Comhairle Contae
Átha Cliath Theas
South Dublin County Council

South Dublin County Council

DRAFT CLIMATE ACTION PLAN

2024
—
2029

This Plan has been prepared by South Dublin County Council in partnership with the other Dublin local authorities, Codema – Dublin's Energy Agency and the Dublin Climate Action Regional Office (CARO).

Codema provides a wide range of energy and climate mitigation services to the four Dublin local authorities and other stakeholders in the region, supporting each local authority in leading and influencing the low-carbon transition. Codema's mission is to accelerate Dublin's low-carbon transition towards 2030 and 2050 through innovative, local-level energy and climate change research, planning, engagement and project delivery, in order to mitigate the effects of climate change and improve the lives of citizens.

The Climate Action Regional Offices (CAROs) were established by Government in 2018 to mandate and co-ordinate engagement across the varying levels of government and help build on experience and expertise in the area of climate action. The four regional CARO offices drive climate action at both regional and local levels, working with Local Authorities in their area.

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FOREWORD

MESSAGE FROM THE MAYOR OF SOUTH DUBLIN COUNTY COUNCIL, CLLR ALAN EDGE

As the effects of climate change are felt ever more acutely around the globe, it is vital that South Dublin County Council make clear our intentions to deliver real societal change in tackling climate change.

As a local authority, the Council is well positioned to demonstrate leadership, innovation and commitment on tackling the issues and impacts of climate change.

I want to welcome the publication of the South Dublin County Council Draft Climate Action Plan 2024-2029. The plan presents a picture of what we can do locally to deliver climate action in light of the series of global, European and national agreements and policies.

The SDCC Climate Action Plan sets out ambitious targets and 121 actions under six Action Areas which will deliver real and lasting change.

The inclusion of a new sixth action area, Community Engagement, demonstrates the local authority's commitment to working with communities in South Dublin.

Innovation will be required to achieve our targets and the inclusion of a Decarbonizing Zone in Clondalkin will see the local authority work with stakeholders from the community to deliver a range of climate mitigation, adaptation and biodiversity measures that will address local low carbon energy and greenhouse gas emissions.

I would like to thank members of the Environment, Public Realm and Climate Change SPC and the Climate Team for their work in delivering this plan and look forward to working with the four Dublin Local Authorities, Codema and the Dublin Climate Action Regional Office (CARO) into the future.

MESSAGE FROM CHIEF EXECUTIVE COLM WARD

In 2019, South Dublin County Council was proud to be one of the first local authorities in Ireland to develop a climate change action plan that included actions to reduce our contribution to climate change alongside further measures to help us adapt to the ever-increasing risks and impacts it presents. Since then, our changing climate continues to be the forefront of challenges we face as a society. We remain committed to providing the required leadership and ambition, both through improving the way we operate and working closely with our communities and other key partners, to effect positive change.

Since the inception of our original plan, good progress has been made with our work setting us on a positive course towards reaching the 51% target reduction in our emissions by 2030. Innovative projects such as the Tallaght District Heating Scheme have been delivered and retrofitting of public lighting and buildings have offered further energy savings. Active travel schemes continue to advance throughout the county while various flood protection schemes are being delivered to protect buildings and infrastructure. A dedicated climate innovation fund has also been established to assist in climate action through our many projects and operations.

Our new Climate Action Plan will build on this momentum with increased ambition in line with national targets. It also formalises working with local communities on climate action, with the addition of a new Action Area of Community Engagement. The establishment of the Clondalkin Decarbonising Zone, identifying a spatial area for investigating possible local decarbonisation and other climate action initiatives, provides for community-led innovation on our journey to 2030.

We look forward to the contributions this critical plan will make to the development of South Dublin County over the next five years and progress reports and updates on its implementation will continue through our now well-established climate governance and reporting structures.

EXECUTIVE SUMMARY

Responding to the continuing challenges presented by climate change, the Draft Climate Action Plan 2024-2029 lays out South Dublin County Council's (SDCC) course of action over the five-year lifetime of the plan, with these next five years being vital for meaningful climate action. This local response speaks to International, European and National efforts to deliver on climate ambition and action, in the context of rapidly evolving strategies and plans at all levels.

The Draft Climate Action Plan is cognisant of the ever-increasing challenges posed to South Dublin by climate change and the requirement for the Council to continue to lead on reducing our greenhouse (GHG) emissions, while planning for new and future climate related risks and impacts. This plan aims to build on our experience of delivering the previous Climate Change Action Plan (CCAP) 2019-2024, which established a strong foundation of climate action in South Dublin and enables informed, ambitious actions to be developed for this plan.

The Draft Climate Action Plan 2024-2029 is centred around actions that collectively address the four key targets of this plan, which are framed by the Climate Action and Low Carbon Development (Amendment) Act 2021 and the National Climate Action Plan 2023:

- *50% improvement in the Council's energy efficiency by 2030;*
- *51% reduction in the Council's greenhouse gas (GHG) emissions by 2030;*
- *To make Dublin a climate resilient region, by reducing the impacts of future climate change-related events; and*
- *To actively engage and inform our communities on climate action.*

The Draft Climate Action Plan takes an evidence-based approach to climate action, by observing the broader context of climate action policy, and developing a baseline emissions profile for the Council and for the wider South Dublin area. This robust approach included examining the Council's operational GHG emissions, energy efficiency performance, and profiling the GHG emissions of the entire county. The GHG emissions, shows that the Council was responsible for 8,324 tonnes of CO2 (tCO_2) in 2021, with the emissions generated predominately across public lighting, buildings and facilities and our fleet. Overall, the Council's GHG emissions have reduced by 31% since the 2018 baseline; this is mainly due to reductions from electricity sources, but non-electricity related emissions have reduced by 6% since the baseline was established. In terms of energy use, the Council's final energy consumption was 27.3 Gigawatt hours (GWh) in 2021. Overall, the Council has achieved a 42% improvement in energy efficiency from 2009 to 2021.

By undertaking a comprehensive climate change risk assessment, the potential future climate risks are also presented in this draft plan, as is the Council's response planning to major emergencies, such as weather-related impacts. The climate change risk assessment confirms South Dublin's changing climate, outlines the relative frequency of hazards such as windstorms, river flooding, flooding from rainfall (pluvial), heatwaves, drought, cold spells, and heavy snowfall. It also shows how unchecked climate change could impact South Dublin up to 2050.

The specific climate actions for SDCC have been generated in response to the targets and informed by the baseline emissions profile and climate change risk assessment. The actions are set out in six Action Areas - Energy & Buildings; Transport; Flood Resilience; Nature-Based Solutions; Circular Economy & Resource Management; and Community Engagement. The actions have many additional benefits, including health and wellbeing, social, environmental, and economic benefits, which are identified throughout the Plan. The Action Areas also include a set of cross cutting governance actions which address the need for the continuation of climate action mainstreaming across the Council's service delivery.

To achieve the targets for the Council's GHG emissions and energy usage, there are several essential areas to focus on – continuation of the public lighting retrofit program, decarbonisation of our buildings with high energy demand, and decarbonisation of at least 31% of our fleet. Other notable actions are around the continued delivery of the Cycle South Dublin Programme, the roll out of the Dublin Region Electric Vehicle Charging Strategy, the continued retrofit of the Council's social housing stock, the development of the City Edge Project, and building on the successful commissioning of the Tallaght District Heating Scheme.

Flood defence schemes and addressing heat in urban areas speak to preparing ourselves for climate impacts by making South Dublin more climate resilient, while the inclusion of Community Engagement as a new Action

Area, reflects the need for all citizens and communities in South Dublin to be part of the plan to address climate action and to be supported by SDCC. This is critical, given that an estimated 99.3% of the emissions in South Dublin are outside of SDCC's direct control.

This plan also makes provision for South Dublin's first Decarbonising Zone (DZ) – to be established in an area in Clondalkin. The DZ provides an opportunity for SDCC and the local community to work together to reduce the amount of carbon produced in the area, though trialling the implementation of a range of potentially innovative mitigation and adaptation measures, while seeking to maximise the possible associated benefits for the area.

Building on the structures and reporting mechanisms created during the delivery of the Council's previous Climate Change Action Plan, our dedicated Climate Action Team will continue to monitor progress on each action throughout the lifetime of the plan and work with the seven Action Teams, overseen by the Climate Action Steering Group. National reporting will highlight the contribution the Council will make towards the national climate objective.

We will, through this plan, continue to work in collaboration with the Dublin Local Authorities, the Dublin Metropolitan Climate Action Regional Office, Codema – Dublin's energy agency, and other neighbouring local authorities to continue to embed and make climate action a priority in South Dublin.

OVERVIEW OF SOUTH DUBLIN

Green Infrastructure: **141.5km²**

Libraries: **8**

Community Centres: **36**

Schools: **149**

Regional Parks: **4**

301,075 POPULATION

100,364 HOUSEHOLDS

223 km² ADMINISTRATIVE FOOTPRINT

OUR VISION

Working together to ensure that South Dublin is a place with a strong focus on local living, sustainable mobility, and quality of life for all, with leadership and initiative from South Dublin County Council to develop a low carbon and climate resilient County by 2050.

1. INTRODUCTION

LET'S TALK ABOUT CLIMATE CHANGE

Climate change is increasingly understood to be the most critical, long-term global challenge of our time, with its impacts continuing to be felt both worldwide and at home. There is overwhelming evidence (such as that outlined in the Intergovernmental Panel on Climate Change (IPCC's) Working Group I Sixth Assessment Report[1]), that our climate has changed since the pre-industrial era (roughly 1850-1900) and that the release of greenhouse gas (GHG) emissions through human activities are the principal cause of that change. The result of human activities is that in the period between 2011 and 2020, global surface temperatures reached 1.1°C above the 1850-1900 average.

Ireland's climate echoes the global situation, seeing similar temperature increases. Figure 1.1 below compares Ireland's temperature increase to the global temperature rise since 1900 and shows that our situation in Ireland echoes the global situation. As a result, our climate is currently experiencing both temperature and rainfall extremes.

2022 was confirmed by Met Éireann as the warmest year since records began. The temperature was above the long-term expected average for the 12th consecutive year and the second highest temperature ever of 33°C was recorded at the Phoenix Park in Dublin during the summer months[2].

WHY IS A 1.1 °C INCREASE IMPORTANT TO OUR CLIMATE?

While weather is what we experience over a short period of time, for example days and hours, climate is the average pattern of weather you might expect for a particular location, observed over decades. A change of 1.1 °C is significant because it takes a huge amount of warming to change this pattern.

1.1 °C represents the average temperature increase across the entire planet, with land warming faster than the oceans, and certain regions warming faster than others. And as we have seen, an increase of 1.1 °C is impacting all life on earth.
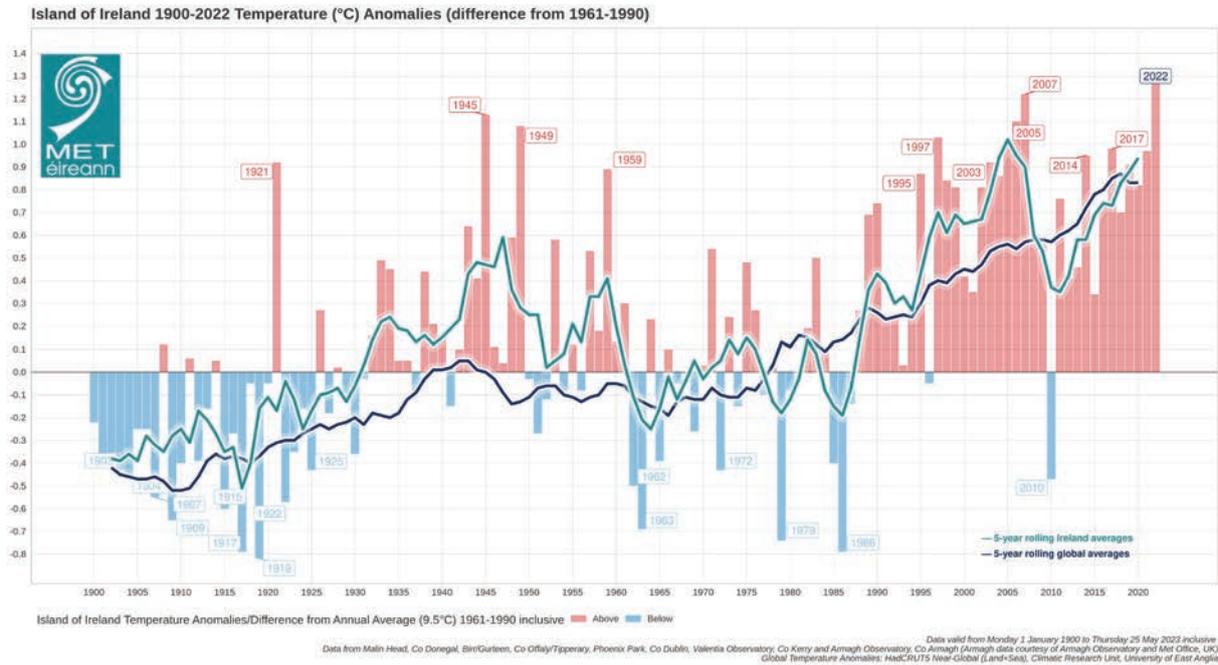
Island of Ireland 1900-2022 Temperature (°C) Anomalies (difference from 1961-1990)

Island of Ireland Temperature Anomalies/Difference from Annual Average (9.5°C) 1961-1990 inclusive ■ Above ■ Below

Data valid from Monday 1 January 1900 to Thursday 25 May 2023 inclusive
Data from Malin Head, Co Donegal, Birr/Gurteen, Co Offaly/Tipperary, Phoenix Park, Co Dublin, Valentia Observatory, Co Kerry and Armagh Observatory, Co Armagh (Armagh data courtesy of Armagh Observatory and Met Office, UK)
Global Temperature Anomalies: HadCRUT5 Near-Global (Land+Sea), Climatic Research Unit, University of East Anglia

Figure 1.1: Island of Ireland 1900-2022 Temperature (°C) Anomalies (difference from 1961-1990) (Source: Met Éireann [2])

Our changing climate is also affecting rainfall and the 2022 rainfall observations were below the long-term average across most stations. However, extremes in 2022 were felt in each of the seasons, resulting in a drier Summer and Spring, and a wetter Autumn and Winter overall.

