



Comhairle Cathrach  
Bhaile Átha Cliath  
Dublin City Council



STRATEGIC ENVIRONMENTAL  
ASSESSMENT STATEMENT

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DUBLIN CITY COUNCIL  
**CLIMATE CHANGE  
ACTION PLAN 2019-2024**

**JULY 2019**

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SEA Statement for review	1 28.05.2019	Ruth Minogue, MA(Econ) MCIEEM
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## **1 Introduction**

Dublin City Council (DCC) approved the Dublin City Council Climate Change Action Plan 2019-2024 (CCAP) at the council meeting on Monday 13th May 2019.

The main purpose of the SEA Statement is to provide information on the decision-making process, to document how environmental considerations, the views of statutory consultees and other submissions and the recommendations of the SEA Environmental Report and Natura Impact Statement, have been taken into account in the CCAP, as well as monitoring arrangements.

This SEA Statement includes the following information:

- Summary of how environmental considerations have been integrated into the CCAP (Section Two)
- Summary of how submissions received during consultation have been taken into account in the CCAP (Section Three);
- Reasons for choosing the recommended development scenario, in the light of other reasonable alternatives considered (Section Four);
- Measures that are to be undertaken to monitor the significant environmental effects of implementing the CCAP (Section Five).

## 2 Summary of how Environmental Considerations and the SEA Environmental Report have been integrated into Dublin City CCAP 2019-2024.

### 2.1 Introduction

The purpose of this section is to present a summary of how environmental considerations and consultation have informed the plan preparation process. Legislation and guidance relating to SEA recommends that the process of plan preparation, SEA and Appropriate Assessment (AA) should be integrated and prepared in an iterative process to facilitate the ongoing assessment and evaluation of environmental considerations during plan preparation. A multi-disciplinary team worked on the SEA and AA elements of the plan. Key tasks associated with the SEA were as follows:

**TABLE 1 STAGES IN SEA**

Stage of SEA	Plan
<b>Stage 1 Screening</b>	Screening is the first stage of SEA to determine if the plan requires full SEA. The SEA Regulations state that SEA is mandatory for certain plans while screening for SEA is required for other plans that fall below the specified thresholds. Given the scale, nature and extent of the CCAP, as well as the finding of likely significant effects identified by the Screening Statement in support of Appropriate Assessment, the CCAP progressed to the next stage of SEA – Scoping.
<b>Stage 2 Scoping</b>	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 statutory environmental authority’s consultees in December 2018 for comment.
<b>Stage 3 Environmental Report</b>	The Environmental Report tells the story of the draft CCAP and how environmental considerations have been addressed and included during the preparation process. The appropriate assessment is also discussed in the Environmental Report. This report was the main consultation document of the SEA process and was on display alongside the plan along with supporting reports. The Draft CCAP, SEA ER and Natura Impact Statement were on public display for a six week period during February - March 2019.
<b>Stage 4 SEA Statement-current stage</b>	This stage is the final output of the SEA process and tells the story of the SEA process. It has been prepared now the CCAP is finalised and approved.

### 2.2 Baseline Data, Geographical Information System and environmental sensitivity mapping

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 existing environmental 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 Development Plan 2016-2022, baseline research undertaken by Codema, Irish Water, the EPA, Met Eireann and other sources as appropriate.

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.

### **2.3 Mitigation**

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 CCAP preparation has facilitated the integration of environmental considerations into the formulation, layout and text of the plan. In addition, potential positive effects of implementing the plan 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 CCAP action implementation, 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.

The CCAP has been prepared having regard to the policies and objectives outlined within the Dublin City Development Plan 2016-2022. The environmental protection measures for the CDP 2016-2022 are included in the SEA ER. The SEA ER (Chapter Nine) has the full list of mitigation measures.

### 2.3.1 Mitigation Measures

The following table presents the mitigation measures recommended for the CCAP from the SEA and Appropriate Assessment process. Subject to minor amendments, these were included in the Dublin City CCAP 2019-2024 as approved. The final recommendations and text is provided below in Table

**Table 2 Mitigation Measures**

Overarching measure	<b>An integrated approach to decision making in relation to these climate change actions is recommended.</b>	Included in CCAP Yes/no?
Flood Resilience	<b>Recommended text in green</b>	
	<b>Develop and implement Coastal Zone Management plan for Dublin Bay, aligned with County Climate Change Action Plans for Dublin and other local authority plans and strategies</b>	Yes
	Develop template to capture impacts, response and costs <b>(including consideration of ecosystem services/natural capital costs)</b> for all major climate events	Yes
	Update DLA urban drainage and flooding policies for current knowledge of flood risk and the latest best practice in drainage design <b>promoting natural flood measures as a priority</b>	Yes
New text before Actions 11- 18 in Flood Resilience Section	<b>The following flood storage actions will incorporate nature based solutions and biodiversity enhancement measures where possible.(Refers to actions 11 to 18)</b>	Yes
New measures to be consistent with neighbouring Local Authorities	<b>Communication and awareness campaigns on flood risk management and natural flood management measures</b>	Yes

### **3 Summary of how consultations were taken into account.**

#### **3.1 Introduction**

Throughout the preparation of the CCAP and the SEA ER, consultation was undertaken at key points in the process.

