carbon emissions and is carried out through the							
	SEAI . VRT or vehicle registration tax is a measure introduced to tax accordingly in relation to emissions produced by vehicle.							
Spatial Planning and	These guidelines set out planning policy considerations relating to development affecting national primary and secondary roads, including							
National Roads Guidelines	motorways and associated junctions, outside the 50-60 kmh speed limit zones for cities, towns and villages.							
2012								
National Transport Strategy	The Transport Strategy for the Greater Dublin Area, 2016-2035 has been prepared and published by the National Transport Authority in							
for Greater Dublin Area	accordance with Section 12 of the Dublin Transport Authority Act, 2008. It sets out how transport will be developed across the region,							
2016-2023	covering Dublin, Meath, Wicklow and Kildare, over the period of the strategy and has been approved by the Minister for Transport, Tourism							
	and Sport in accordance with the relevant legislation							
Cultural Heritage Archaeology	and Built Heritage							
National Monuments Act	This is the primary legal protection to archaeology in Ireland and has been amended a number of times, most recently 2004.							
1930 with subsequent								
amendments								
Architectural Heritage	The 2004 guidelines were reissued in 2011 following the transfer of architectural heritage protection functions to the Department of Arts,							
Protection - Guidelines for	Heritage and the Gaeltacht. Part IV of the Planning and Development Acts 2000 – 2011 sets out the legislative provisions for the protection and							
Planning Authorities (2011)	conservation of our architectural heritage							
National Inventory of	The National Inventory of Architectural Heritage (NIAH) is a state initiative under the administration of the Department of Arts, Heritage and							
Architectural Heritage (NIAH)	the Gaeltacht. The purpose of the NIAH is to identify, record, and evaluate the post-1700 architectural heritage of Ireland, uniformly and							

	consistently as an aid in the protection and conservation of the built heritage. NIAH surveys provide the basis for the recommendations of the
	Minister to the planning authorities for the inclusion of particular structures in their Record of Protected Structures (RPS).
Planning policy statement	This document sets out the outline for the future of planning in Ireland and the objectives and guidelines for the continued development of
2015	Irish planning. It is a non-statutory statement that's main objectives are to set out:
	(1) Key principles that it expects planning authorities, other public bodies and those that engage with
	the planning process will observe; and
	(2) High level priorities for the continued enhancement of the planning system in Ireland.
Green Low Carbon	The Green, Low-Carbon Agri-Environment Scheme is part of the Rural Development Programme 2014-2020. It provides funding to farmers in
Agriculture Environment	return for delivering environmental management on their land. Farmers must commit to the scheme for a minimum period of 5 years. GLAS
scheme (GLAS)	has a number of interlinked aims, which include:
	Protecting agricultural land, its habitats and biodiversity
	Promoting environmentally sustainable methods of farming
	Addressing issues of climate change mitigation, water quality and the preservation of habitats and species
	Maintaining features such as traditional drystone walls and hedgerow
	The overall target for GLAS is to attract 50,000 farmers into the new scheme over its lifetime
Landscape	
A National Landscape	The Department of Arts, Heritage and the Gaeltacht has issued A National Landscape Strategy for Ireland which sets out objectives and
Strategy for Ireland –2015	principles in the context of a proposed National Landscape Strategy for Ireland.
Draft Landscape and	These Guidelines attempt to approach landscape appraisal in a systematic manner and recommend Landscape Character Assessment (LCA) as
Landscape Assessment	the method for assessment. LCA involves the characterisation of landscape based primarily on landcover (trees, vegetation, water etc.) and
Guidelines, (2000)	secondly on the value (i.e. historical, cultural, etc.). LCA is intended to aid the development management process as it gives indicators of
	development types which would be suited to certain locations using certain design criteria and consequently the character of the landscape
	remains intact.
National Cycle Policy	The Government's 2009-2020 National Cycle Policy Framework It outlined 19 high level objectives and detailed the 109 individual but
Framework 2009-2020	integrated actions, aimed at ensuring that a strong cycling culture is developed in Ireland so that by 2020 10% of all journeys will be by bike,
National Transport authority	The National transport Authority NTA published this guide in 2015. The document outlines how Dublin can improve and implement better
Permeability best practice	walking and cycling throughout the city. Permeability, for the purpose of this guidance, describes the extent to which an urban area permits
guide	the movement of people by walking or s such, the Authority, in collaboration with South Dublin County Council and AECOM, has developed this
	policy guidance on how best to facilitate demand for walking and cycling in existing built-up areas.

Public Transport Act 2016	An Act to amend and extend the Dublin Transport Authority Act 2008, the Taxi Regulation Act 2013 and the Railway Safety Act 2005, section
	66 of the Transport (Railway Infrastructure) Act 2001, to amend sections 27 and 27A of the State Airports Act 2004 and section 106 of the
	Road Traffic Act 1961, to give the force of law to the Protocol of 3 June 1999 for the Modification of the Convention concerning International
	Carriage by Rail (COTIF) of 9 May 1980 (Protocol 1999) and to change the name of the Railway Safety Commission.

Planning and Development Act 2000 (as amended).

This Act consolidated all planning legislation from 1963 to 1999 and remains the basis for the Irish planning code, setting out the detail of regional planning guidelines, development plans and local area plans as well as the basic framework of the development management and consent system. Among other things, it provides the statutory basis for protecting our natural and architectural heritage, the carrying out of Environmental Impact Statements and the provision of social and affordable housing.

There have been a number of changes to the legislation since 2000, the most significant of which are set out in The Planning and Development (Amendment) Act 2002 and the Housing (Miscellaneous Provisions) Act 2004, which made substantial changes to Part V of the Act.

In addition, a suite of new planning policies are being prepared most notably the National Planning Framework due to be finalised first quarter of 2017 which will replace the National Spatial Strategy. Prior to this a non-statutory Planning Policy Statement was issued in 2015 establishing then key principles including the following:

- No. 8. Planning will conserve and enhance the rich qualities of natural and cultural heritage of Ireland
 - No. 9. Planning will support the protection and enhancement of environmental quality.