A warming climate is also causing a rise in sea level, through the melting of sea ice and an increase in the volume of water due to heating (thermal expansion), both resulting from a warming ocean. Global mean sea level has been consistently rising since 1901, with a 20cm increase between 1901 and 2018. Ireland has so far seen a similar rise in sea level with an average of 2-3mm increases per year.

The Línte na Farraige project used visual light installations, powered by solar panels and renewable battery packs (by Finish artists Timo Aho and Pekka Niittyvirta) to indicate the projected rise in sea levels from future storm surges. Shown here is the installation in Dún Laoghaire.

WHY DOES IT MATTER?

As established, Ireland is already suffering from adverse climate impacts. Recent extreme weather events have highlighted the vulnerability of individuals, businesses, communities, infrastructure and the environment to climate change, emphasising the need for urgent action across all sectors of society.
Existing social, economic and environmental challenges are often compounded by climate change, which in turn is increasing our vulnerability to the changing climate and new extremes.

Based on observed changes to climate and its impacts, Met Éireann, the Environmental Protection Agency (EPA), and other climate scientists are able to make robust projections for future climate patterns both in Ireland and globally. For example, the EPA, Marine Institute, and Met Éireann published 'The Climate Status Report for Ireland 2020'[3] in July 2021. Its projections indicate that the climate trends observed over the last century will continue and intensify over the coming decades. Future climate projections for Ireland can be summarised as shown in the figure below. For more detailed projections for South Dublin please refer to the 'Climate Change Risk Assessment' in this Plan.

Storms such as Arwen and Barra in 2021 most notably, left 59,000 homes and businesses without power.
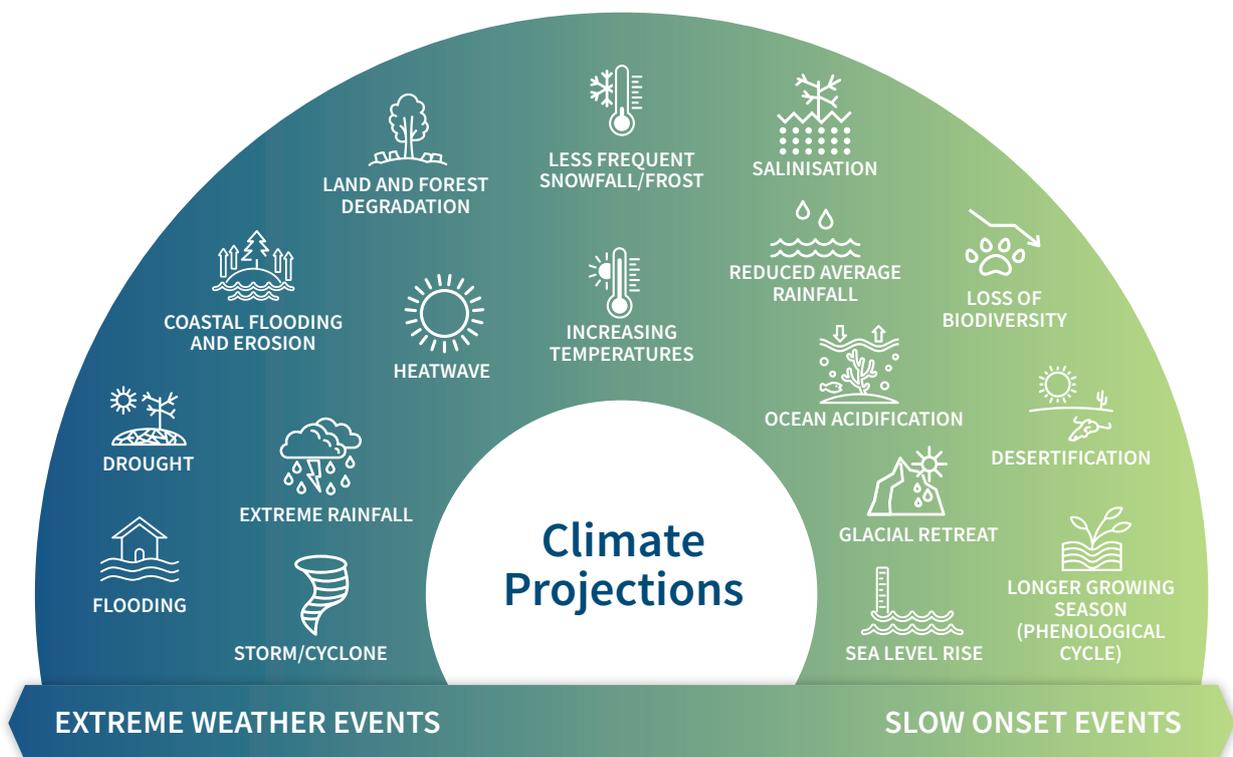
(National Climate Action Plan, 2023). [10]

Figure 1.2: Future Possible Climate Projections for Ireland
(Source :Based on: © GIZ /Global Programme on Risk Assessment and Management for Adaptation to Climate Change (Loss and Damage))

The state of Ireland's climate today, and how it may look in the future, can be brought together in one simple conclusion. Ireland's climate has changed relative to the 1900's - it has undoubtedly warmed in line with global temperature increases, bringing about an array of impacts that are associated with a changing climate and more extreme weather events.

UNDERSTANDING GREENHOUSE GAS (GHG) EMISSIONS

The systems that we interact with everyday, our homes and buildings, the electricity network, our modes of transport, our food and waste systems, and the systems that produce the goods and services that we buy have all been built on practices that release greenhouse gas (GHG) emissions when we use them.

Greenhouse gas emissions - carbon dioxide, methane, nitrous oxide, and fluorinated gases - are invisible gases that, when released into our atmosphere, trap heat that is escaping from our planet into space, acting like an extra layer of clothing or a blanket. This has warmed our planet by 1.1°C since 1850-1900.

HOW ARE GREENHOUSE GASES REMOVED FROM THE ATMOSPHERE?

The key greenhouse gases all have natural cycles, meaning they are capable of being naturally absorbed every year by various 'sinks' such as the oceans, soils, trees, vegetation, and wetlands/bogs.

However, human activity has put far more greenhouse gases into the atmosphere than is capable of being absorbed naturally.

WHAT ARE WE DOING?
LOCAL AUTHORITY CLIMATE ACTION PLANNING

South Dublin County Council (SDCC) and other local authorities across Ireland are already well positioned at the forefront of climate action. SDCC published a Climate Change Action Plan (CCAP) in 2019, comprising both mitigation and adaptation actions, and has been working on delivering the actions agreed under this 2019 to 2024 plan.

The Climate Action Plan for 2024 to 2029 will build on the work achieved by the previous plan and will demonstrate the increased ambition of South Dublin County Council to play a significant role in delivering adaptation and mitigation measures at local and community levels (as explained in Figure 1.3 below). The Council and other local authorities are entrusted to put into operation measures that assist the country to meet its ambitious climate targets and the National Climate Objective, through local authority regulatory and strategic functions.

The Climate Action Plan is a key instrument that strengthens the links between both national and international climate policy and the delivery of effective climate action at local and community levels, through place-based climate action, as detailed in the following sections.
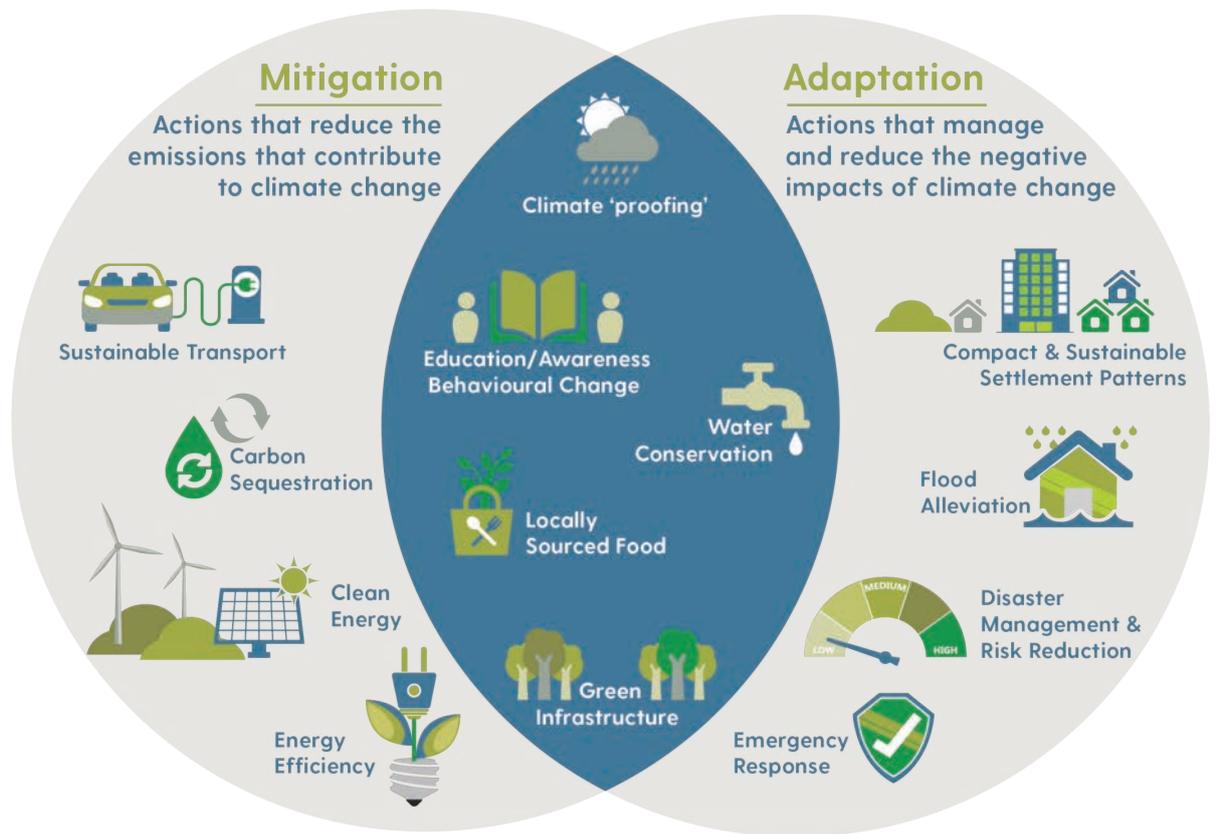
Climate Change Mitigation
Relates to changing how we live, move, consume and manufacture, so as to reduce and/or eliminate the production of harmful greenhouse gases; it also includes how we best use our land.