Further information is available in the following SEA Reports:

- SEA Scoping report issued December 2018
- SEA Environmental Report - issued February 2019
- SEA advice on public submissions and Chief Executive's recommendations
- SEA commentary on Chief Executive's recommendations
- SEA and AA Screening on Chief Executive's recommendations

The following section summarises key points and how they were addressed in the SEA and the CCAP 2019-2024.

#### **3.2 Consultation on SEA- Scoping and Environmental Report**

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 SEA ER accompanied the CCAP display period that took place over a six-week period in February - March 2019. The table below summarises key points raised during the SEA Scoping Stage, and the SEA ER stage.

**Table 3 Environmental Consultation-Scoping Stage**

Consultee	Key Issue Raised	SEA Response
<b>Scientific Officer, SEA Section</b>	<b>Office of Evidence and Assessment. Environmental Protection Agency, Regional Inspectorate, Inniscarra, County Cork</b>	
	We welcome the preparation of the Plan, which 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.	Noted
	We recognise the fundamental importance of ensuring that the National Transition Objective is underpinned by a clean, healthy and well-protected environment. Considering this, it is important to develop and implement the Plan 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.	Noted, the SEA and AA have helped to inform plan preparation and please see Chapter 8 Mitigation in particular
	<p>The SEA should also assist in identifying ways to maximise the potential co-benefits of climate-related measures for air quality, human health, biodiversity, water quality and other interrelated areas (i.e. win-win solutions).</p> <p>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 and the Plan.</p>	Noted, in particular certain actions in each theme already provide co-benefits and the SEA has provided additional mitigation to further enhance certain actions please see CCAP and Chapter 8 Mitigation of this SEA ER
	<p><b>Relevant Plans and Programmes</b></p> <p>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.</p> <p>We recommend including a flow diagram or/ schematic, illustrating where the Plan fits within the hierarchy of land-use, climate and related plans</p>	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.

Consultee	Key Issue Raised	SEA Response
	<p>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.</p>	<p>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.</p>
	<p><b>Greenhouse Gas Emissions</b></p> <p>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.</p> <p>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.</p>	<p>Noted.</p> <p>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.</p> <p>Consideration of significant effects in Chapter Seven of this SEA ER discusses this point.</p> <p>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</p>

Consultee	Key Issue Raised	SEA Response
	<p>Adaptation</p> <p>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.</p> <p>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 further work is needed to improve resilience, e.g. the resilience of critical water service infrastructure to flooding and drought.</p> <p>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.</p> <p>Additional aspects to consider may include changes in native species and habitats and the spread of invasive species, pests and pathogens.</p>	<p>government level rather than local authority.</p> <p>Codema carried out an adaptation risk assessment on behalf of DCC, 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.</p> <p>A key principle and stage of the CCAP relates to adaptation and responses to same.</p> <p>Noted, this is highlighted in Chapter 4 Baseline as a key issue for biodiversity and human health</p>
EPA State of the Environment Report 2016	<p>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</p>	<p>Noted and utilised in this SEA ER. Please see Chapter 3.</p>

Consultee	Key Issue Raised	SEA Response
	<p>considered, as relevant and appropriate to the Plan area in preparing the Draft CCAP and associated SEA. This report can be consulted at: <a href="http://www.epa.ie/irelandsenvironment/stateoftheenvironmentreport/">http://www.epa.ie/irelandsenvironment/stateoftheenvironmentreport/</a></p>	
	<p><b>Air quality</b></p> <p>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 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 (<a href="http://www.epa.ie/air/quality/monitor/">http://www.epa.ie/air/quality/monitor/</a>), should also be integrated as appropriate. The pollutants of most concern are traffic-related, including Particulate Matter and Nitrogen Dioxide.</p>	<p>Noted this is used in Chapter 4 Baseline Environment</p>
	<p><b>Noise</b> The Plan should take into consideration available noise action plans prepared within and adjacent to the Plan area.</p>	<p>Noted and included in Chapter Four.</p>
	<p><b>Available Guidance &amp; Resources Climate</b></p> <p>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).</p> <p>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 <a href="http://www.climateireland.ie/#/">http://www.climateireland.ie/#/</a></p> <p><b>Renewable Energy</b> 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.</p> <p><b>Water Quality</b> Our WFD Application provides a single point of access to water quality and catchment data from the national WFD monitoring programme. The Application is accessed through EDEN <a href="https://wfd.edenireland.ie/">https://wfd.edenireland.ie/</a> and is available to public agencies. Publicly available data can be accessed via the <a href="http://Catchments.ie">Catchments.ie</a> website</p>	<p>Noted</p>