COUNTY LEVEL

Title	Summary
Regional Planning	The aim of the Regional Planning Guidelines (RPGs) is to provide a framework for long term strategic development of the Greater Dublin Region
Guidelines 2010-2020-	for the period 2010 – 2022 which is consistent with the National Spatial Strategy (NSS) 2002 – 2020 and which ensures the successful
to be replaced by	implementation of the NSS at regional, county and local level.
Regional Economic and	A key aspect of the RPGs is integrating sustainable economic development with the protection and enhancement of the environment. The RPGs
Spatial Strategies	are influenced by a wide range of international, national and regional level plans, programmes and legislation and also establish a framework for other lower level plans and programmes.
Dublin City	The Development Plan is a plan for Dublin City and as such the assessment has been limited geographically to activities occurring within the
Development Plan 2016-	functional area of the Development Plan. The Development Plan will cover the period from 2016 up to 2022
2022	It was subject to SEA and AA.
Dublin Bay Biosphere Biodiversity Conservation and	This document sets out the planned biodiversity conservation and related research actions of DBBP from 2016-2020. It aims, firstly, to provide a coordinated framework for biodiversity conservation and research activities to be undertaken by DBBP and, secondly, to provide clarity regarding these planned activities to all stakeholders within DBB. It builds on the themes and objectives set out in the Periodic Review of North Bull Island UNESCO Biosphere (DCC, 2014), which set out the following vision statement: "Our vision is to celebrate and promote a wider appreciation of the

Research Strategy 2016- 2020	natural and cultural heritage of Dublin Bay, to capture the inherent passion of the community for the Biosphere concept and for the Dublin Bay Biosphere to be an exemplar for a new wave of Biospheres in the world network."
Eastern & Midland assembly regional spatial and economic strategy 2018	The Draft RSES is a strategic plan which identifies regional assets, opportunities and pressures and provides appropriate policy responses in the form of Regional Policy Objectives. At this strategic level it provides a framework for investment to better manage spatial planning and economic development throughout the Region. The Draft RSES provides a:
	 Spatial Strategy – to manage future growth and ensure the creation of healthy and attractive places to live, work, study, visit and invest in. Economic Strategy – that builds on our strengths to sustain a strong economy and support the creation of quality jobs that ensure a good living standard for all. Metropolitan Plan – to ensure a supply of strategic development areas for the sustainable growth and continued success and competitiveness of the Dublin metropolitan area. Investment Framework – to prioritise the delivery of key enabling infrastructure and services by government and state agencies. Climate Action Strategy – to accelerate climate action, ensure a clean and healthy environment and to promote sustainable transport
Eastern-Midlands regional waste management plan 2015	and strategic green infrastructure. The Eastern-Midlands Region (EMR) Waste Management Plan 2015-2021 provides a framework for the prevention and management of waste in a sustainable manner in 12 local authority areas. The Eastern-Midlands Region comprises Dublin City Council, Dún Laoghaire-Rathdown, Fingal, South Dublin, Kildare, Louth, Laois, Longford, Meath, Offaly, Westmeath and Wicklow County Councils. The three key objectives of the Eastern-Midlands Region Waste Management Plan are: • Prevent waste: a reduction of one per cent per annum in the amount of household waste generated over the period of the plan.
	 More recycling: increase the recycle rate of domestic and commercial waste from 40 to 50 per cent by 2020. Further reduce landfill: eliminate all unprocessed waste going to landfill from 2016.
Greater Dublin area Transport strategy 2016- 2035	The Transport Strategy for the Greater Dublin Area, 2016-2035 has been prepared and published by the National Transport Authority in accordance with Section 12 of the Dublin Transport Authority Act, 2008. It sets out how transport will be developed across the region, covering Dublin, Meath, Wicklow and Kildare, over the period of the strategy and has been approved by the Minister for Transport, Tourism and Sport in accordance with the relevant legislation. Environmental assessment was carried out for this plan This transport strategy (Strategy) provides a

	framework for the planning and delivery of transport infrastructure and services in the Greater Dublin Area (GDA) over the next two decades. It also provides a transport planning policy around which other agencies involved in land use planning, environmental protection, and delivery of other infrastructure such as housing, water and power, can align their investment priorities.
Eastern Catchment Based Flood risk Management (CFRAM) study 2011-2016	The Eastern CFRAM study has been commissioned in order to meet the requirements of the Floods Directive, as well as to deliver on core components of the 2004 National Flood Policy, in the Eastern district. The main aims of the Eastern CFRAM Study are to • assess flood risk, through the identification of flood hazard areas and the associated impacts of flooding; • identify viable structural and non-structural measures and options for managing the flood risks for localised high-risk areas and within the catchment as a whole; • prepare a strategic Flood Risk Management Plan (FRMP) and associated Strategic Environmental Assessment (SEA) that sets out the measures and policies that should be pursued to achieve the most cost effective and sustainable management of flood risk; • ensure that full and thorough public and stakeholder consultation and engagement is achieved
Greater Dublin Strategic Drainage study	The Greater Dublin Strategic Drainage Study was commissioned in 2001 to carry out a strategic analysis of the existing foul and surface water systems in the local authority areas of Dublin City, Fingal, South Dublin, Dun Laoghaire Rathdown and the greater Dublin area. The study examined the new infrastructural requirements to 2031 in three-time frames: • The existing situation: - This examined drainage requirements for all development to year 2002, this year being the study baseline. • The short term situation: - This examined drainage requirements for all anticipated developments due for completion to year 2011 • The long term situation: - This identified the broad drainage requirements to cater for anticipated and/or assumed development in the Greater Dublin Region to year 2031.

2019

ANNEX C SEA Screening of Chief Executive's Recommendations

Dublin City Council

STRATEGIC ENVIRONMENTAL ASSESSMENT ENVIRONMENTAL REPORT- DUBLIN CITY COUNCIL CLIMATE CHANGE ACTION PLAN 2019-2024

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1.1 Introduction

For the first time, Dublin's four local authorities have joined together to develop Climate Change Action Plans as a collaborative response to the impact that climate change is having, and will continue to have, on the Dublin Region and its citizens. While each plan is unique to its functional area, they are unified in their approach to climate change adaptation and mitigation, and their commitment to lead by example in tackling this global issue.

These CCAPs follow on from the publication of A Strategy for Climate Change Action Plans for the Dublin Local Authorities (DLAs), which was published in January 2017. The strategy used a structured approach that focused on seven key areas (Citizen Engagement, Planning, Energy, Transport, Water, Waste, and Ecosystems & Biodiversity), and set out how the DLAs would develop the four climate change action plans. The action plans will be unique to each local authority area but synchronised in their methodology.