Climate Change Adaptation
Refers to dealing with the impacts of climate change and involves taking practical actions to manage risks, protect communities and strengthen the resilience of the economy (e.g., from flooding, sea level rise etc). *(Source: EPA.ie)*

Figure 1.3: Climate Action – Mitigation and Adaptation Actions (Source: Climate Action Regional Office)

CLIMATE POLICY CONTEXT

Climate action is driven by the scientific evidence of the human influence on climate change and it is given momentum by the legally binding international treaty on climate change, which sets the framework for ambitious and strengthened policy responses - the Paris Agreement of 2015. Consequently, this Climate Action Plan is set within a broader context of international, EU, national and sectoral climate policy, as represented in Figure 1.4 and outlined in detail below.
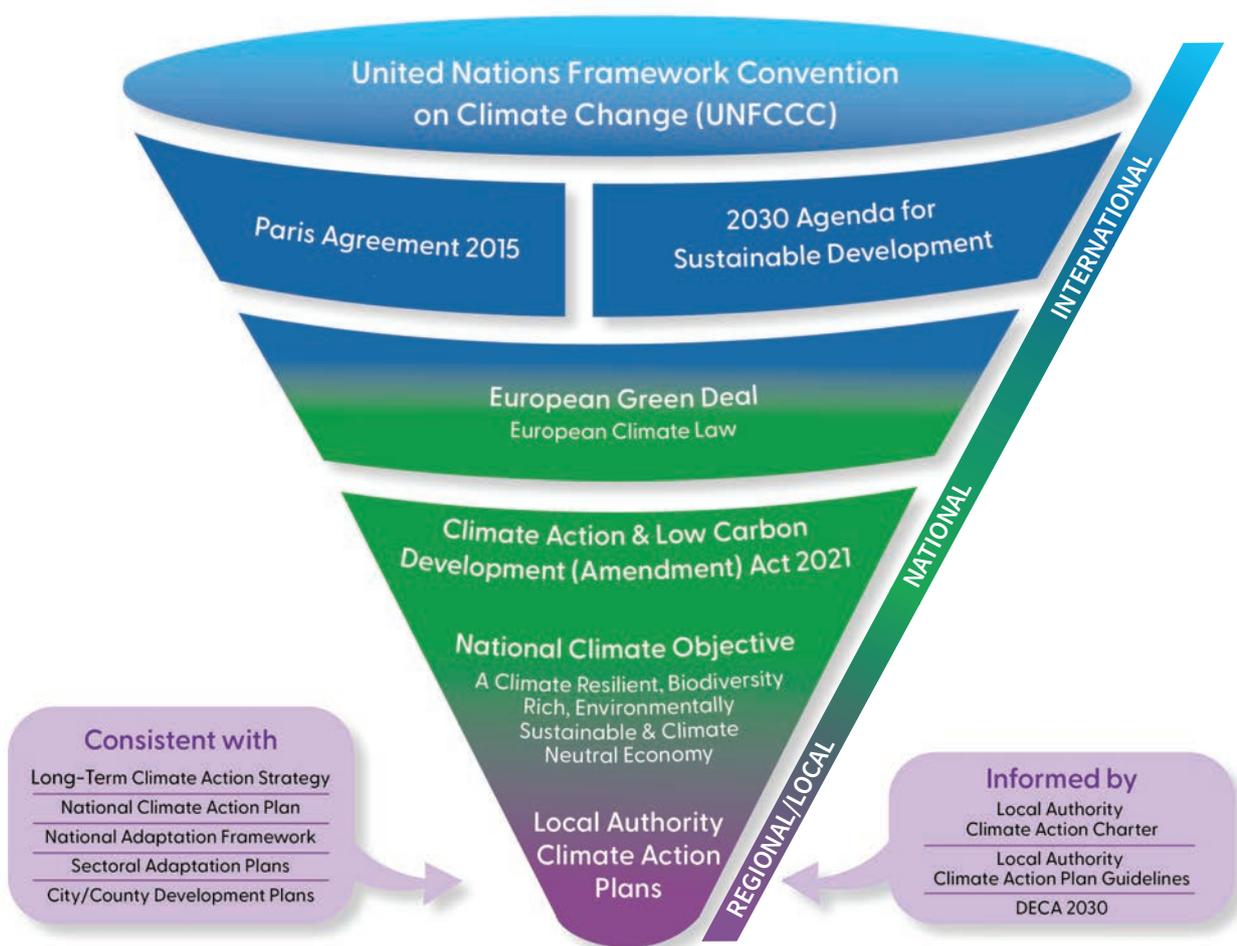

Figure 1.4: Legislation and Policy Context for the Climate Action Plan (Source: Climate Action Regional Offices)

INTERNATIONAL CLIMATE CHANGE POLICY

It has been recognised that successfully tackling climate change requires cooperation and ambition on an international level. Since the establishment of the **United Nations Framework Convention on Climate Change (UNFCCC)[4]** in 1994, countries have sought to build international cooperation to limit the increase in the average global temperature and deal with the impacts of climate change, that result from these temperature increases.

These efforts led to the signing of the **'Paris Agreement 2015'[5]** at the Conference of the Parties 21 (COP21). The Paris Agreement 2015 is a legally binding international treaty on climate change which was signed by all 196 member countries, including Ireland, and entered into force on 4th November 2016. Through two clearly defined goals the Paris Agreement strives for progressive and ambitious climate action over time to avoid dangerous climate change by:

  i.   Holding global average temperature increases to well below 2°C and pursuing efforts to limit the temperature increase to 1.5°C above pre-industrial levels; and

  ii. Increasing the ability to adapt to the adverse impacts of climate change and foster climate resilience.

Another International agreement closely linked with the Paris Agreement is the **'Transforming our World: 2030 Agenda for Sustainable Development'[6]** which was adopted by UN Member States in September 2015. At the Agenda's core are **17 Sustainable Development Goals (SDGs)**. These goals aim to "end poverty, protect the planet and improve the lives and prospects of everyone, everywhere." The 17 SDGs contain 169 targets to be achieved by 2030. In 2019, world leaders called for a 'decade of action' in order to achieve the Goals within this timeframe. This plan sets out the alignment between the Goals and the actions in this plan, as referenced in the Appendices to this plan.

Towards achieving greenhouse gas emission reductions as part of Paris Agreement commitments, the European Commission announced the '**European Green Deal'[7]** in December 2019, aimed at making Europe the first climate neutral continent. The Deal seeks to achieve no net emissions of greenhouse gases by 2050, to decouple economic growth from resource use, and to leave no one behind. The EU introduced a set of proposals to align the EU's climate, taxation, energy, and transport policies to support achieving this aim. The **European Climate Law[8]** made these targets legally binding, including achieving a reduction in net greenhouse gas emissions of at least 55% by 2030.

NATIONAL CLIMATE CHANGE POLICY IN IRELAND

Climate change policy in Ireland aims to reflect the ambition of the EU and that required to confront the challenges of climate change.

The **Climate Action & Low Carbon Development (Amendment) Act 2021**[9], enacted on 23 July 2021, requires the State to achieve by no later than 2050, the transition to a climate resilient, biodiversity rich, environmentally sustainable and climate neutral economy. This is also known as the National Climate Objective.

> **A climate neutral economy means (as stated in the Act) a sustainable economy and society where greenhouse gas emissions are balanced or exceeded by the removal of greenhouse gases.**

To achieve this Objective, the Minister for the Environment, Climate and Communications will regularly submit carbon budgets, sectoral emission ceilings, a National Climate Action Plan, a Long-Term Climate Action Strategy, and a National Adaptation Framework, for Government approval.

The first two carbon budgets, proposed by the Climate Change Advisory Council (CCAC), are set in order to achieve a 51% reduction in greenhouse gas emissions by the end of 2030, using 2018 as the baseline year.

Through these national measures, a suite of strategies to promote adaptation and mitigation measures, and robust oversight and reporting arrangements, climate policy is working to scale up efforts across all of society. This will deliver a step change on ambitious and transformative climate action to 2030 and beyond to 2050.

The **National Climate Action Plan 2023**[10], launched on 21st December 2022, is the second annual update to the States' Climate Action Plan 2019, and the first to be prepared under the Climate Action and Low Carbon Development (Amendment) Act 2021. It followed the introduction in 2022 of economy-wide carbon budgets and sectoral emission ceilings. Climate Action Plan 2023 (CAP23) sets out a roadmap to 2025 towards taking decisive action to halve emissions by 2030 and reach net zero, no later than by the end of 2050, as committed to in the Programme for Government.

Ireland published its first **National Adaptation Framework (NAF)**[11] in 2018. This framework set the context to ensure key sectors and local authorities can assess the risks and vulnerabilities of climate change, implement climate resilient actions, and ensure climate adaptation considerations are mainstreamed into national, regional and local policy making.

Ireland's current **Long-term Strategy on Greenhouse Gas Emissions Reduction**[12] sets out indicative pathways, beyond 2030, towards achieving carbon net zero for Ireland by 2050. The Strategy builds upon the decarbonisation pathways set by the carbon budgets, sectoral emissions ceilings and the National Climate Action Plan, to ensure coherent and effective climate policy. It is underpinned by analysis of transition options across each key sector of the economy. It provides a crucial link between Ireland's 2030 climate targets and the long-term goal set by Ireland's National Climate Objective and the European Climate Law.

Sectoral Climate Adaptation Plans[13] have been published across Government departments, in response to the National Adaptation Framework. The Plans address the following sectors: Agriculture, Forestry and Seafood, Biodiversity, Built and Archaeological Heritage, Transport Infrastructure, Electricity and Gas Networks, Communications Networks, Flood Risk Management, Water Quality and Water Services Infrastructure and Health. The Plan for each Sector identifies the key risks faced across the sector and the approach being taken to address these risks and build climate resilience for the future. They were developed applying a six-step adaptation planning process described in Sectoral Planning Guidelines for Climate Change Adaptation, published by the Department of the Environment, Climate and Communications.

The Local Authority Climate Action Charter[14] was signed by all local authorities in October 2019 and represents a commitment by all local authorities to scale up efforts and play a key role locally and nationally in delivering effective climate action. It tasks local authorities with providing robust leadership in advancing climate action, while adhering to the UN SDGs (in particular Goal 13 Climate Action) and reducing emissions from their own operations. In addition to collaborating or partnering with local enterprise, community groups, citizens as well as public, private, and educational sectors on climate action initiatives.

Delivering Effective Climate Action 2030 (DECA 2030)[15] is the local government strategy on climate action published in April 2021. The strategy represents an overarching sectoral commitment to ensuring a coherent approach to climate action across the administrative and political structures of all 31 local authorities. At a sectoral level, the strategy communicates a general intent through an envisaged leadership position, to engage the local authority network in effective climate action. Within the sector, the overall strategy represents a top-level consensus on the approach to climate action and a strong commitment to the prescribed leadership role. The strategy is a stated roadmap for local authorities in delivering the required decarbonisation and adaptation responses to climate change.

REGIONAL / LOCAL CLIMATE CHANGE POLICY

The Climate Action and Low Carbon Development (Amendment) Act 2021 requires each local authority to prepare and make a Climate Action Plan. This Plan is to set out the mitigation and adaptation measures to be adopted by the local authority for a period of 5 years. The Act requires the Plan to be in place within 12 months of a request from the Minister; by the 23rd of February 2023 in the case of this Plan.

Local Authority Climate Action Plans, in so far as is practicable, are to be consistent with the most recently approved national Climate Action Plan and National Adaptation Framework. They are also to have regard for the most recently approved Long Term Climate Action Strategy, Sectoral Adaptation Plans and any policies of the Minister or the Government on Climate Change.

Local authorities are required to, in respect to the content and preparation of a Local Authority Climate Action Plan, comply with Ministerial Guidelines, which were issued to the sector in March 2023[16].

The Plan provides a mechanism to help drive positive climate action and outcomes across the local authority and its administrative area, in a defined structure. It ensures alignment between on-the-ground actions and the high-level vision that the plan aspires to deliver, working with communities to build a vision for a climate neutral future. The Climate Action Plan is part of longer-term efforts that will require a sustained and planned response to support the delivery of the climate neutrality objective at local and community levels.

Dublin Climate Action Week 2022, organised by the Dublin local authorities.

WHAT IS NEXT FOR CLIMATE ACTION IN SOUTH DUBLIN?

SDCC has prepared this Draft Climate Action Plan (CAP) 2024-2029, to create a low carbon and climate resilient County, by delivering and promoting best practice climate action at the local level. As noted previously, the Plan is aligned to the Government's overall National Climate Objective to transition to a climate resilient, biodiversity rich, environmentally sustainable and climate neutral economy no later than the end of 2050.