**Table 4 Submissions on SEA ER and CCAP**

Consultee	Comments on the Environmental Report	SEA Response
<p><b>Cian O'Mahony</b>  <b>Environmental Protection Agency</b></p>		
<p><b>1</b></p>	<p>Health related aspects            It would be useful to include additional information on the potential health impacts of climate change (e.g. hot and cold extremes) and how they are to be addressed. The interactions with the health sectoral adaptation plan should also be discussed.</p>	<p>Chapters Four and Seven of the SEA ER will be expanded upon to highlight and discuss the health related aspects.</p>
<p><b>2</b></p>	<p>SEA and Plan Integration             We recommend that consideration is given to including a subsection in the Plan, showing how the SEA has influenced its preparation. This would serve to clearly show the link between the Plan and SEA processes.</p>	<p>A section in the Final CCAP will be included that provides information on how the SEA and AA has influenced the plan process.</p> <p>Strategic Environmental Assessment (SEA) is a statutory process, involving the systematic evaluation of the likely significant environmental effects of implementing the new Climate Change Action Plan before a final decision has been made to adopt it. SEA applies to environmental assessment of plans and strategic actions that influence and set the framework for projects.</p> <p>The EU Directive on Habitats</p>

Consultee	Comments on the Environmental Report	SEA Response
		<p>(92/43/EEC) (the Habitats Directive) as transposed into Irish law through the European Communities (Birds and Natural Habitats) Regulations 2011 (S.I.477 of 2011) requires the assessment as to whether the implementation of a plan is likely to have significant effects on any Natura 2000 site(s).</p> <p>The CCAP was screened to determine whether it has any significant impact on any Natura 2000 site. This screening determined that stage 2 Appropriate Assessment was required.</p> <p>It should be noted that whilst the AA is a statutorily separate process to the SEA, it is, in fact, a parallel process and as such the outcomes of the AA fed into and informed the SEA process outlined above.</p> <p>The SEA and AA processes have worked together to influence of plan preparation and the SEA process highlights where particular environmental sensitivities arise, and also make recommendations as to</p>

Consultee	Comments on the Environmental Report	SEA Response
		<p>how proposed actions may be improved to increase their environmental performance.</p> <p>Proposed changes to the CCAP through the Chief Executives Report have been screened for SEA and AA to ascertain if likely significant environmental effects or significant effects on European sites would arise.</p> <p>Both processes have identified additional mitigation measures for the CCAP and the SEA has also provided for a monitoring regime, which is included within this CCAP. All mitigation measures identified for the CCAP through the SEA and AA process will be adhered to and implemented over the course of the plan.</p>
<b>3</b>	<p>Assessment of Alternatives</p> <p>We welcome that the EPA ‘Developing and Assessing Alternatives in Strategic Environmental Assessment’ (2015) guidance document has been considered in preparing and assessing alternatives. We also note the alternatives considered in the SEA, and the selection of the preferred alternative</p>	Noted
<b>4</b>	Additional Plan Considerations	Noted and agreed.

Consultee	Comments on the Environmental Report	SEA Response
	<p>Irish Water’s Draft National Water Resources Plan should be useful to refer to, in terms of ensuring security of drinking water supply within the Plan area, is also considered. This plan includes consideration of climate change impacts. Aligning adequate and appropriate critical service infrastructure and population / economic growth of the Dublin region is essential.</p>	<p>Chapters 4 and 7 of the SEA ER will be expanded in the material assets section to discuss this. Chapter 3 will include reference to the Draft National Water Resources Plan</p>
5	<p>The link between the Plan and the sectoral adaptation plans could also be expanded on. This would clarify the alignment between the plan and other higher level sectoral plan.</p>	<p>Noted and agreed. Chapter 3 of the SEA ER will expand upon this and the links to other high level sectoral plans where appropriate</p>
	<p>Mitigation Measures</p>	
6	<p>We acknowledge the SEA recommendations, to improve the Plan in terms of integrating wider environmental considerations into the Plan. We note the recommendation to prepare and implement a coastal zone management plan for Dublin Bay. This should be prepared in collaboration with relevant stakeholders and consider the requirements of the SEA and Habitats Directives, as appropriate.</p>	<p>Noted, during the preparation of such a plan, the existing mitigation measures of the Dublin City CDP will apply as listed and presented in Chapter 8 of the SEA ER.</p>
7	<p>In relation to the application of strategic urban drainage systems as part of flood risk management actions described, these should be supported by relevant monitoring and maintenance also to ensure they operate effectively over the lifetime of the Plan.</p>	<p>Noted- The SEA recommends that interval monitoring and maintenance of strategic urban drainage systems be undertaken.</p>
8	<p>Where the potential for likely significant effects is identified, appropriate mitigation measures should be recommended and implemented, to avoid or minimise these. You should ensure that the Plan includes clear commitments to implement these mitigation measures</p>	<p>Noted – it is recommended that as part of the text on the influence of the SEA and AA on the plan preparation, a</p>