The actions in the CCAP are presented around a number of themes as follows:

- Energy and Buildings
- Transport
- Flood Resilience
- Nature Based Solutions
- Resource Management.

Collectively, these collectively address the four targets of this plan, which are:

- A 33% improvement in the Council's energy efficiency by 2020
- A 40% reduction in the Council's greenhouse gas emissions by 2030
- To make Dublin a climate resilient region, by reducing the impacts of future climate change -related events
- To actively engage and inform citizens on climate change.

As such, the CCAP encompasses the functional and administrative area of Dublin Cityy.

1.2 Public Consultation

Public consultation on the Draft Climate Change Action Plan took place over a six-week period from Monday 11th February to Monday 25th March 2019, with 234 valid submissions received in total.

In addition, and in accordance with the Planning and Development (Strategic Environmental Assessment) Regulations 2004 to 2011, as amended, and Habitats Directive 92/43/EEC, a Strategic Environmental Assessment (SEA) Environmental Report and an Appropriate Assessment Natura Impact Statement, were also on public display.

Details of the Public Consultation Process

The objectives of the Draft Climate Change Action Plan public consultation process were as follows:

- Increase awareness of the Draft Climate Change Action Plan for the general public, various stakeholders, prescribed bodies, and Council staff;
- Provide opportunities for more creative and dynamic engagement with a variety of interested parties, including younger citizens, older citizens and locally based community and resident's groups;
- Increase the number, variety and quality of submissions received, appropriate to the Draft Climate Change Action Plan;
- Encourage longer term engagement strategies beyond the Draft Climate Change Action Plan stage and scope follow up activities; and
 - To align with the Council's internal and external communication objectives.

The Council has used a variety of online and supporting 'face to face' methods, to consult and engage with the citizens of Dublin City Council area and a range of other stakeholders and interested parties.

- A Newspaper Notice appeared in the Irish Independent on Monday 11th February 2019 and in the Dublin Gazette on Thursday 14th February 2019. A copy of the Newspaper Notice is contained in Appendix X.
- A public consultation video was prepared on behalf of the four Dublin local authorities publicising climate actions and the public consultation process. The video was

embedded on the dublinclimatechange.ie website and 30-second clips were used to promote the video on social media, with over 6,600 combined views alone on the Dublin CARO and Codema twitter accounts.

- 4,000 individual users accessed <u>www.dublinclimatechange.ie</u> since it was launched until the public consultation period ended (11th Feb 25th Mar 2019).
- Codema developed a generic information leaflet (2,000 copies printed) and event programmes (500 copies printed each) for the #Councils4ClimateAction events. This material helped to provide information on the Plans and to promote what was taking place

at each of the events. These leaflets were widely available online to help spread the word and cut down on the need for printed copies.

- The #Councils4ClimateAction social media campaign was particularly effective throughout the public consultation. process and for promoting the Councils' events.
- Codema acted as the central liaison point between all four Councils' Communications Teams and together a central message was formed around the plans and the 'make a submission' call to action.
 - Press releases were issued by the four DLAs and Codema in the run up to the public consultation period opening and the public events, resulting in widespread national and local media coverage such as the Irish Times, RTE Television Six-One and Nine O'Clock News Bulletins, Virgin Media One News Bulletins, RTE Radio 1 and Newstalk 106-108fm.

A total of 234 valid submissions were received.

1.3 CHIEF EXECUTIVE'S REPORT

A Chief Executive's (CE) Report has been prepared which summarises, details the outcome of the public consultation programme on the Draft Climate Change Action Plan, and contains the following:

All submissions were read, analysed and summarised. A list of the persons, organisations and bodies that made submissions is provided in Appendix A of the CE Report. The categorisations and summary of issues raised, together with the Chief Executive's response and recommendations is contained in Section 0.5 onwards. **NB:** The headings relating to the categorisation and summary of issues raised, together with the Chief Executive's response and recommendations, follows that of the headings of the Draft Climate Change Action Plan document i.e. Section 0.5.1 Executive Summary, Section 0.5.2 Introduction, and so forth.

1.4 PURPOSE OF THIS SEA SCREENING REPORT

The purpose of this SEA Screening report and accompanying Determination is to evaluate the requirement for SEA to be undertaken on the Recommendations by the Chief Executive.

This Determination should be read in conjunction with the Chief Executive report and all other associated documents including the:

- CE report;
- SEA Environmental Report for the draft Dublin City CCAP;

- Appropriate Assessment (AA) Screening Report and Natura Impact Statement for the draft Dublin City CCAP.
- AA Screening Report for the Chief Executive's Recommendations.

In deciding whether CE recommendations are likely to have significant environmental effects, regard must be had to the criteria set out in Annex II of the SEA Directive. The approach to this screening assessment is to assess each material alteration for potential environmental effects.

As the draft CCAP was subject to full SEA and is accompanied by an Environmental Report, the assessment will be undertaken within the context of the ER and in particular against the Strategic Environmental Objectives of the SEA ER.

Section Two of this report assesses the CE recommendations for identified Actions of the CCAP against the criteria contained in Schedule 1 of the Planning and Development (Strategic Environmental Assessment) Regulations SI 435 of 2004.

2 Assessment of CE Recommendations for Actions in the Dublin City CCAP

2.1 Introduction

The section examines whether each CE recommendation relating to an action would be likely to have significant environmental effects and would thereby trigger the need for SEA on same. In undertaking this SEA Screening, the relevant criteria set out in Schedule 2a of the SEA Regulations forms the basis of this assessment.

The focus of this SEA Screening is only on the CE Actions as other changes to the CCAP arising from the consultation period relate to additional text, context, consistency with other adaptation plans and do not significantly change the nature and character of the CCAP.

This section therefore assesses each of the CE Recommendations on Actions on an individual basis and then provides for an assessment of incombination effects.

Submissions received by statutory bodies on the SEA ER are presented in Annex 1 and will be used to update the SEA ER.

Where additional text is proposed as part of the CE recommendation it is shown in green font. Where text is deleted this is shown in strikethrough.

Table 1 below shows the Strategic Environmental Objectives used in the Dublin City SEA Environmental Report. These are used in Section Three Assessment of CF Recommended Actions.

TABLE 15 STRATEGIC ENVIRONMENTAL OBJECTIVES

SEA Topic	Environmental Protection Objective
Biodiversity Flora and Fauna	To protect and where appropriate enhance the diversity of habitats, species, ecosystems and geological features.
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.