The Climate Action Plan sets a clear pathway for the Council to:

- Actively translate national climate policy to local circumstances with the prioritisation and acceleration of evidence-based measures.

- Assist in the delivery of the climate neutrality objective at local and community levels.

- Identify and deliver a Decarbonising Zone (DZ) within the local authority area to act as a pilot or test for a range of climate mitigation, adaptation and biodiversity measures in a specifically defined area, through the identification of projects and outcomes that will assist in the delivery of the National Climate Objective.

South Dublin County Council maintains a strong commitment to mainstreaming climate action across

its own operations and functions, whilst also pursuing a leadership role on climate action in South Dublin. The Council will continue its efforts in rolling out ambitious climate action projects, drawing down available sources of funding, pursuing community and stakeholder engagement, all supported by a progressive policy framework. A key pillar of this will be the launch of the Community Climate Action Fund in South Dublin, a national programme of funding to support and empower the creation of low carbon, sustainable communities. In a changing climate, the aim is to become more resilient to all future possibilities. This will allow local communities to thrive and work towards real solutions that are meaningful, inclusive, fair and accessible for all.

South Dublin County Council works closely on climate action with the three other Dublin local authorities (Dublin City Council, Fingal County Council, and Dún Laoghaire Rathdown County Council) and is supported in the delivery of climate action by the Dublin Metropolitan Climate Action Regional Office (CARO) and Codema, the Dublin Energy Agency. CARO coordinates engagement across the varying levels of government and helps build on experience and expertise in the area of climate action. Codema provides a wide range of energy and climate mitigation services to the four Dublin local authorities and other stakeholders in the region, supporting each local authority in leading and influencing the low carbon transition.
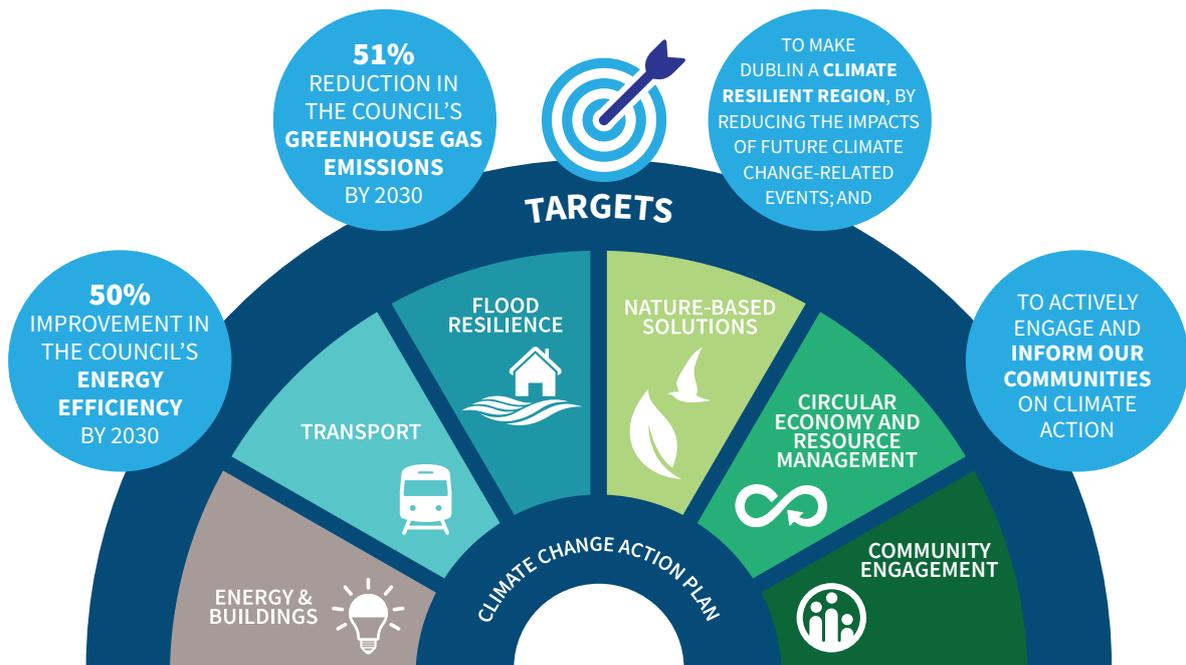

Figure 1.5: The Targets and Action Areas of this Climate Action Plan 2024-2029

The targets of this Plan are as follows:

- 50% improvement in the Council's energy efficiency by 2030;
- 51% 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; and
- To actively engage and inform our communities on climate action.

The targets of the Climate Action Plan are framed by the Climate Action and Low Carbon Development (Amendment) Act 2021 and the national Climate Action Plan 2023. This Plan includes a range of actions for which the Council is 'Fully Accountable'. As such, across its own buildings, operations, services and functions, the Council aims to achieve a 51% reduction in greenhouse gas emissions and a 50% energy efficiency improvement, by 2030.

The Plan is also outward focused and includes a range of actions for which the Council can 'Influence', 'Co-ordinate and Facilitate' and 'Advocate' for other sectors, in meeting their own climate and energy targets, thereby reflecting the 'National Climate Objective' and an all of society reduction in greenhouse gas emissions of 51% by 2030. Whilst it is acknowledged that there is no 'sectoral emission ceiling' for the local authority sector, the Plan aims to support other sectors and local communities in building resilience to the negative impacts of climate change and in tackling the causes of climate change. This is necessary to ensure that the environmental, social and economic benefits that can come with climate action can be fully realised (Figure 1.6).

The implementation of the Climate Action Plan also aims to facilitate a Just Transition across the County. A Just Transition means ensuring that the transition towards meeting the National Climate Objective happens in a way that leaves no one behind. This is also reiterated in the National Climate Action Plan 2023 [10], which states:

"Delivering a just transition is based on recognising the transformational level of change required to meet these targets and having a shared understanding that the transition is fair, and just, and that the costs are shared equitably. Our climate policies should, therefore, seek to protect the most vulnerable."

THE FOUR MAIN TARGETS OF THIS PLAN ARE:
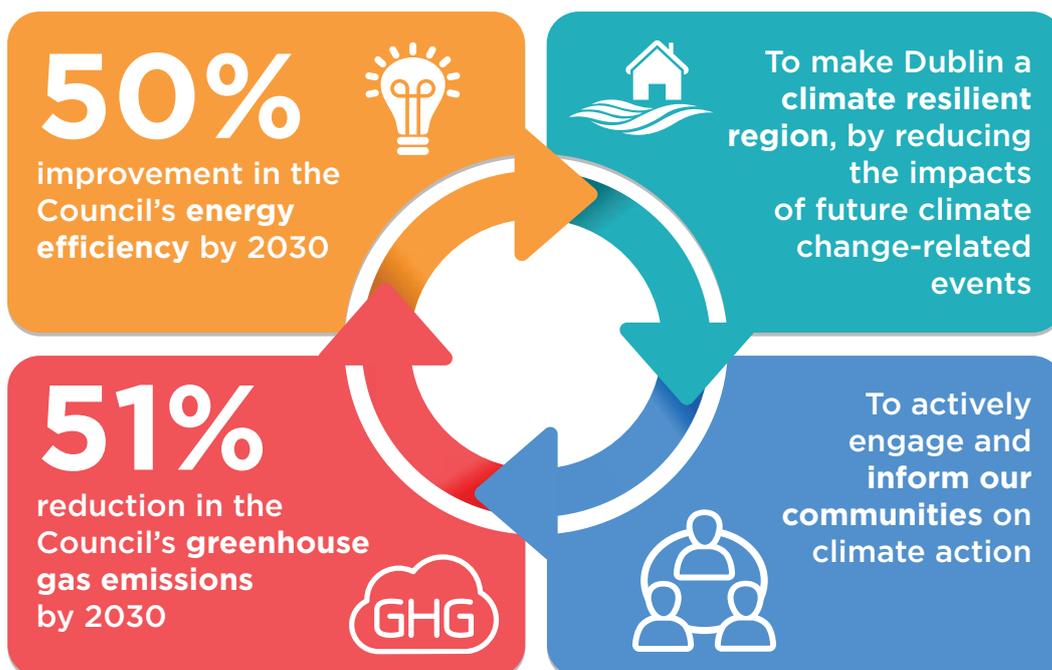
POTENTIAL ADDITIONAL BENEFITS OF CLIMATE ACTION

ECONOMIC

1. By adapting to climate change now, we can ensure that all future plans are climate-proofed and associated opportunities are maximised.
2. By transitioning to a low carbon economy, we will encourage the creation of additional job opportunities across a range of disciplines.
3. By using local solutions to mitigate and adapt to climate change, we can upskill our workers and generate employment.
4. By promoting improvements in energy efficiency, we will foster innovation in both the public and private sectors.
5. By using indigenous, sustainable sources for our energy needs, we can reduce our reliance on foreign fossil fuels.
6. By transitioning to a circular economy, we can stimulate innovation and create employment in the reuse and repair sector.
7. By becoming climate leaders, we are attractive to foreign direct investment from companies with a green corporate agenda.

HEALTH AND WELLBEING

Health co-benefits can occur from key climate change actions such as:

1. By encouraging cycling and walking, we can improve the health of our citizens.
2. By implementing nature-based solutions to combat climate risks, we can make the area a healthier and more desirable place to live and work.
3. By increasing energy efficiency and reducing the demand for fossil fuels, we will reduce greenhouse gas emissions and improve air quality in our area.
4. By implementing aesthetically pleasing mitigation and adaptation measures to combat climate risks we can improve the mental health of our citizens.

SOCIAL

1. By improving the energy efficiency of our social housing stock, we can reduce tenants' utility bills and lessen fuel poverty.
2. By protecting against climate risks, we can reduce impacts on citizens, their properties, and our services.
3. By informing citizens on the impacts of climate change and possible solutions in their areas, we can create networks of climate-resilient neighbourhoods.
4. By implementing mitigation and adaptation actions, we can provide other opportunities for community benefits in terms of green spaces, and pedestrian and cycle routes.
5. By increasing the number of trees, additional shading and privacy can be provided.
6. By supporting community initiatives and working together we can build a greater sense of social cohesion.

ENVIRONMENTAL

1. By using nature-based solutions to combat climate risks, we can increase the green infrastructure of the area and provide additional aesthetic value to our urban spaces.
2. By improving our public transport and cycling networks, we reduce congestion and pollution and improve air quality and reduce noise impacts.
3. By increasing resilience, we can protect our native flora and fauna.
4. By implementing mitigation and adaptation actions now, we lessen the potential impacts on the environment in the future.
5. By using nature-based solutions with, or instead of, hard engineering, we can reduce the associated costs of climate action, while increasing biodiversity.
6. By providing networks of natural wildlife corridors through the urban environment we will help animal and plant species migrate through the changing landscape.
7. By transitioning to a circular economy, we will reduce plastic pollution and use fewer natural resources.

Figure 1.6: Opportunities and benefits that can arise from Climate Action

STRUCTURE OF THE CLIMATE ACTION PLAN

This Draft Climate Action Plan 2024-2029 has been developed in accordance with the 'Local Authority Climate Action Plan Guidelines' [16] and has taken into full consideration international and national climate change policy and legislation, as well as the most up-to-date knowledge on current levels of climate change and its impacts and projections for the future. In showing the outcome of this process, this Plan is set out in four main parts:

1. The evidence base used to inform climate action within the jurisdictional area of South Dublin County Council, including the baseline emissions profile and the climate change risk assessment for South Dublin.

2. The framework for climate action across six different Action Areas – both mitigation and adaptation, and the Council's emergency response planning.

3. The Council's Decarbonising Zone (DZ), including the Vision for the DZ, DZ Strategic Priority Area and DZ Register of Opportunities.

4. The Council's approach to implementing actions and measuring progress, as well as how the Council will report on actions over the lifetime of the Plan.

Tree planting in Dodder Valley park

2. #6 THE CLIMATE ACTION PLAN PROCESS

STATUTORY CONTEXT OF THE DRAFT PLAN

Section 16 of the Climate Action and Low Carbon Development (Amendment) Act 2021 sets out the statutory requirement for each local authority to prepare a local authority climate action plan for its respective administrative area, which shall "specify the mitigation and adaptation measures to be adopted by the local authority" [9]. The plans will be consistent with the most recent approved climate action plan and national adaptation framework and once adopted, each plan will be valid for five years.