Consultee	Comments on the Environmental Report	SEA Response
		<p>specific commitment is included regarding mitigation measures and adherence to same. Please see the CCAP for this commitment as addressed in Point 2 <i>SEA and Plan Integration</i> above.</p>
<p><b>9</b></p>	<p><b>Monitoring</b>  The Monitoring Programme should be flexible to take account of specific environmental issues and unforeseen adverse impacts should they arise. It should consider and address the possibility of cumulative effects. Monitoring of both positive and negative effects should be considered. We welcome that the proposed SEA monitoring programme sets out the various data sources, monitoring frequencies and responsibilities. We recommend that the SEA Monitoring of environmental receptors, as set out in Table 12 (Chapter 9 - Monitoring) of the SEA, is incorporated into the Plan review to monitor how effectively environmental considerations are being implemented.</p>	<p>SEA recommends inclusion of the Monitoring Table in the final Plan.</p> <p>The introduction to Chapter 9 monitoring of the SEA ER highlights additional monitoring in the event of unforeseen and cumulative effects arising.</p>
	<p>Where possible, additional information on monitoring and indicators of the transition should be considered to ensure that resources continue to be appropriately directed and to help avoid unintended secondary adverse impacts</p>	<p>Noted,  Given that the SEA monitoring table will provide environmental monitoring of the CCAP as well as annual monitoring of the CCAP, it is considered sufficient at this point to capture the transition based on annual monitoring of the action plan, supported by SEA monitoring.</p>
	<p>The potential for environmental impacts of 'grey' and 'green' adaptation options will differ. Where 'grey' adaptation options are chosen / proposed to be implemented,</p>	<p>Noted and agreed.</p>

Consultee	Comments on the Environmental Report	SEA Response
	these should be adequately mitigated for, to minimise potential adverse significant environmental effects.	Mitigation Measures for 'grey' infrastructure will be highlighted in the Final SEA ER
	Should the monitoring identify adverse impacts during the implementing the Plan, Dublin City Council should ensure that suitable and effective remedial action is taken.	Noted, this statement is included in the SEA ER.
	It is noted in Milestone 5 that the Plan will be monitored and updated on an annual basis, with a review and revision every 5 years. Any updates to the Plan, should be screened in the context of SEA and Appropriate Assessment requirements	Noted, this statement will be included in the final CCAP, see also proposed text below
	Monitoring should capture the overall achievement of the actions set out in the Plan and the contribution to the overall combined actions and targets of the four local authority plans.	<p>Noted –</p> <p>It is recommended an additional text be provided to the above to highlight consistency with the requirements of the SEA Directive and reflecting the submission by the EPA, as follows:  Monitoring at local authority level is in line with current best practice such as EU Covenant of Mayor's approach. Each CCAP will be submitted to the Department of Communications, Climate Action and Environment. Under current obligations monitoring is adequately addressed in the CCAP and SEA. In addition, this may be premature in light of forthcoming Final Eastern Midland and Regional</p>

Consultee	Comments on the Environmental Report	SEA Response
		Spatial and Economic Strategy and upcoming Whole of Government Climate Action Plan
	Future Amendments to the Plan You should screen any future amendments to the Plan for likely significant effects, using the same method of assessment applied in the “environmental assessment” of the Plan.	Noted, and agreed. See above text which addresses this point.
	SEA Statement – “Information on the Decision” Once the Plan is adopted, you should prepare an SEA Statement that summarises: How environmental considerations have been integrated into the Plan; How the Environmental Report, submissions, observations and consultations have been taken into account during the preparation of the Plan; The reasons for choosing the Plan adopted in the light of other reasonable alternatives dealt with; and, The measures decided upon to monitor the significant environmental effects of implementation of the Plan.	Noted, the SEA Statement will be prepared and issued upon adoption of the CCAP.
	You should send a copy of the SEA Statement with the above information to any environmental authority consulted during the SEA process.	Noted and agreed.
<b>Dylan Potter Geological Survey Ireland</b>		
	Geoheritage Information provided on Geoheritage data.	
	Groundwater With regard to Flood Risk Management, there is a need to identify areas for integrated constructed wetlands. We recommend using the GSI’s National Aquifer and Recharge maps on our Map viewer to this end.	Noted, this will be highlighted in the SEA ER and Action 12 of the Dublin CCAP – Action 12 of the Dublin CCAP states: Identify areas for integrated constructed wetlands
	Urban Geology	Noted- Soil Sealing study is included in the Dublin City CCAP (Action 38), and