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.

Air Quality and Climate

Minimise emissions of pollutants to air associated with development activities and maintain acoustic quality.



Contribute to the mitigation of/and adaptation to climate change and implement requirements of Strategic Flood Risk assessment

Soil and Geology



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.



To protect and where appropriate enhance the character, diversity and qualities of Dublin city's cultural, including architectural and archaeological, heritage.

Landscape

To protect and where appropriate enhance the character, diversity and special qualities of Dublin city's landscapes and soils.





Interrelationships

Maintain and improve the health of people, ecosystems and natural processes

Actively seek to integrate opportunities for environmental enhancement during adaptation to climate change

3 ASSESSMENT OF CHIEF EXECUTIVE RECOMMENDATIONS RELATING TO ACTIONS IN THE DUBLIN CITY CCAP.

This section assesses the Actions recommended in the CE report for the Dublin City CCAP. In line with the approach to the SEA the actions are assessed across the parameters listed in Section 2. The matrix and symbols used are provided below in Tables 1 and 2 respectively.

TABLE 16 MATRIX OF ASSESSMENT

No likely interaction with /insignificant impact with SEOs	0	Potential conflict with SEOs – likely to be mitigated	\$
Likely to improve status of SEOs	^	Probable conflict with SEOs – unlikely to be mitigated	•

TABLE 17 SYMBOLS USED IN THIS SEA

SEA Topic								
Biodiversity Flora and Fauna	Population and human health Noise	Water Resources including flood	Soil and Geology	Material Assets	Air Quality and Climatic Factors	Cultural Heritage	Landscape	Interrelation ship
				F				(3)

TABLE 18 ASSESSMENT OF CE RECOMMENDED ACTIONS

No.						(F)	Cines dags			③
	The City Council Energy Review (mid 2019) and going forward, will include a glide path illustrating the energy efficiency and GHG emission targets for the City Council up to and including 2030. Appendix II: Total Emissions in Dublin City of the CCAP, will also be updated every two years in accordance with EU Covenant of Mayors for Climate & Energy protocol.	O	O	0	0	O	0	O	0	O

SEA Comment

No.						(F)	Circle strop			®
emiss	two actions as recommen ions. These in and of them s are identified for this CE	selves do not give	e rise to landuse effe		-		•		•	
	The City Architects Division of Dublin City Council is committed to participating with Irish Green Building Council and other European organisations in BUILD UPON 2. This is a project funded under the EU's H2020 programme and will run for two years from May 2019. It will work to develop long-term building renovation strategies, linked to EU and national policy, with the aim of delivering a highly efficient and decarbonised	O	•	0	0	•	↑	1	↑	↑

			7	Challe drape		®
building stock by 2050.						
The City Architects Division of Dublin City Council is committed to participating with the RIAI in particular the Sustainability Task Force in seeking new and innovative approaches to Climate action in the built environment:						
Identify site for trialling renewable energy projects, including solar PV and Geothermal.						

		I		T	1			1	Т	
No.						(7)	Cinda chaga			9
Actio	ns relating to long term bu	 	and new and innova	 ative climate acti	on in the built e	 Invironment are con	l nsistent wit	l h a number of	SEOs in par	<u>l</u> rticular.
	rial assets, climate change	-							•	
Tl :					ومنانهن اواريو واواره	. th - CIC data :	ata da e cui		. i.a ala a Disla	lin City CDI
	dentification of new sites f CAP, SEA ER and NIS will a	-		-		·		-	s in the Dub	iin City CDF
tile C	CAF, SLA LIN AND INIS WIII A	iso apply. Subject	to full implementati	оп аз арргорна	ie, no auverse e	iivii oiiiileiitai eilec	is are ident	ilicu.		
	Develop an									
	understanding of deep	О	0	0	1	^	1	О	0	1
	geothermal resources in									
	Dublin though the GEO-									
	URBAN Project', with									
	the timeframe of 2021,									
	and the indicators being									
	the completion of the									
	'report', and the target									
	impacted is 'Public									
	Awareness'									
Strat	egic Environmental Assess	ment of Chief Exc	ecutive's Recomme	ndation					1	<u> </u>
	•									
This a	action is consistent with a	number of SEOs n	amely Climate chang	ge and air quality	y as well as mate	erial assets. No adve	erse enviroi	nmental effect	s are identi	fied.
	New Action:									
	IVEW ACTION.	o	^	o	^	^	^	^	^	^
	The City Council will					ľ	•		•	•
	undertake a research									
	study to investigate the									
	Lifecycle Assessment of									

				(A)	F				
Traditional and New	,					Climate change			
Construction Metho									
for Residential Proje									
in Dublin with a view									
formulating initial									
recommendations b	У								
end 2019.									
tive interactions with stified for this CE recon		ecycle assessment	research. At this j	juncture no land	duse effects are ide	entified and no	significant	environmenta	al effects
tified for this CE recon	nmendation	ecycle assessment	research. At this j	juncture no land	duse effects are ide	entified and no	significant	environmenta	al effects a
Action: In all buildin	nmendation	ecycle assessment	research. At this j	juncture no land	duse effects are ide	entified and no	significant	environmenta	al effects a
tified for this CE recon	nmendation			juncture no land	duse effects are ide	entified and no	significant	environmenta	al effects a
Action: In all buildin projects, new build retrofit, Swift Bricks other nesting sites f	or or			juncture no land	duse effects are ide	entified and no	significant	environmenta	al effects a
Action: In all buildin projects, new build retrofit, Swift Bricks other nesting sites f swifts will be provid	or or or ed			juncture no land	duse effects are ide	entified and no	significant	environmenta	al effects a
Action: In all buildin projects, new build retrofit, Swift Bricks other nesting sites f swifts will be provid where practicable.	or or or ed			juncture no land	duse effects are ide	entified and no	significant	environmenta	al effects a
Action: In all buildin projects, new build retrofit, Swift Bricks other nesting sites f swifts will be provid where practicable. presence of swift	or or ed			juncture no land	duse effects are ide	entified and no	significant	environmenta	al effects a
Action: In all buildin projects, new build retrofit, Swift Bricks other nesting sites f swifts will be provid where practicable. presence of swift breeding sites will b	or or ed The			juncture no land	duse effects are ide	entified and no	significant	environmenta	al effects a
Action: In all buildin projects, new build retrofit, Swift Bricks other nesting sites f swifts will be provid where practicable. presence of swift breeding sites will b identified to ensure	nmendation g or or or ed The e that			juncture no land	duse effects are ide	entified and no	significant	environmenta	al effects a
Action: In all buildin projects, new build retrofit, Swift Bricks other nesting sites f swifts will be provid where practicable. presence of swift breeding sites will b	nmendation g or or or ed The e that			juncture no land	duse effects are ide	entified and no	significant	environmenta	al effects a