Local authorities are required to, in respect to the content and preparation of a Local Authority Climate Action Plan, comply with Ministerial Guidelines – the 'Local Authority Climate Action Plan Guidelines'[16], which were developed in response to Section 16 of the Climate Action and Low Carbon Development (Amendment) Act 2021[9] and issued to local authorities by the Department of Environment, Climate, and Communications in March 2023. The aim of the Guidelines is to direct local authorities with regards both the content and preparation of their Local Authority Climate Action Plans to ensure a coherent and consistent approach to climate action planning.

PREPARATION OF THE LOCAL AUTHORITY CLIMATE ACTION PLAN

The South Dublin County Council Draft Climate Action Plan 2024-2029 has been prepared in accordance with the Act and these guidelines. In preparing the Plan, the Council has also taken account of relevant climate legislation and policy, a specific county scale climate change risk assessment and a climate mitigation baseline assessment, both of which are included as part of this Draft Plan. A range of other plans, including, but not limited to, the Council's County Development Plan, Corporate Plan, Local Economic and Community Plan, Biodiversity Plan, also aim to support the Draft Climate Action Plan.

In accordance with the Local Authority Climate Action Plan Guidelines, the Draft Climate Action Plan is Ambitious, Action-Focused, Evidence-Based, Participative and Transparent. These guiding principles, as outlined in Figure 2.1, serve as a benchmark for local authorities on climate action planning. A key component of the Draft Climate Action Plan is identifying and understanding the scope of the local authority's responsibility on climate action and the scope of its Plan; this is shown in Figure 2.2 below. The Draft Climate Action Plan aims to focus not only on SDCC's direct emission reduction, but also to influence that of the wider communities in South Dublin. The Draft Plan sets out how the Council will be responsible for enhancing climate resilience, increasing energy efficiency and reducing greenhouse gas emissions, across its own assets, services and infrastructure, to which it is 'fully accountable' for, whilst also demonstrating a broader role of 'influencing', 'coordinating and facilitating' and 'advocating' for other sectors, to meet their own climate targets and ambitions. This is necessary to ensure that the environmental, social and economic benefits that come with climate action, can be fully realised.

Ambitious	To reflect the leadership role of local government on climate action and to help realise the pivotal role the local authority plays in enabling the transformative measure required to respond to the challenges presented by climate change and deliver on the national climate objective, therefore reflecting the ambition of DECA 2030.
Action-Focused	To realise specific and deliverable actions to achieve adaptation and mitigation measures that reflect the local authority's responsibilities at organisational and community levels
Evidence-Based	Using the most up-to-date scientific information, data on emissions, grounded risk and vulnerability assessments, local knowledge and other empirical evidence to inform decision making and pursue effective mitigation and adaptation measures.
Participative	Involving a range of stakeholders to contribute to both the development of the climate action plan and the practical delivery of actions. Inclusive, coordinated and collaborative climate action stems from cooperation of a diverse range of stakeholders from the earliest stage possible.
Transparent	Open process with inclusive and collaborative engagement that supports decision making that can be measured and reported on.

Figure 2.1: Guiding Principles of the Climate Action Plan (Source: Local Authority Climate Action Plan Guidelines, 2023)
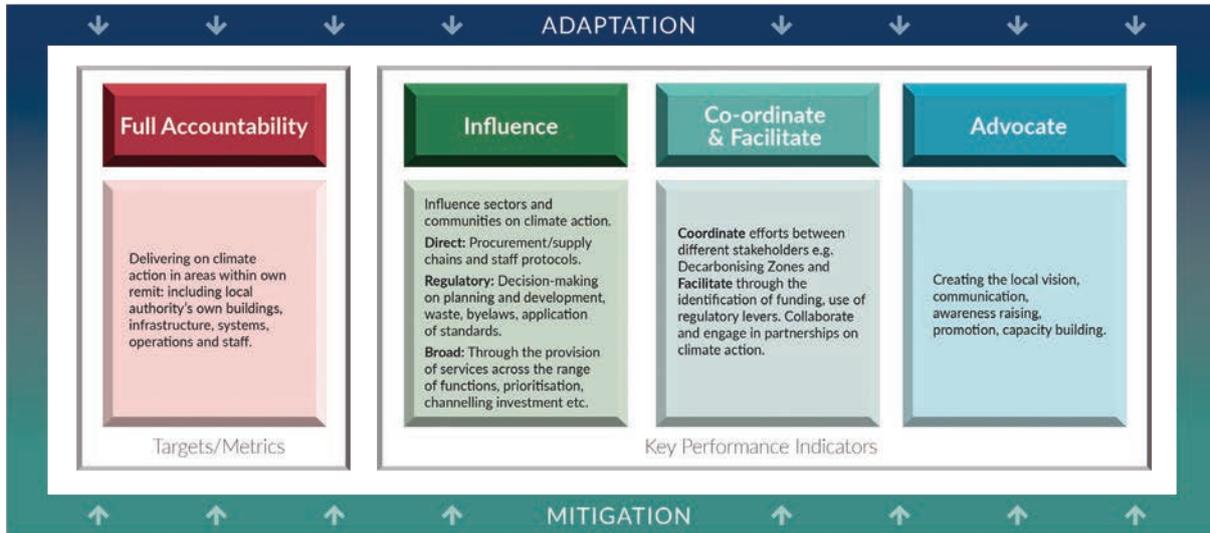
Local Authority Scope on Climate Action

Figure 2.2: Local Authority Scope on Climate Action (Source: Local Authority Climate Action Plan Guidelines, 2023)

To prepare the Draft Climate Action Plan, the SDCC Climate Action Team engaged with the Senior Management team and each Directorate, though meetings and workshops, to develop ambitious actions across the six Action Areas identified, based on the evidence of the baseline emissions inventory (BEI) and climate change risk assessment that was completed for the county. Codema, Dublin's Energy Agency, prepared the BEI for South Dublin and for the Clondalkin Decarbonising Zone on behalf of SDCC. A consultant, KPMG, was procured to develop the climate change risk assessment in conjunction with SDCC staff.

Wider engagement with all staff was driven by an online staff survey, which was supported by an opportunity to speak to the Climate Action Team and to participate in a 'Visioning Exercise'.

Early engagement workshops were held with Elected Members and the members of the Strategic Policy Committees (SPC) for South Dublin. Updates on the process were provided at various intervals at Council meetings, the Environment, Public Realm and Climate Change SPC meetings, and in the Monthly Chief Executive Report.

Regular collaboration was undertaken with the other three Dublin Local Authorities, Codema and Dublin Climate Action Regional Office (CARO), as facilitated by CARO to oversee a streamlined and regional approach to the development of the Draft Climate Action Plans.

Engagement with other neighbouring local authorities was also undertaken, facilitated by CARO.

ENVIRONMENTAL ASSESSMENTS

The Draft Climate Action Plan 2024-2029 was required to be assessed under specific environmental legislation. Recommendations and mitigation measures made through the assessment processes outlined below are incorporated into this draft plan and will be undertaken as part of implementation of the adopted plan.

STRATEGIC ENVIRONMENTAL ASSESSMENT

Environmental assessment is a procedure that ensures that the environmental implications of decisions are considered before such decisions are made. Strategic Environmental Assessment (SEA) is the term which has been given to the environmental assessment of plans and programmes, which help determine the nature and location of individual projects taking place. SEA is a systematic process of predicting and evaluating the likely significant environmental effects of implementing a proposed plan or programme, in order to ensure that these effects are adequately addressed at the earliest stages of decision-making, in tandem with economic, social and other considerations. The SEA process was integrated into the preparation of the South Dublin County Council Draft Climate Action Plan. This is in accordance with the European Communities (Environmental Assessment of Certain Plans and Programmes) Regulations 2004 (S.I. 435 of 2004 as amended by S.I. 200 of 2011). The SEA Environmental Report is contained as a separate document accompanying the Draft Climate Action Plan 2024-2029.

APPROPRIATE ASSESSMENT

In accordance with requirements under EU Habitats Directive (92/43/EEC), the EU Birds Directive (79/409/EEC) the potential effects of the Climate Action Plan on certain sites designated for the protection of nature under European legislation, must be assessed as part of the preparation of the Climate Action Plan. This process, known as Appropriate Assessment, is to determine whether or not the implementation of Draft Climate Action Plan could have negative consequences for the habitats or species for which these sites are designated. Appropriate Assessment was undertaken as part of the plan-making process and a Natura Impact Report is contained as a separate document accompanying the Draft Climate Action Plan 2024-2029.

PUBLIC ENGAGEMENT AND APPROVAL

The Draft Plan will be on public display from from 20th September 2023 to 3rd November 2023 inclusive, with all written submissions or observations on the draft plan, via the appropriate channels, being welcome and taken into consideration before the making of the Plan.

Following public consultation and engagement, the updated Draft Plan will be subject to approval by the Elected Members of South Dublin County Council, following receipt of a Chief Executive's Report on Draft Plan Public Consultation.

Council Chamber of South Dublin County Council

THE ACTION PLAN PROCESS

3. EVIDENCE-BASED CLIMATE ACTION

- South Dublin County Council's emissions profile

- South Dublin County Council's climate change risk assessment

South Dublin County Council's Emissions Profile

The National Climate Action Plan (CAP 23) [10] reaffirms emissions pathways for Ireland which were previously set out in the Climate Action and Low Carbon Development (Amendment) Act 2021 [9] - to halve Ireland's greenhouse gas (GHG) emissions by 2030 and achieve net zero by 2050. Relevant targets include:

- Local authorities must improve their energy efficiency by 50% by 2030, as first set out in the Local Authority Climate Action Charter [14], in comparison with a baseline of 2009 (or earlier).

- Local authorities must also reduce their heating and transport emissions by 51% by 2030, in comparison to a 2018 baseline.

- Nationally, we must reduce GHG emissions overall by 51% by 2030, in comparison to a 2018 baseline, and achieve climate neutrality by 2050 - local authorities are obligated by the Climate Action and Low Carbon Development (Amendment) Act 2021 to produce plans consistent with this target.

Table 3.1 below highlights the milestone years used in this analysis:

Key Years	Significance
2009	o Baseline year for public sector energy efficiency targets
2018	o Baseline year for South Dublin County Council's (SDCC) GHG emissions reduction targets o Emissions related to the wider SDCC area are also calculated for this baseline year
2021, 2022	o Latest data from 2021 and 2022 is used in this analysis, where available, to highlight SDCC's current status and progress towards 2030 targets.
2030	o Year of public sector energy efficiency target – reduction of 50% o Year of national emissions reduction target of 51% (in comparison with 2018 baseline year)
2050	o Year of national target of net-zero emissions

Table 3.1: Milestone years used in this analysis

South Dublin County Council's Current Energy Use

South Dublin County Council (SDCC) is responsible for the energy use and emissions from its buildings and facilities, its public lighting, its fleet of vehicles, and more. This section highlights SDCC's energy use and the progress SDCC has made in improving energy efficiency, using the most recently available data. The information from the Sustainable Energy Authority of Ireland's (SEAI) Monitoring and Reporting (M&R) database shows that SDCC had a total final energy consumption of nearly 27.3 Gigawatt hours (GWh) in 2021, which would represent 44.3 GWh of primary energy. Figure 3.1 below explains the meaning of 'primary energy' and outlines the different ways of measuring energy.

Figure 3.1: The Four Ways of Measuring Energy [17]

'Site Visit to a Solar Farm organised by CARO for the Dublin local authorities'. Photo credit: Dublin Metropolitan CARO

SDCC has achieved a 42% improvement in energy efficiency from 2009 to 2021.