Consultee	Comments on the Environmental Report	SEA Response
	<p>As the proposed developments take place in an urbanized environment, we suggest looking at our Urban Geology section on our website. Geological Survey Ireland produces urban geoscience data on a project basis, informing the areas of soil geochemistry and contamination, 3D modelling of ground conditions, and assessing ground motions that present a hazard to citizens in the urban environment. We also have a GeoUrban section to our Map Viewer which covers the Greater Dublin Area.</p> <p>Nature based solutions should be considered even in an urban environment. For example, an analysis of soil sealing could be done to determine levels of permeability in the Greater Dublin Area. We recommend using the GSI's Quaternary subsoil map and geotechnical database for this task.</p>	<p>reference to this study will be included in the SEA ER.</p>
	<p>Coastal Vulnerability</p> <p>Vulnerability of the coast is intimately correlated to its characteristics and the intricate physical processes that intervene on its evolution. Strategies for coastal protection should include information from local to regional coastal vulnerability and impact assessments. 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 Bay.</p> <p>Management strategies for adaptation should be flexible and centred on monitoring the most vulnerable areas. Monitoring short and long-term responses in soft cliffs, such as shoreline and sediment volumetric changes is key to understand coastal behavior and to validate forecasting models. The current ESA (European Space Agency) funded coastal erosion project (Coastal Change from Space), which GSI is a partner will extensively look at some of these issues over the next two years (2019-2021). This project will provide an intertidal extent model and shoreline extraction tools, will</p>	<p>Noted.</p> <p>Reference to this data, modelling and the Coastal Change for Space research project will be included in the SEA ER. Additional text relating to flood resilience and coastal flooding was included in the final CCAP. See section Flood Resilience Section.</p>

Consultee	Comments on the Environmental Report	SEA Response
	<p>monitor sediment change in the near shore using primarily satellite derived bathymetry, and quantify backshore to foreshore sediment volumetric change over the last 20 years for targeted areas.</p>	
<p><b>Abiola Bamijoko-Okungbaye and Dr. Dimitrios Koukoularis</b> <b>HappyMinds Foundation</b></p>	<p>Climate change is currently happening, fact that we have to accept willy-nilly. A pre-planned resources can be a boon to societies and nations; however, the repercussion of not putting systems in place can be catastrophic. As we are putting plans in place, the research about the impact of climate change on our mental health and mental health-care infrastructures of our communities has been neglected. This proposal seeks to explore how we can improve the current Dublin City Council framework pertaining the mental health care of the local community in relation to climate changes.</p> <p>SEA Comment: The goal is to incorporate the findings of the mental health research in relation to climate change to our local Dublin action plan.</p>	<p>The SEA ER will as part of its expanded discussion on health and climate change include the specific issue of mental health and reference this source.</p>
<p><b>Oonagh Duggan</b> <b>BirdWatch Ireland</b></p>	<p>5.0 Biodiversity Adaptation to Climate Change Ireland's draft Biodiversity Sectoral Climate Change Adaptation Plan<sup>8</sup> which is subject to public consultation until April 17 2019 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'. We would encourage that the local authority or CARO would review the final national biodiversity action plan when it is completed to ensure coherence between plans for the Greater Dublin Area with the national biodiversity adaptation plan.</p>	<p>Noted, the SEA ER chapters Three will reference the draft Biodiversity Sectoral Climate Change Adaptation Plan along with any other required updates.</p> <p>Chapter 4 of the SEA ER will restate this finding and highlight same as a key issue and challenge.</p>