On foot of a submission by Birdwatch Ireland, the SEA recommended a specific measure relating to swift boxes. Positive effects on biodiversity SEOs in particular

No.			***				Cinale charge			③
	The City Council will undertake a research study to investigate the Lifecycle Assessment of Traditional and New Construction Methods for Residential Projects in Dublin with a view to formulating initial recommendations by end 2019.	O	↑	0	↑	^	↑	^	↑	↑
	Develop maintenance and condition survey programmes for Council owned historic and ancient monuments that are informed by climate change impacts.									
	Conduct research and seek to develop City Council based case studies on appropriate and sensitive retrofitting/energy upgrading of traditional									

No.				Circle darge		®
	buildings to inform works both to Council owned properties and to guide private owners					

The above actions focus on cultural heritage in particular. By promoting consideration of these resources and adapting and considering climate change effects stronger protection of these resources are integrated to the Dublin City CCAP. These are identified as generating positive direct interactions with a number of SEOs including Cultural Heritage, Landscape and Climate Change as well as indirect positive effects on population and human health and material assets SEOs. No adverse environmental effects are identified for these CE recommended actions.

Amend Action 27: Develop Cycling Action Plan: 471 km of a	①	↑	‡	1	↑	↑		^
possible cycle network.								
Cycle Network and								
Walking and targets								
DCC will accelerate								
the delivery of								
cycling and walking								
infrastructure with								
continuous								
segregation of								
vehicles and high								
levels of perceived								

No.				(F)	Circles d'argo		③
	safety. The Greater Dublin Area Cycle Network Plan has identified 471km of a possible cycle network for Dublin City. DCC will focus on the development of the greenways, primary and secondary routes while significantly improving the walking environment and creating opportunities for sojourning along the same corridors.						

This proposed amendment provides for positive interactions with a range of SEOS namely climate change, air quality, material assets, population and human health. The Greater Dublin Area Cycle Network Plan was subject to SEA and AA. Subject to the implementation of relevant measures in this plan, the Dublin City CDP, CCAP, SEA ER and NIS no adverse environmental effects are identified.

Amend Action 38: Bike Parking and targets O Actions: Dublin City Council has drafted a strategy for the provision of public cycle parking throughout the City. Since 2018, 2,100	o	↑	↑	o	o	↑
Council has drafted a strategy for the provision of public cycle parking throughout the						
cycle parking spaces have been provided at 110 locations and a further 2,000 spaces are proposed to be installed in 2019 at over 120 locations. Further installations will be made to provide over 20,000 public parking spaces by 2030. DCC will also work with						

No.				4		®
	availability of sheltered bicycle parking to enable people to cycle to and from key public transport nodes, and strategic destinations such as the recent installations for Drury Street bike parking facilities.					

This proposed amendment provides for positive interactions with a range of SEOS namely climate change, air quality, material assets, population and human health. Subject to the implementation of relevant measures in the Dublin City CDP, CCAP, SEA ER and NIS no adverse environmental effects are identified.

Amend Action 39: Bike Sharing	0	^	0	0	^	↑	^	^	^
Jilailiig		•			•	•	•	•	•
DCC has had immense									
success with the									
dublinbikes scheme and									
there is continuous									
demand to expand this									
programme, which will									
help to reduce emissions									
and provide more									

No.				Oran days		®
	options for sustainable modes of transport. DCC will continue to monitor its performance and any expansions will take account of emerging business models for bikesharing.					
	DCC has facilitated the expansion of bike share options through the creation of Bye Laws in 2017 for the operation of Stationless/Dockless bike share schemes. Current operator Bleeperbike now covers areas of the city not included in the Dublinbike Scheme making bike share an option for a wider population.					
	DCC will seek an expansion of the bike					

No.					(2)	Clinate charge			®
	sharing programme by a further 1150 bikes by the end of 2019. This expansion will also seek to include e-bikes								
SEA C	omment: This proposed a			-	-				
huma	n health. Subject to the ir	 elevant measures ir	n the Dublin City	, CDP, CCAP, SEA	A ER and NIS no adv	erse enviro	nmental effec	ts are ident	ified.
huma	New Action: Participation in European Commission Research Programmes	elevant measures in	n the Dublin City	CDP, CCAP, SEA	A ER and NIS no adv	rerse enviro	nmental effec	ts are ident	ified.
huma	New Action: Participation in European Commission Research	elevant measures in	the Dublin City	CDP, CCAP, SEA	↑ ER and NIS no adv	rerse enviro	nmental effec	ts are ident	ified.

No.				F	Circulas charge		③
	and promotion of cycling infrastructure. DCC						
	will collaborate with Transport for						
	Greater Manchester and Edinburgh in						
	benchmarking the city's status on sustainable mobility						
	using EC Sustainable Urban Mobility						
	Indicators. This collaboration will						
	leverage on European						
	Commission Programmes. DCC						
	will also lead local innovation and research						
	programmes and encourage citizens						
	and business participation in the						
	development and deployment of						

No.						(7)	Onda darga			®
	sustainable transport solutions.									
	Comment: This proposed a te change, air quality, ma							on indirect pos	itive intera	ctions with
	New Action: Baseline Create a baseline of Sustainable Urban Mobility for Dublin in line with EC Indicators	o	0	o	O	o	О	o	o	O
	comment: As with the pre transport and mobility a c							ssential to unc	lerstanding	trends
	DCC participates in the national Cycle Right programme bringing cycle training to pupils in primary and secondary schools	o	^	o	o	↑	↑	o	o	↑

No.							Christe darge			③
	throughout the city area. DCC works closely with An Taisce Green Schools on the Green Travel theme and encourages increased cycling through support for cycle training, on site cycle parking and improvements to the physical environment identified by pupils. Cycle Training Programme for 6th Class students / Pedal Power Labs									
	Comment: n that promotes and encou	urages a modal shif	t is positive in relat	ion to SEOs inclu	uding populatior	າ and human health	ı , climate c	hange and ma	nterial assets	5.
	New Action: Partnerships: DCC will continue to seek new and	•	^	^	^	^	↑	^	↑	↑