As shown in Figure 3.2, SDCC's public lighting was the highest energy consumer in 2021, accounting for 51% (22.4GWh) of the Council's Total Primary Energy Requirement (TPER). Buildings and services facilities were the second highest consumers, accounting for around 37% (16.42GWh) of the total energy consumption, while the municipal fleet (shown below as Transport) accounted for 9% (4.0GWh) of the total energy use. The remaining energy consumption sources which account for 3% (1.48GWh) are from several minor energy consumers.
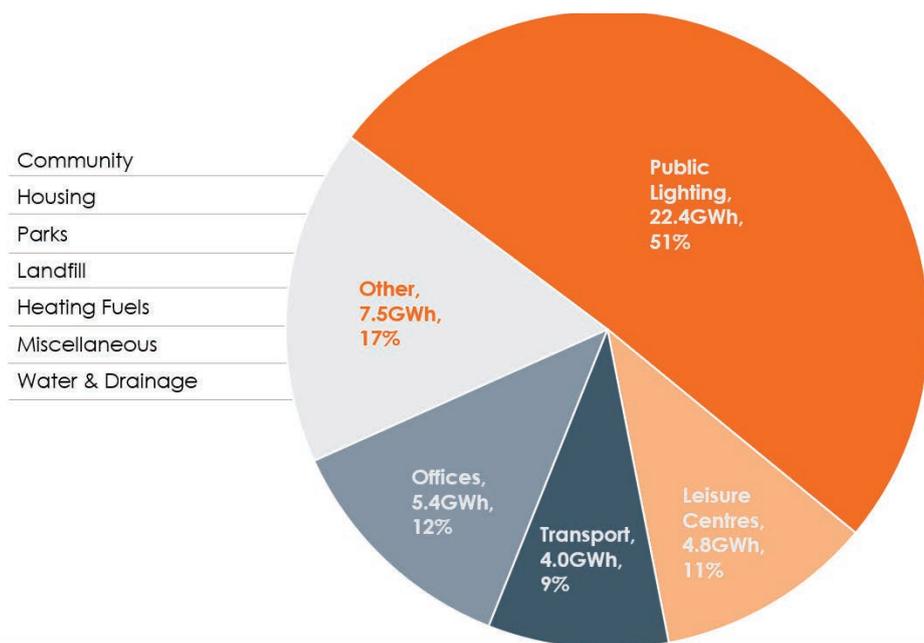
Figure 3.2: Significant Energy Users in SDCC TPER 2021 (%)

South Dublin County Council's Emissions

This section highlights SDCC's current emissions, using the most recently available data. Among the Council's total emissions of **8,324 tonnes of CO$_2$** (tCO2) in 2021, public lighting was the biggest emitter at **49%**. This was followed by buildings and facilities and then the municipal fleet each contributing **40%** and **11%** to the Council's emissions, respectively (Table 3.2).

Largest Emitters	Public lighting	Buildings and Facilities	Municipal Fleet
Proportion of the emissions by energy source	49%	40%	11%

Table 3.2: Main sources of emissions in SDCC in 2021

In 2021, **72%** of the Council's emissions came from electricity; this was mainly due to the large amount used in public lighting and in the Council's buildings and facilities. The use of natural gas was the second highest contributor of emissions at **16%**. Most of this gas was used for space heating in Council buildings and facilities. The use of diesel, which made up the majority of the energy used by the Council's fleet of vehicles, contributed 8% to the total emissions (Table 3.3)

	Electricity	Natural gas	Diesel (Vehicle Fleet)	Other
Proportion of the emissions by energy source	72%	16%	8%	4%

Table 3.3: Proportion of emissions for each source in SDCC 2021

GAP TO TARGET

The gap-to-target model (GTT model) is a spreadsheet model used by public bodies to evaluate their energy-related GHG emissions over time, in accordance with SEAI's public sector energy monitoring and reporting framework for the period to 2030.

Overall, the Council's GHG emissions have reduced by **31%** since the 2018 baseline, this is mainly due to reductions from electricity sources. Non-electricity related emissions have reduced by **6%** since the baseline was established.

SDCC is required to reduce its heating and transport related GHG emissions by 51% by 2030, in comparison with a 2018 baseline. The gap-to-target analysis (Figure 3.3) highlights the future emission reductions required for SDCC in transport and in heating (shown as 'Thermal' in Figure 3.3). It also demonstrates the emission benefits that a future low carbon electricity grid will offer SDCC (blue columns).

The 2022 gap-to-target for heating (thermal) and transport emissions is estimated to be **45%**. This means, in order to meet its 51% reduction target in heating and transport related GHG emissions, between 2022 and 2030 SDCC must reduce these non-electricity related emissions by a further 45% compared to the 2018 baseline. (To note that annual South Dublin County Council emissions were estimated to be **12,022 tCO₂** for the 2018 GHG emissions baseline from the SEAI M&R system.)

As seen in Figure 3.3 below, SDCC has the potential to meet its 2030 emissions reductions targets, based on successful completion of the decarbonisation projects identified in SDCC's project pipeline.
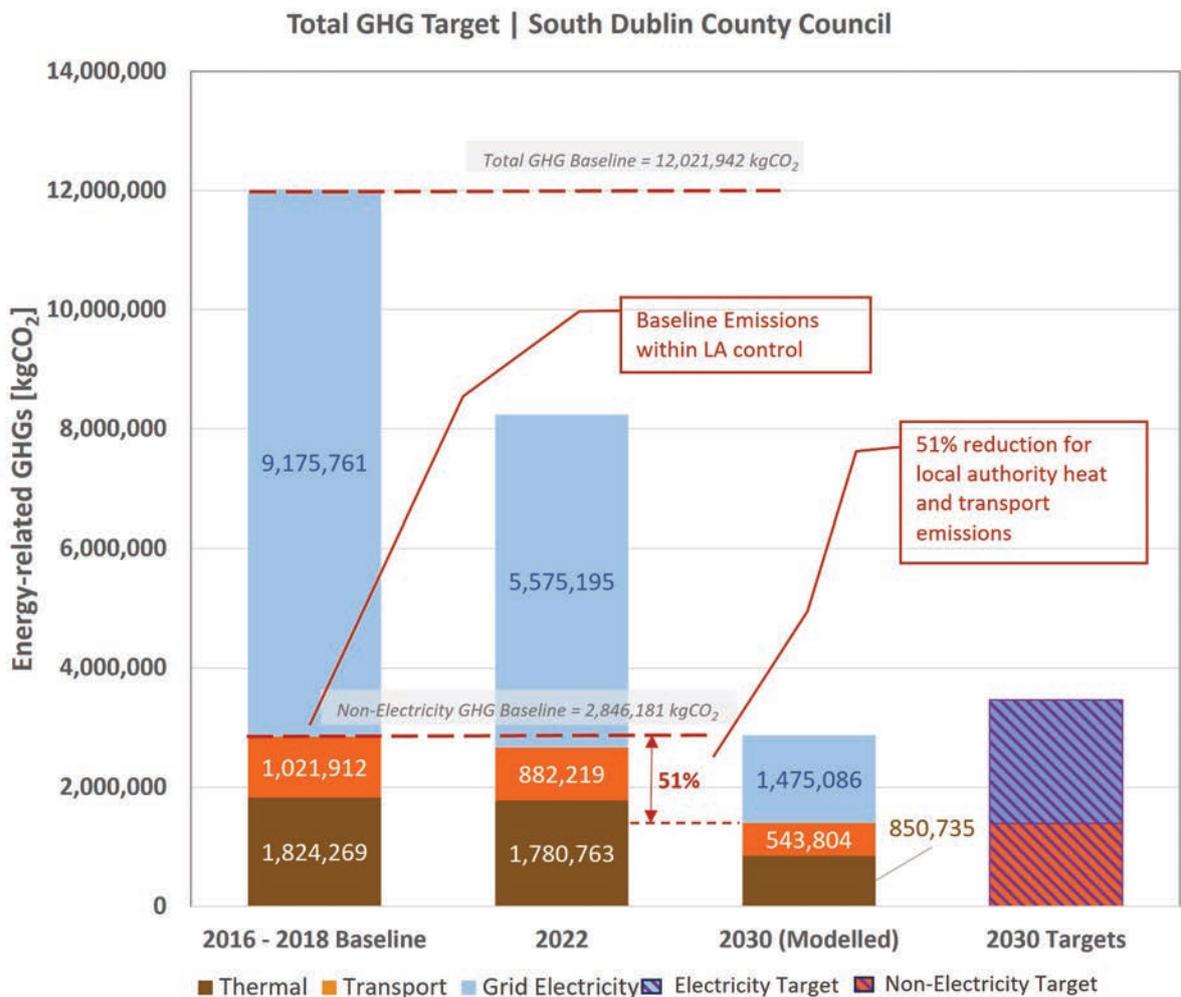

Figure 3.3: Gap-to-Target Tool - Total SDCC Emission Targets for 2030 and Current Emissions

Priority Areas for Further Reduction of South Dublin County Council's own Emissions

The key areas for South Dublin County Council to take action to reduce its own emissions are:

- Retrofit of the Council's own buildings and facilities, to include renewable energy, and renewable heating systems, etc to decarbonise the buildings and facilities and reduce energy consumption.

- Decarbonisation of the Council's fleet.

Decarbonisation of the electricity grid is expected to significantly reduce SDCC's electricity related emissions. The priority focus for SDCC therefore is on their own direct emissions, which includes emissions from transport and heat (thermal).

Retrofit and Renewable Heating Systems in SDCC's own buildings and facilities

Building upgrades present better cost effectiveness of emissions reduction (€/tonne CO_2) than fleet decarbonisation and therefore are recommended for prioritisation. Building energy upgrades alone may potentially allow SDCC to exceed its targets.

Buildings have been evaluated and prioritised for action on a range of criteria, including total emissions reduction potential, and cost effectiveness of emissions reduction (€/tonne CO_2).

The types of actions planned for buildings in the Council's project pipeline are:

- o **Suitability evaluation of buildings for upgrades**
- o **Building Energy Rating (BER) assessment**
- o **Solar Panels**
- o **Lighting upgrades**
- o **Heat Pumps**
- o **Building fabric upgrades**
- o **Building energy management system upgrades**

This work will be carried out using energy performance-based contracts, where possible, which will ensure long-term, guaranteed energy savings and will make the projects more financially viable for SDCC.

The highest priority SDCC buildings and facilities for this work, based on emissions reduction potential, are:

- o **Clondalkin Leisure Centre**
- o **Tallaght Leisure Centre**
- o **Civic Theatre**
- o **County Hall and Library, Tallaght**
- o **Clondalkin Civic Offices**

Decarbonisation of South Dublin County Council's Fleet

SDCC has begun decarbonisation of its fleet of vehicles. The Council has undertaken a review of the fleet and developed a Decarbonisation Strategy over both a 5-year and 10-year period. Based on SDCC's gap-to-target modelling to meet the 2030 emission reductions targets at least 31% of the fleet will need to be upgraded by 2030 to meet the direct emissions target. However, it should be noted that further fleet upgrades may be required dependent on the progress of buildings related decarbonisation projects.

Impact of Projects

The building and fleet decarbonisation projects identified above, along with a pipeline of smaller building projects will allow SDCC to meet the 2030 direct emissions target.

TOTAL EMISSIONS OF SOUTH DUBLIN COUNTY COUNCIL ADMINISTRATIVE AREA

Emissions Across South Dublin

Ireland has committed to reduce its emissions by a minimum of 51% by the year 2030. The 2030 target corresponds to a 51% reduction from 2018 figures, as defined by the Programme for Government (2020) [18], which states that Ireland is 'committed to an average 7% per annum reduction in overall greenhouse gas (GHG) emissions from 2018 to 2030 (a 51% reduction over the decade)'. The significance of the Dublin region in the Irish economy means that it is imperative to plan and commit to energy saving and CO_2 reductions at a local and regional level, in order to meet national level targets.

It is particularly important for urban regions to focus on their reduction in emissions, as more than 70% of global emissions are caused by activities in urban areas, such as manufacturing, transportation and energy demand. Carbon sinks tend to be limited in cities, given the number of built-up areas, and the limited number of natural ecosystems which have the ability to absorb CO_2.

The overall emissions for the South Dublin area have been calculated for the baseline year of 2018. This Baseline Emissions Inventory (BEI) uses data from the 2016 census, and additional data collected as part of the Dublin Region Energy Masterplan project, to make an estimation of the baseline emissions for the South Dublin area for 2018, as shown in Figure 3.4 below. Total emissions are estimated to be **1,836,723 tonnes of Carbon Dioxide equivalent** (tCO₂e).

What is CO2 equivalent (CO2e)?