Consultee	Comments on the Environmental Report	SEA Response
	<p>6.0 Waterbirds and Sea Level Rise</p> <p>In 2013 BirdWatch Ireland published a report on the Impacts of Sea-level Rise on the Birds and Biodiversity of Key Coastal Wetlands<sup>9</sup>. The report assessed the level of risk posed to each of 52 waterbird species by increasing sealevels such that those risks are:</p> <ul style="list-style-type: none"> <li>o high for species with wholly coastal species distributions and which rely on intertidal habitats (such as Shelduck <i>Tadorna Knot Calidris canutus</i> and Sanderling <i>Calidris alba</i>), to medium for species as above but that can feed in alternative locations, such as on grasslands (Light-bellied Brent Goose <i>Branta bernicla hrota</i>, Oystercatcher <i>Haematopus ostralegus</i> and Black-tailed Godwit <i>Limosa limosa</i>) and for those with predominantly coastal distributions but which are localised in Ireland (Greenland White-fronted Goose <i>Anser albifrons flavirostris</i> and Bewick's Swan <i>Cygnus columbianus bewickii</i>), and too low for other waterbirds whose distributions are not restricted to the coast (e.g. Teal <i>Anas crecca</i>, Golden Plover <i>Pluvialis apricaria</i> and Lapwing <i>Vanellus vanellus</i>) or which occur predominantly in deeper water (e.g. Red-throated Diver <i>Gavia stellata</i>, Great Crested Grebe <i>Podiceps cristatus</i>, Cormorant <i>Phalacrocorax carbo</i> and Common Scoter <i>Melanitta nigra</i>)</li> </ul> <p>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 wetlands.</p> <p>In relation to waterbirds which frequent coastal sites BirdWatch Ireland recommends the following in the context of this Climate Action Plan:</p> <ol style="list-style-type: none"> <li>1. A thorough review of coastal sites that are of importance to coastal waterbirds is required, with particular emphasis on the SPA/ Natura 2000 network. The Office of Public Works is already some way towards modelling likely change and identifying vulnerable sections of coast, and such information once available is essential to this review. This review should: <ul style="list-style-type: none"> <li>a. Set out to quantify the impact of sea-level rise on coastal birds and their habitats.</li> </ul> </li> </ol>	<p>Noted.</p> <p>These comments will be included in the final SEA ER.</p> <p>The mitigation measure proposed in relation to retrofitting of housing and swifts is recommended for inclusion in the CCAP. This is included in the Final CCAP.</p> <p>Additional actions were also included in the Final CCAP such as:</p> <p>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</p> <p>Action 21: Provide data to RAMSAR Committee for Ireland on wetlands in Dublin City</p>

Consultee	Comments on the Environmental Report	SEA Response
	<p>b. Identify sections of the (national) coastline that are used by significant numbers of coastal waterbirds (high and medium-risk especially) and explore/promote managed realignment to minimise impacts of sea-level rise over time.</p> <p>2. 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<sup>10</sup> to result in some sites being at greater risk or more vulnerable to biodiversity loss than others. There is therefore 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 sea-level rise in the future.</p> <p>3. In addition, the greatest of efforts must be made to reduce the existing pressures and threats to waterbirds within the control of Dublin City Council including development, pollution, disturbance issues caused by dogs off leash on beaches and in the coastal environment and disturbance from people and recreational activities in sensitive locations.</p> <p>4. Internationally important migratory species such as Brent Geese can utilise the playing pitches including those of school grounds to forage when eel grass supplies have reduced at coastal sites. These areas are hugely important within a climate change adaptation scenario for Brent in the future and need to be secured.</p> <p>7.0 Breeding river birds</p> <p>Dublin's rivers and associated habitats are known to contain breeding Annex 1 Kingfisher, Dipper, Grey Wagtail, and Sand Martin. In order to protect nest sites and to provide adaptation solutions under a changing climate but also within the context of any flood mitigation measures, BirdWatch Ireland recommends that further survey work is undertaken to determine where these birds are breeding so as to conserve and improve breeding sites and also to prepare an evidence-based report on appropriate adaptation measures for these important species. Ensuring that river ecosystems are healthy and support fish and insect populations stocks is also critical as these are food sources for these bird species.</p>	

Consultee	Comments on the Environmental Report	SEA Response
	<p>8.0 Breeding Swifts</p> <p>Swifts breed in buildings in Dublin city and can be heard ‘screaming’ through several neighbourhoods of the city. Dublin City Council has already done great work to help with Swift conservation within the city. Within a climate change context, BirdWatch Ireland is concerned that with the potential for deep-retrofit, energy-saving projects that some Swift breeding sites may be lost due to construction work. It is really important that Swift breeding sites are investigated in Dublin and that any works to buildings with known breeding sites include actions such as insertion of ‘Swift bricks’ to provide alternative nesting sites for them. All new builds or deep retrofit programmes should also include Swift bricks in those projects. BirdWatch Ireland’s publication Saving Swifts is due out in 2019 and will help inform the conservation of Swifts in Ireland."</p>	
	<p>9.1 The Natura Impact Report lists that the NIR for the East Midlands Regional Spatial and Economic Strategy (RSES) has been concluded and that there are no significant adverse impacts on the European sites in this area. However, the RSES has been reopened for public consultation due to material developments which alter the original plan distributed for consultation. Further, these actions have been subject to Article 6.3 assessment, but the final plan has not been agreed.</p> <p>It is premature to state that as the NIR does that there are no impacts as the plan is not finalised since it is not clear if mitigation actions within the NIR will be incorporated into the final plan.</p>	<p>AA:</p> <p>The material amendments and reopening of the RSES is noted, the consultation stage has now closed; its status will be assessed as part of the updating to the CCAP, NIS and SEA ER.</p> <p>The Mitigation Actions within the NIS and SEA ER will be incorporated into the final plan.</p>
	<p>9.2 There is no mention of the requirements of Article 4(4) of the Birds Directive the second sentence of which states ‘Outside these protection areas, Member States shall also strive to avoid pollution or deterioration of habitats’. This is reaffirmed in Article 27 (4)(b) the European Communities Birds and Habitats Regulations (2011). In 2007 the European Court of Justice ruled against Ireland in C-418/0411 ‘The Birds Case’ for various breaches of the Birds and Habitats Directives including on Article 4 (4) which</p>	<p>Noted, this will be included in the SEA ER and the NIS.</p>