No.				Onta dags		③
	expand on existing					
	partnerships to					
	encourage					
	sustainable travel					
	and safer travel behaviours.					
	benaviours.					
	New Action:					
	Community					
	Engagement:					
	Dublin City Council					
	will engage with					
	local communities to					
	develop a vision for					
	the future of their					
	neighbourhoods					
	with a strong focus					
	on local living,					
	sustainable mobility					
	and quality of life.					
	New Action:					
	Communications					
	and Promotion					
	DCC will establish a					
	portal dedicated to					

No.						(3)	Great days			③
	communication and promotion of active travel within existing platforms.									
	bove actions support engagge and material assets.	gement commun	cation and collabo	oration and this is	s consistent with	a number of SEOS	including po	opulation and	human hea	th , climate
	DCC is working in partnership with the EPA on expanding and enhancing ambient air quality monitoring in Dublin in accordance with the	•	↑	↑	0	^	↑	0	О	↑

No.				Christo d'argo		③
	DCC is exploring the feasibly of carrying out an air quality status study in Dublin port					

Actions relating to air quality monitoring are positive particularly as they can be used to provide a baseline and monitoring regime for air quality trends. This is consistent with a number of SEOS including population and human health, climate change and material assets. Indirect longer positive effect should the monitoring result in actions that improve air quality with accompanying benefits for biodiversity, human health, water and climatic factors.

The Council will					
undertake an					
assessment of the					
number of existing					
and potential future					
Electric Vehicle					
Charge points in its					
jurisdiction.					
,					

SEA Comment: This action relates to an assessment only and no landuse effects are identified. No interaction with Strategic Environmental Objectives currently and no significant environmental effects are identified for this CE recommendation.

No.						(2)	Chain diago			③
	New Action: East Coast trail (10.8km in DCC area)		^			^	^		1	^
	Action 37: Survey possibly by Drones/Satellites of paved areas in the City.	o	^	^	^	o	^	o	o	^

Comment:

This action will assist in gathering baseline information relating to permeability and soil sealing. Positive interactions with SEOs including climate change, soil and geology.

Action 38: Environmental Surveys	^								
of all of City rivers and estuaries as baseline									
surveys.									

SEA Comment: This action is positive in relation to all SEOs particularly biodiversity, water and landscape.

						(7)	Clinate charge			(4)
١	Action 19: Risk workshops to assess likely impacts on Council services.	o	↑	0	0	↑	↑	o	О	↑
Со	omment: Positive interact	tions in relation t	o awareness raising	and climate cha	nge, population a	and human health a	and materia	al assets.		1
f	Action 39: Increase funding for Gully Cleaning in the city	o	o	o	o	o	o	o	О	О
	ent: No direct landuse e	effects identified	for this action, thou	gh increase effic	ciencies of gullie	s can reduce flood	risk.			
m										

in the Dublin City CDP review

29

No.							Cincia charge			®
	Action 30: Implement the North East Inner City and Liberties Greening Strategy. Action 33: Assess feasibility of additional green space for local food production including community gardens and urban orchards.	^	^	^	^	^	^	^	^	^
	omment ve interactions in relation	to population, biod	liversity, soil, landso	cape and climate	e change SEOS					
	Action 11: Continued support of development of the Greenways concept for: Dublin Bay,	↑ \$	↑	↑	↑	↑	^	^	^	↑

No.						(F)	Cinata charge			®
	Dodder, Santry, Liffey, Tolka and Camac.									
	omment ve interactions and subjec	t to full implemen	tation of measures i	n the CCAP, SEA	ER, NIS and Dul	olin City CDP no adv	verse envirc	onmental effec	ts are ident	ified.
	Action 31: Develop urban woodland strategy as part of DCC Tree Strategy And the following new	↑	^	^	^	^	↑	^	↑	^
	Action is proposed to the Draft CCAP: Analyse climate change impacts on City's trees to inform	↑	^	↑	↑	↑	↑	↑	↑	↑

No. **SEA Comment** Positive interactions with biodiversity, landscape, climate change and human health SEOs amongst others. Co benefits also relate to soil and permeability as well as ecological connectivity and enhancement. Action 7: Collect data to inform the preparation of a list of habitats and species in Dublin City vulnerable to climate change. Devise measures for reducing risks to these habitats and species locally and implement and evaluate their effectiveness Action 21: Provide data to RAMSAR Committee for Ireland on wetlands in Dublin City. Action 39: Engage with business community to

develop sustainable

					((3
[ousiness initiatives for Oublin Bay UNESCO Biosphere Business					Climate charge.			
	Strategy.								
	e interactions across of a tration is increasingly re	EOS relating to dat	a gathering and a	daptation to clin	nate change and bi	iodiversity. The	role of wetl	ands in carb	on
uest		EOS relating to dat	a gathering and a	daptation to clin	nate change and bi	iodiversity. The	role of wetl	ands in carb	on •

No.							Omas dags			®
	Promote recycling and the circular economy to householders through a range of workshops, talks and programmes. Action 13: Amend to read: Support and promote litter clean-up days and initiatives Action 20: Support and	↑	^	↑	↑	↑	↑	^	↑	↑
	promote Tidy Towns/Green Schools/City Neighbourhoods initiatives and Local Agenda 21 Initiatives									

Comment: Promotion of circular economy is consistent with SEOS particularly around material assets and climate change. Actions that address illegal dumping and promote behavioral change in relation to litter generate positive effects as a reduction in illegal dumping creates long term positive effects on soil and geology, water and biodiversity, as well as Landscape and Population

No.						(2)	Cinale starge			®
	The Local Authority will work with the Local Authority Waters Programme in its support of communities and stakeholders in the delivery of local water quality projects and initiatives	↑	↑	↑	↑	^	↑	↑	↑	^
	The City Council will carry out further research to engage with stakeholders to promote and develop business supports to encourage reduction of emissions and other climate driven actions,		•			↑	↑			^

No.				Creat days		®
	and to develop targets that could be measured on progress being achieved					

This text provides greater context and support for public awareness and engagement and role of business community in addressing climate change. Positive interactions with Population and Human Health and Climate Change SEOS and no significant adverse effects are identified for this CE recommendation.