CO₂e refers to the quantification of multiple GHGs in an equivalent amount of CO_2. If the quantity of GHGs other than CO_2 is significant for a specific sector, then they are converted to CO₂e. If they are insignificant, then only CO_2 is considered. In mathematical terms, $CO_2 = CO_2e$

Agriculture	0.4%
Landfill	1.2%
Municipal	0.7%
Wastewater	0.5%

Residential 17%
Commercial & Data Centres 46%
Other 3%
Transport 34%
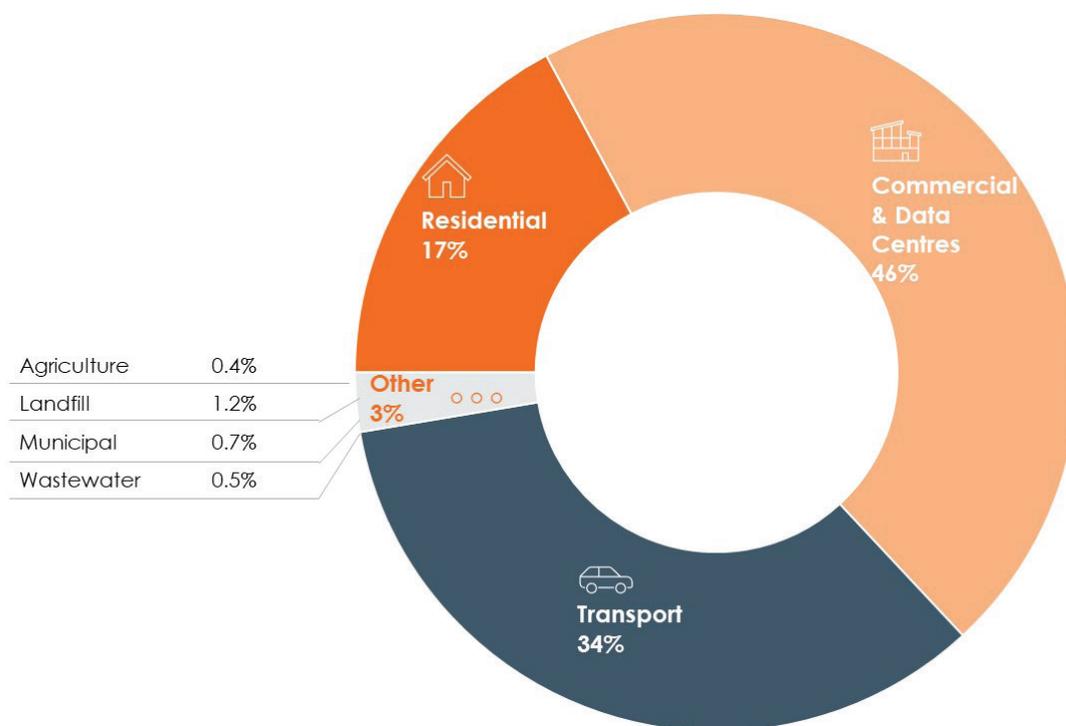
Figure 3.4: Total GHG Emissions for South Dublin per Sector 2018 (%)

Figure 3.4 illustrates that the sectors in South Dublin that produced most emissions were transport at **34%**, commercial at **46%** (with data centres in South Dublin responsible for 32% of emissions in the county) and residential sectors accounting for **17%** of the total emissions. The Council's own emissions (municipal emissions) accounted for just **0.7%** of this total. This highlights the need for collaboration and action from all stakeholders to tackle the emissions from public and private sector sources in South Dublin.

Emissions Reduction Pathways for South Dublin

Dublin Region Energy Masterplan

The Dublin Region Energy Master Plan[23] is an energy modelling project, funded by SEAI and carried out by Codema, that provides evidence-based pathways for the Dublin Region to achieve its carbon emission reduction targets to 2030 and 2050. For the first time in Ireland, the Dublin Region Energy Master Plan uses spatially-driven energy modelling to identify cost-optimal decarbonisation solutions that consider the socio-economic impact at a local level in Dublin, based on the specific energy "characteristics" or profile of a particular area.

Put very simply, this means that the master plan has looked at 'what should go where' for Dublin, based on the type of area and the technologies that are best suited to reducing energy-related emissions within that area. The master plan also brings together national government plans and policies to show the impact they will have on Dublin.

To define the pathways for the wider Dublin region to meet its 2030 and 2050 targets, the project first had to get a good understanding of the current situation in the county; this was followed by projecting the future business-as-usual energy demand and emissions (for the buildings, heat, electricity and transport sectors), and then identifying the low-carbon potential for these sectors. All of this information was then used to determine the net-zero pathway for Dublin.
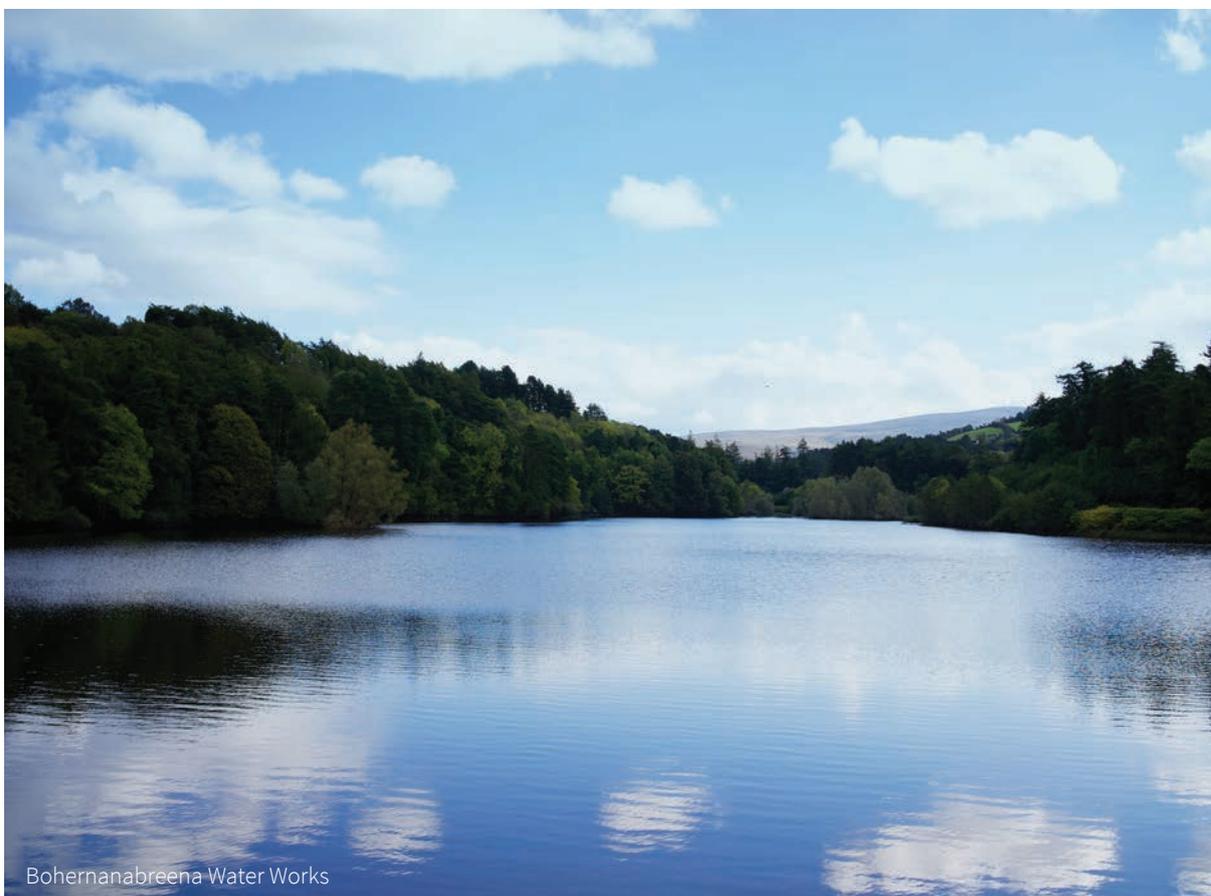
Bohernanabreena Water Works

Strategic Priorities

Potential Strategic priorities for the wider South Dublin area based on the Dublin Region Energy Masterplan[23] are:

- **Decarbonisation of heat**
  - o District heating has the potential to supply the majority of the South Dublin's heat demand.
  - o Heat pumps have the potential to supply the remaining heat demand in South Dublin.

- **Buildings**
  - o The average BER in South Dublin is D1 - support is needed for building energy retrofits.
  - o Areas most at risk of energy poverty in Dublin should be prioritised for building energy retrofits.
  - o The opportunity for building-integrated solar in South Dublin equates to the electricity demand of approximately 65,000 homes. Significant portions of this opportunity exist in South Dublin.
  - o Minimum energy efficiency standards for rented properties (in the case of rented properties, tenants do not control the property and often cannot upgrade insulation and heat systems, and landlords may not have an incentive to do so)
  - o Develop increased linkages between energy and local level spatial planning – local level energy planning can identify solutions not visible at a national level.

- **Renewable electricity**
  - o Much of Dublin's renewable energy will comes from offshore wind. While this does not directly impact South Dublin County Council, there are likely to be significant indirect impacts, as this will require significant upgrades to the electricity transmission and distribution systems all across the Dublin region.
  - o The development of enabling electricity infrastructure needs to be supported to maximise Dublin's potential to generate renewable energy.
  - o Significant electricity consumers, such as data centres and other large industrial sites, should maximise on-site renewable generation and ensure any remaining demand is supplied through renewable Power Purchase Agreements (preferably those which match hourly site demand), which finance renewable electricity projects within Ireland or its territorial waters.

- **Transport**
  - o Active travel and public transport solutions should be prioritised, including consideration of reallocation of road space to these modes of travel, and accessibility.
  - o The '15 Minute Neighbourhoods' concept is a key priority to address carbon emissions, congestion and air quality issues in Dublin.
  - o Support for electric vehicle infrastructure.

Dodder Greenway

South Dublin County Council's Climate Change Risk Assessment

Climate change will impact South Dublin in many ways, from damaging road infrastructure and uncontrolled fires to detrimental impacts on biodiversity, restrictions on water supply, and increased risk of flooding. These bring substantial implications for South Dublin County Council. This section provides an assessment of climate change risks and impacts for South Dublin, and the consequences of these for the delivery of services by South Dublin County Council (SDCC).

PURPOSE AND METHODOLOGY OF CLIMATE CHANGE RISK ASSESSMENT

Responding to potential impacts involves taking adaptation actions to reduce the adverse risks posed by current and projected climate change. Climate change risk assessments identify the likelihood of future climate hazards and their potential impacts. Understanding these hazards and impacts is fundamental for informing the prioritisation of, and investment in, climate action.

A qualitative Climate Change Risk Assessment (CCRA) was undertaken by KPMG on behalf of South Dublin County Council (SDCC), in accordance with Technical Annex B Climate Change Risk Assessment of the Local Authorities Climate Action Plan Guidelines. [16] The Technical Annex B provides a stepped approach to carrying out a climate change risk assessment:

1. Assess the climate impact baseline, identifying, assessing and characterising the climate and weather-related impacts already being experienced by the authority, and

2. Identify and assess potential future climate impacts and risks.

A qualitative assessment is developed based on readily available information and provides for a screening of climate change related hazards and risks. This type of assessment helps to:

- Identify the full range of climate-related risks.

- Communicate identified risks to relevant stakeholders.

- Prioritise risks for further detailed analysis.

- Provide a broad understanding of where adaptation actions could be required.

In assessing climate change risk for South Dublin County Council, the risk assessment framework of the Intergovernmental Panel on Climate Change (IPCC) has been adopted. This framework identifies three key components of climate risk: hazard, exposure, and vulnerability.

- **Hazard:** potential source of climate-related harm, i.ie. damage or loss of property.

- **Exposure:** presence of people, livelihoods, environmental services and resources, infrastructure, or economic and social or cultural assets in places that could be adversely affected.

- **Vulnerability:** propensity / disposition to be adversely affected.

- **Risk:** the potential for adverse consequences.

In assessing climate change risk, climate information was derived from Nolan and Flanagan (2020) [19] and Climate Ireland [20] for two climate scenarios, RCP4.5 and RCP8.5.

- RCP4.5 represents an 'intermediate emissions' scenario with an average global warming of 1.4°C for the 2046-2065 period.

- RCP8.5 represents a 'very high emissions' scenario with an average global warming of 2°C for the 2046-2065 period.

The RCP8.5 scenario was used as it represents a 'worst-case' scenario which allows for a conservative risk assessment approach. The report focuses on the direct risks posed by climate change for South Dublin and the implications of these for South Dublin County Council. It is important to note that climate change will also pose indirect risks for South Dublin because of changes in climate conditions at international and global scales. These include, amongst others, forced migration of populations, increase in vector-borne disease, and disruption of supply chains.

UNCERTAINTY IN PREDICTING CLIMATE CHANGE

In assessing future climate risks there are levels of uncertainty, not only the magnitude and frequency of hazards but also the exposure and vulnerability to any given hazard.

Different social and economic developments can lead to substantially different future emissions of carbon dioxide and other greenhouse gases resulting in uncertainty in what the future global climate will be.