Consultee	Comments on the Environmental Report	SEA Response
	<p>are still being addressed by the State(see Programme of Measures to comply with the ECJ Ruling)12.</p> <p>There is no reference to the requirement that local authorities must strive to avoid the deterioration of the habitats of Annex 1 bird species found outside of European sites. In addition, it is important to recall that 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. All efforts must be made to enforce the regulations to support birds in the wider countryside.</p>	
	<p>9.3 BirdWatch Ireland would like clarification on the statement in the NIR that there will be no significant adverse affects on the European sites when it is unclear whether the suggestions in Table 7.2 will be incorporated into the final plan. This element of doubt means that NIS is open to challenge. The suggested text is NOT in the draft climate action plan submitted for consultation. We would appreciate clarification of this.</p>	<p>Noted, for clarification the mitigation measures in Table 7.2 will be included in the final plan.</p>
<b>Laura Howard</b>	<p>I note the duplication of listed actions in the SEA and the Draft plan, with two anomalies., 169 actions in the latter, and 167 in the former.</p>	<p>Noted, this will be clarified prior to final plan and SEA.</p>
<b>Thomas Cummins</b>	<p>Dublin's rivers retain industrial water-power infrastructure in the form of weirs, mill-races, and supports for sluice gates. There is potential for small-scale electricity generation making use of the fall of water, retrofitted into this heritage infrastructure. This proposal is for developing an engineering appraisal approach for river stretches, to assess the potential for fitting turbine resources, making use of and modifying water-management structures, designing for multiple values especially fish movement, providing design packages, providing for electricity transmission and connectivity, and facilitating the investment sources to implement the designs.</p> <p>As a plan, in the sense of the SEA Directive, strategic environmental assessment is required for this approach. Installations for hydroelectric energy production require environmental impact assessment. Consideration would be given to the scale and potential impact of the project, as well as the aggregate effect of multiple installations,</p>	<p>Noted.</p>

Consultee	Comments on the Environmental Report	SEA Response
	and especially so if combined with restructuring of fish habitats, indicating a need for appropriate assessment under the Habitats Directive in most cases. Scoping would be necessary in each case.	
<b>Alice Bentley</b>	Important in urban and suburban areas as well as the wilder places these are often conducted in. Soil health!	Role and function of soil is included in Chapter 4 of the SEA ER as well as a map showing carbon sequestration functions of soil at Regional level.
<b>John Derwin</b>	Most climate change initiatives either involve engineering or nature based solutions. Enhancing natural coastal habitats, floodplains and uplands are all positive environmental impacts which would improve the natural environment and so pass SEA and AA requirements. Engineering solution should only be utilised where a damaging activity needs to be removed..	Noted.
<b>Mary Mulvaney</b>	I haven't seen anything on Air Quality and Water Quality monitoring? They are crucial measures of the health of our environment.	Please see Chapter 4 of the SEA ER. Impacts for these parameters are also included in Chapter 7 of the SEA ER.
<b>Seaneen Sullivan</b>	Most climate change initiatives either involve engineering or nature based solutions. Enhancing natural coastal habitats, floodplains and uplands are all positive	Noted.

### 3.3 SEA and Submissions Received

As the Chief Executive was preparing responses and recommendations in relation to submissions received from the public, prescribed bodies including Environmental Authorities on the Draft CCAP, the SEA provided a commentary on these emerging recommendations.

Commentary from the SEA (and AA) in terms of the recommendations of the Chief Executive, can be found in the Chief Executive's Report on Submissions Received (May 2019).

## 4 Consideration of Alternatives

### 4.1 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 CCAP, the toolkit included in Developing and Assessing Alternatives in Strategic Environmental Assessment Good Practice Guidance (EPA 2015) was utilised.

### 4.2 Alternative Scenarios for Dublin City CCAP 2019-2024

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 CO<sub>2</sub> 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 Alternatives<sup>1</sup>:

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<sup>1</sup> Adapted from Figure 4.3 Developing and Assessing Alternatives in the Strategic Environmental Assessment Process (EPA, 2015).