TABLE 19 IN COMBINATION EFFECTS

Plan	Comment	Cumulative effects
Climate Change Action Plans 2019- 2024 for other Dublin Local Authorities	During the formulation of the CCAPs for the Dublin Region, a suite of common thematic actions have been prepared for each of the local authority areas The individual action plan for each Local Authority has undergone Habitats Directive Assessment and Strategic Environmental Assessment. It has been found that by implementing the mitigation policies and objectives of the relevant CDP as identified in the NIR and SEA ER, effects to the environment and European Sites are not likely to occur	Adverse cumulative effects not identified
National Planning Framework	The purpose of the NPF is to provide a focal point for spatial plans throughout the planning hierarchy. It will provide a framework for the new Regional Spatial and Economic Strategies (RSESs) by the three Regional Assemblies and the associated enhancement of the economic development focus of local authorities as per the Local Government Reform Act 2014. The	The SEA And NIR of the NPF and Draft RSES are now available.

	NPF will co- ordinate the strategic planning of urban and rural areas in a	
	regional development context to secure overall proper planning and	
	development as well as co-ordination of the RSES's and city/ county	
	development plans in addition to local economic and community plans and	
	local area plans and other local development.	
Regional Spatial &	The RSES is a strategic plan which identifies regional assets, opportunities	The SEA ER and NIS of the draft RSES and
Economic Strategy	and pressures and provides appropriate policy responses in the form of	material amendments SEA were reviewed. At
(Draft)	Regional Policy Objectives. At this strategic level it provides a framework for	this juncture, no adverse in combination
	investment to better manage spatial planning and economic development	effects are identified
	throughout the Region. The Eastern and Midland Regional Assembly have	
	proposed material amendments to the draft Regional Spatial and Economic Strategy	
	for the period 2019-2031, as required under section 24 (8) of the Planning and	
	Development Acts 2000-2018.	
	The Environmental Report has been updated in accordance with the SEA	
	Directive and the Planning and Development (Strategic Environmental	
	Assessment) Regulations S.I. No. 436/2004 (as amended), accompanied by a	
	Regional Flood Risk Appraisal Report. A Natura Impact Report (to inform the	
	Appropriate Assessment) has also been updated in accordance with Article 6	
	of the Habitats Directive, the Planning and Development Act 2000-2018, and	
	the European Communities (Birds and Natural Habitats) Regulations S.I. No.	
	477/2001 (as amended).	
	These documents were on display until 12 th April 2019 and the report on	
	consultations and Material amendments will be considered when available.	
Water Services	Ireland's first integrated national plan for the delivery of water services, the	No in-combination impacts were predicted as
Strategic Plan	Water Services Strategic Plan (WSSP) addresses six key themes and was	a result of implementation of the Plans
	adopted in 2015. It was subject to full SEA and AA and concluded that	
	Overall, the assessment has identified that the implementation of the draft	
	WSSP is likely to have positive effects on the majority of the SEOs that have	

	been used in the assessment to help characterise the environmental effects	
	of the WSSP and no significant negative effects were identified.	
Neighbouring	These plans were subject to full SEA and AA and concluded that subject to full	No in-combination impacts were predicted as
County	adherence and implementation of measures likely significant effects were	a result of implementation of the Plans
Development Plans	not identified.	
River Basin District	The National River Basin District Management Plan is now published (2018).	No in-combination impacts are predicted as a
Management Plans.	The second cycle River Basin Management Plan aims to build on the progress	result of implementation of the Plans
	made during the first cycle with a greater emphasis on ensuring the evidence	
	base is available and the administration supports are fully in place to support	
	key measures. The approach to the plan development involves	
	characterisation of Ireland's water bodies in order to develop a tailored	
	programme of measures to allow for the protection of good status or the	
	restoration of good status for all water bodies. The outcomes are then	
	monitored in order to feed into further characterisation and measures	
	setting as the cycle moves forward. The plan was subject to SEA and	
	Appropriate Assessment.	
CFRAMS Study	The Eastern CFRAM study has been commissioned in order to meet the	No in-combination impacts are predicted as a
	requirements of the Floods Directive, as well as to deliver on core	result of implementation of the Plans.
	components of the 2004 National Flood Policy, in the Eastern district.	

Greater Dublin Drainage

Irish Water made a planning application for strategic infrastructure development to An Bord Pleanála for the Greater Dublin Drainage Project in June 2018. The GDD project proposes a new regional wastewater treatment facility to be located in the townland of Clonshaugh in north county Dublin, an underground orbital sewer from Blanchardstown to Clonshaugh, a new pumping station at Abbotsown, a partial diversion of the north fringe sewer, and an outfall pipeline to return the treated water to the Irish Sea. The project also includes a regional sludge treatment centre at the new GDD facility and an associated biosolids storage facility at Newtown near Kilshane Cross.

Chapter 23 of the EIAR was reviewed with a focus on the cumulative impacts,
No in-combination impacts are predicted as a result of implementation of the Project

The Greater Dublin
Transport Strategy
2016-2035

The Transport Strategy for the Greater Dublin Area, 2016-2035 has been prepared and published by the National Transport Authority. It sets out how transport will be developed across the region, covering Dublin, Meath, Wicklow and Kildare, over the period of the strategy and has been approved by the Minister for Transport, Tourism and Sport in accordance with the relevant legislation.

Luas, heavy rail and orbital bus routes are of particular relevance to the

Positive effects in relation to the prioritisation of public transport modes above private transport.

It is noted that a series of sectoral adaptation plans are due to be submitted to government by end of September 2019. Reference is made to same and a commitment to consistency is provided in the CE Report National Context as follows:

"Under the National Adaptation Framework, sectoral adaptation plans are required to be prepared and submitted to the Government for approval, by 30th September 2019. Adaptation plans will be prepared for the following sectors:

- Seafood Department of Agriculture, Food and the Marine
- Agriculture Department of Agriculture, Food and the Marine

elements of this Strategy and the CCAP.

- Forestry Department of Agriculture, Food and the Marine
- Biodiversity Department of Culture, Heritage and the Gaeltacht
- Built and Archaeological Heritage Department of Culture, Heritage and the Gaeltacht

- Transport infrastructure Department of Transport, Tourism and Sport
- Electricity and Gas Networks Department of Communications, Climate Action and Environment
- Communications networks Department of Communications, Climate Action and Environment
- Flood Risk Management Office of Public Works
- Water Quality Department of Housing, Planning and Local Government
- Water Services Infrastructure Department of Housing, Planning and Local Government
- Health Department of Health

The implementation and future iterations of the Climate Change Action Plan will be consistent with approved sectoral adaptation plans and the Council will work in partnership with sectors to achieve and deliver the sectoral plans."

3 SCHEDULE 1 ASSESSMENT

3.1 Introduction

This section presents a screening in line with Schedule 1 of the SEA Regulations(S.I 435 of 2004) as amended. It concludes with a SEA Screening Conclusion.

Table 20 SEA Screening against Schedule 1

Criteria for determining whether the Plan is likely to have significant effects on the environment

1. The characteristics of the plan having regard, in particular, to:

the degree to which the Plan sets a framework for projects and other activities, either with regard to the location, nature, size and operating conditions or by allocating resources,

The plan does establish a range of actions, some of which are more landuse based, than others. The plan will provide a framework to help achieve climate change resilience at DCC level but also as part of a wider Dublin regional co-ordinated effort.

The CE recommended actions are in compliance with the Strategic Environmental Objectives as Section Two of this report demonstrate.

the degree to which the Plan influence other plans, including those in a hierarchy,

The CE recommendations as they relate to actions will be underpinned by the statutory planning framework hierarchy in particular the National Planning Framework, Eastern and Midlands Regional Economic and Spatial Strategy, Dublin City CDP.

the relevance of the Plan in the integration of environmental considerations in particular with a view to promoting sustainable development,

The CE recommendations as they relate to actions overall strengthen environmental protection particularly in relation to cultural heritage and circular economy.

By inserting all SEA and AA mitigation measures identified on the draft Plan further commitments to environmental enhancement are provided.

Environmental problems relevant to the Planning Scheme

The assessment in Section 2. has shown that conflicts with SEOS are not identified; and where they are, existing mitigation measures included in the CCAP SEA ER, Natura Impact Statement and Dublin City CDP will provide sufficient environmental protection.

The draft CCAP has been prepared through careful consideration of key environmental issues and the CE Recommendations as they relate to actions do not dilute or significantly affect these environmental considerations.

the relevance of the Plan to the implementation of European Union legislation on the environment (e.g. plans linked to waste-management or water protection).

The SEA, and other environmental assessments including Appropriate Assessment considered and integrated European Union legislation on the environment including those relating to topics such as Waste Management and Water protection.

Given the severe challenges facing Ireland in responding to climate change, the CCAP is very relevant in setting out actions, targets and indicators that can be measured to see how at local authority level, measures are being implemented to respond to this urgent issue.

The assessment of the CE actions has not identified conflicts with such provisions and no significant effects on the environment are identified.

2. Characteristics of the effects and of the area likely to be affected, having regard, in particular, to:

the probability, duration, frequency and reversibility of the effects,

The Proposed CE Recommendations would not be likely to result in significant environmental effects as detailed in the individual assessment of actions in Section 2 and in combination assessment in Section 2.

the cumulative nature of the effects,

The CE recommendations as they relate to actions would not be likely to result in significant environmental effects as detailed in the individual assessment of the actions in Section 2 and in combination assessment in Section 2

the transboundary nature of the effects

The CE Recommendations as they relate to actions would not be likely to result in significant environmental effects as detailed in the individual assessment of actions in Section 2 and in combination assessment in Section 2

the risks to human health or the environment (e.g. due to accidents),

The CE Recommendations would not be likely to result in significant environmental effects as detailed in the individual assessment of the actions in Section 2 and in combination assessment in Section 2.

the magnitude and spatial extent of the effects (geographical area and size of the population likely to be affected).

The CE Recommendations as they relate to actions would not be likely to result in significant environmental effects as detailed in the individual assessment of material alterations in Section 2 and in combination assessment in Section 2.

the value and vulnerability of the area likely to be affected due to:

(a) special natural characteristics or cultural heritage

The sphere of influence of the CCAP includes a number of European Sites as well as numerous important cultural heritage sites and landscapes. The new actions proposed by the CE as they relate to cultural heritage are particularly significant as they relate to adapting and considering climate change on cultural heritage.

Existing measures in the CCAP, SEA ER and Natura Impact statement, subject to their full implementation are not identified as giving rise to significant effects on European Sites within the plans' sphere of influence.

(b) exceeded environmental quality standards or limit values,

It is anticipated that environmental quality standards will not be exceeded by the CCAP actions.

(c) intensive land-use,

No significant environmental effects are identified for the CE recommendations as they relate to actions.

(d) the effects on areas or landscapes which have a recognised national, European Union or international protection status.

A Habitats Directive Screening Statement has been prepared in tandem with this SEA Screening to assess if likely significant effects arise in relation to conservation management objectives of European Sites and the CE Recommendations as they relate to actions. This has found that no such effects are identified. .

3.2 Strategic Environmental Assessment Determination

A Strategic Environmental Assessment (SEA) Screening determination has been made by Dublin City Council regarding actions as recommended by the Chief Executive Report on submissions made on the Draft Dublin City CCAP 2019-2012.

Section 9 (1) of the (2004) Regulations (S.I. No. 435) (as amended) states "subject to sub-article (2), an environmental assessment shall be carried out for all plans and programmes

- (a) which are prepared for agriculture, forestry, fisheries, energy, industry, transport, waste management, water management, telecommunications and tourism, and which set the framework for future development consent of projects listed in Annexes I and II to the Environmental Impact Assessment Directive, or
- (b) which are not directly connected with or necessary to the management of a European site but, either individually or in combination with other plans, are likely to have a significant effect on any such site."

As the screening assessment under Schedule 1 above demonstrates, the scale, size and location of the CE Recommendations as they relate to actions to the CCAP on foot of public submissions is not identified as giving rise to adverse effects on the environment.

This is due to the nature of the new actions which overall are positive for a number of Strategic Environmental Objectives including Climate Change, Population and Human Health, Material Assets, cultural heritage and landscape. The existing measures included in the SEA ER, Natura Impact Statement of the Dublin City CCAP 2019-2023 are identified as sufficiently robust and subject to their full implementation, no likely significant effects on the environment are identified.

This assessment is further supported by the Screening Statement in support of Appropriate Assessment.