#### 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, 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 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?

Therefore, the Alternatives considered are as follows:

**TABLE 5 ALTERNATIVES CONSIDERED**

	<p><b>Why</b> 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)?</p>	<p><b>What</b> <b>What?</b> 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?</p>	<p><b>Where</b> <b>Where?</b> 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?</p>	<p><b>When</b> <b>When?</b> 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?</p>
<p><b>Alternative 1: Do-Nothing (rely CDP policies and objectives to address and adapt to climate change)</b></p>	<p>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.</p>	<p>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</p>	<p>This would include the city of Dublin</p>	<p>This would cover the timeframe of the current CDP up to 2022</p>
<p><b>Alternative 2: Prioritise largest greenhouse gas emission sectors – Energy and Transport</b></p>	<p>This would require the preparation of an action plan that would concentrate on energy and transport for Fingal as a means to address and respond to climate change</p>	<p>It would prioritise measures that would reduce energy emissions, promote renewable energy and sustainable transport projects</p>	<p>This would include the city of Dublin</p>	<p>This would likely reflect the timeframe of the CDP given its landuse implications.</p>

	<p><b>Why</b> 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)?</p>	<p><b>What</b> <b>What?</b> 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?</p>	<p><b>Where</b> <b>Where?</b> 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?</p>	<p><b>When</b> <b>When?</b> 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?</p>
<p><b>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).</b></p>	<p>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</p>	<p>This would include a suite of measures that would aim to bring co-benefits where possible and rely on nature based solutions where possible</p>	<p>This would be tailored to Dublin City but prepared as part of a broader regional approach to climate change</p>	<p>This would extend to 2024 and include a detailed monitoring regime to allow for annual reporting and monitoring of actions.</p>

	<b>Why</b> 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)?	<b>What</b> <b>What?</b> 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?	<b>Where</b> <b>Where?</b> 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?	<b>When</b> <b>When?</b> 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?

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.

## **5 Monitoring**

### **5.1 Introduction**

The targets and indicators are derived from the Strategic Environmental Objectives (SEOs) discussed in Chapter Five. The target underpins the objective whilst the indicators are used to track the progress of the objective and targets in terms of monitoring of impacts. The monitoring programme will consist of an assessment of the relevant indicators and targets against the data relating to each environmental component. Similarly, monitoring will be carried out frequently to ensure that any changes to the environment can be identified.

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 6 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)
Biodiversity, Flora and Fauna	To protect and where appropriate enhance the diversity of habitats, species, ecosystems and geological features.	Maintain the favourable conservation status of all habitats and species which are within designated sites protected under national and international legislation and also	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	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 <sub>x</sub> ) and Particulate matter (PM <sub>10</sub> ) not breach regulation limits	Every 2 years	Roads and Traffic – Noise and Air Section
Air 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 <sub>2</sub> / year	Every 2 years	Energy Division

Environmental Receptor	Environmental Protection Objective	Target	Indicator	Frequency of Reporting	Department Responsible
	and maintain acoustic quality.	Increase energy efficiency (reduce energy waste) from renewable energy sources in line with the National Energy Efficiency Action Plan	Number of objectives implemented from Dublin City Energy Strategy	Every 2 years	Energy Division
			Number of permitted developments that include district heating	Every 2 years	Energy Division
			Number of permitted developments incorporating solar renewables	Every 2 years	Energy Division
			Number of (social) housing units, public buildings and community centres connected to district 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 infrastructure to meet the needs of the city's population	Develop public transport, cycleways and road infrastructure to facilitate sustainable growth and travel patterns	Percentage change in commuting modal shift to sustainable travel modes	Every 2 years	Environment and Transportation
		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	To protect and where appropriate enhance the character, diversity and qualities of Dublin city's cultural, including architectural and archaeological, heritage	No loss or adverse impact on the fabric or setting of monuments on the Record of Monuments	Number of planning applications with archaeological conditions that were complied with	Every 2 years	(PPDD)
		No loss of or adverse impact on the architectural heritage value or setting of protected structures and monuments	Loss of, or adverse impact on protected structures, architectural conservation areas or NIAH structures	Every 2 years	(PPDD) City Architects – Conservation
			Number of archaeological sites with archaeological 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
<i>Inter-relationships</i>	<p><i>Maintain and improve the health of people, ecosystems and natural processes</i></p> <p><i>Actively seek to integrate opportunities for environmental enhancement during adaptation to climate change</i></p>	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	<p><b><i>Blue and Green Infrastructure measures implemented over lifetime of plan</i></b></p> <p>Number of Blue infrastructure features included in development</p>		