As a result of this uncertainty, climate projections include a range of scenarios, with SSP5-8.5 (AR6) or RCP8.5 (AR5) being the highest emission scenario and therefore the greatest change in future climate. When assessing climate risks with a qualitative approach, it is best practice to take a conservative or 'worst case scenario' to ensure that climate risks are not underestimated and dismissed as low or no risk. Climate risks identified within a qualitative risk assessment should be subsequently assessed using semi-quantitative or quantitative approaches to evaluate the risk in further detail.

Uncertainty also exists in relation to how South Dublin will develop into the future. Although, in the near-term there is relatively good understanding as a result of strategies, such as the South Dublin County Council Development Plan 2022-2028, developments up to 2050 are less certain. A 'worst case scenario' approach has been taken here also, with the potential future impact being increased according to the indicative near-term trend and the assumption that adaptation actions are not implemented.
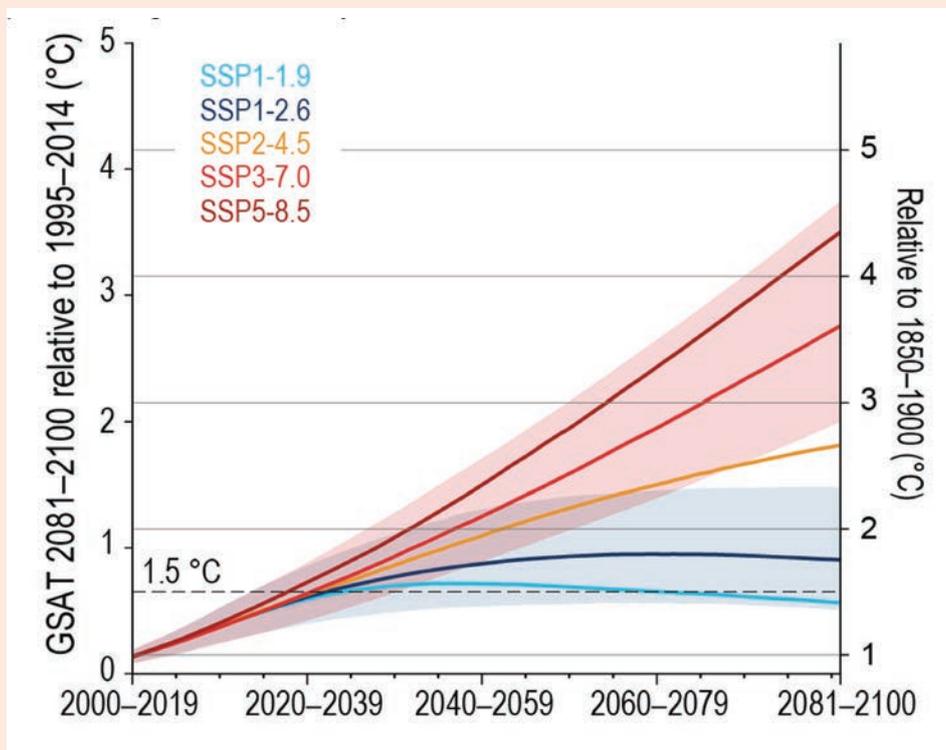
Assessed projected change in mean global surface temperature for five future climate scenarios. Future global temperatures can vary from below 1.5°C to over 4°C by 2100 depending on the amount of future emissions [76].

A wide range of qualitative and quantitative information was employed to inform the development of the CCRA for South Dublin. Current and future climate risks and impacts were identified and assessed using data from Met Éireann's network of meteorological and climatological stations. To establish a long-term climatology, a 30-year period of data is required, the Dublin Airport long-term weather station was used for baseline calculations. This baseline also utilised information contained within the South Dublin County Council Climate Change Action Plan published in 2019, and additional analysis covering the period 2018-2023.

Climate Ireland was employed to access data and information on projected changes in the frequency and intensity of climate hazards while the National Planning Framework[50], South Dublin County Development Plan 2022-2028[36] and the Regional Spatial and Economic Strategy for the Eastern and Midland Region were employed to assess future development patterns. In addition, two stakeholder workshops were held to garner further insights from South Dublin County Council staff across all key departments.

SOUTH DUBLIN'S CHANGING CLIMATE

In line with global trends, the climate of Ireland and South Dublin is changing, temperatures are increasing, and patterns of precipitation are changing.
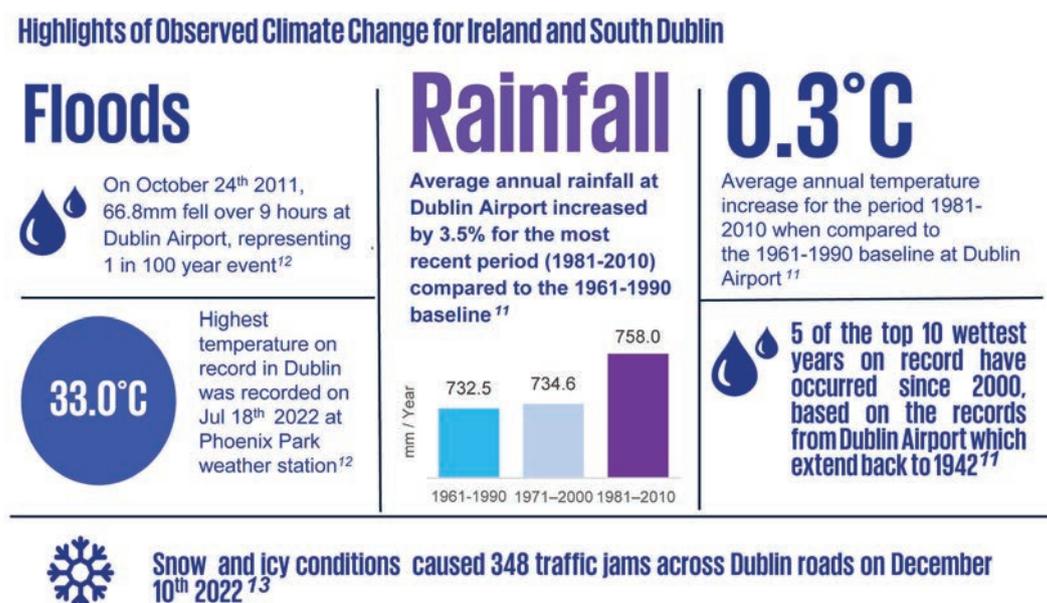
Figure 3.5: Observed climate change for Ireland & South Dublin

In addition to observed changes in South Dublin's climate, South Dublin has been impacted by a range of climate and weather-related events over the period 1982-2023. The hazard profile in Figure 3.6 below provides an overview of the recent climate and weather-related events and the frequency to have impacted South Dublin over the recent past.

Based on the climate hazard baseline, severe windstorms have impacted upon South Dublin most frequently over the period 1982-2023, with pluvial and river flooding also affecting South Dublin on a number of occasions. Heatwave, drought, cold spell and heavy snowfall have also impacted South Dublin, but less frequently.
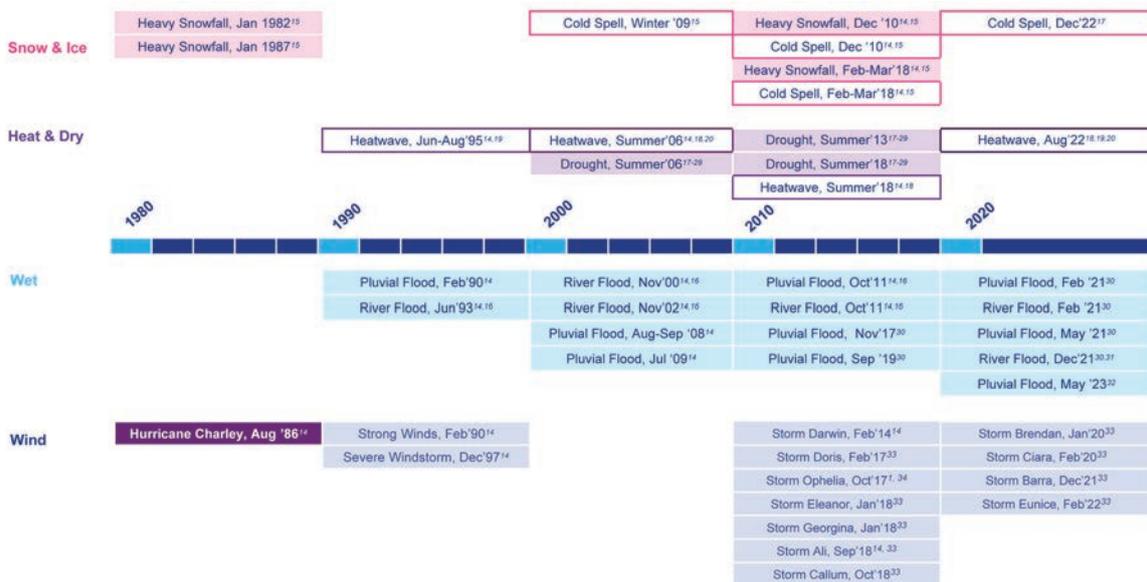
Figure 3.6: Overview of the hazard events which have impacted South Dublin 1982 - 2023.

The baseline information was used to examine the service level impacts on the delivery of services by the Council (available in the full CCRA report) and a current climate risk matrix was then developed based on the frequency of hazard and the associated level of impact already seen in South Dublin (see Figure 3.7 below). The assessment identified severe windstorms, river flooding and pluvial flooding as posing the highest levels of risk for South Dublin in the current period. As seen in the baseline, heatwave, drought, cold spell and heavy snowfall have also impacted South Dublin, but less frequently and hence are a lower risk. Groundwater flooding was noted to occur on a rare basis with a negligible level of impact identified for South Dublin.

Figure 3.7: Current Risk Matrix for the identified hazards within South Dublin.

PROJECTED CLIMATE CHANGES FOR SOUTH DUBLIN

Current projections indicate that the level of risk associated with some climate hazards will increase, some will decrease, and for others the level of risk will remain the same.

Having identified and assessed the range of climate hazards and impacts already experienced in South Dublin, the projected changes in the frequency and intensity of these hazards were assessed to understand how existing climate impacts and risks faced by South Dublin may change in the future. The information set out in the table below summarises the climate projections for each hazard (based on 'Nolan and Flanagan (2020)' [19]).

Hazard	Projected Change	Future Frequency
Heatwaves	Projections indicate **an overall increase in average temperature** of between 1.2 and 1.6°C for South Dublin relative to the 1981-2000 period. Under a high emission scenario, projections indicate that **heatwaves will become more frequent** by mid-century.	Frequent
Droughts	**Summer rainfall is expected to reduce** in the future when compared with the baseline period of 1981 to 2000, in both the medium and very high emissions scenarios contributing to potential drought conditions.	Common
Cold Spell	As a consequence of the increasing temperatures, **a decrease in the number of frost days and ice days** in the 2041-2060 future period is projected when compared with the baseline period of 1981 to 2000, for both the RCP4.5 and RCP8.5 scenario.	Occasional
Heavy Snowfall	The annual snowfall in the region is projected to decrease substantially by the middle of the century for the medium and very high emissions scenarios.	Rare
Severe Windstorms	**Projections of storms are subject to a high level of uncertainty.** By mid-century, projections indicate that average wind speed will remain similar to those currently experienced. There is limited evidence of a potential increase in the frequency of more intense storms which are currently rare events. However, more research is needed to confirm this increase.	Very Frequent
Pluvial Flood	Projections indicate an increase in the frequency of heavy rainfall days (days with precipitation >30mm) for South Dublin with some areas projected to see an increase of up to 16.5%. This will likely result in an increased frequency of of associated river (fluvial) and pluvial flooding.	Very Frequent
River Flood		Very Frequent
Groundwater Flood	Projections of changes in groundwater flooding are currently not available, therefore there is uncertainty in the change in groundwater flooding frequency that can be expected.	Rare

Figure 3.8: Summary of climate projections for South Dublin.

FUTURE CLIMATE RISKS AND IMPACTS

The potential changes in the climate of South Dublin up to 2050 and their effects on the frequency of hazard occurrence, were considered alongside future population changes and development in the region. Projected changes in levels of hazard, exposure, and vulnerability of assets, combine to form an assessment of future climate risks for South Dublin.

In order to estimate the potential change in risk, several assumptions have been made in relation to the impact areas.

Assets:

- South Dublin's population is expected to increase; with that there will be **an increase in the associated households and the infrastructure exposed to hazard events.**
- Due to the expected increase in the frequency of heatwaves, **road assets will be more regularly exposed to extreme temperatures** and **drought** conditions with the potential for increased damage to roads.
- Extreme pluvial and river flooding events, that were once considered extreme, will become more frequent and **will increase damage in the areas that are exposed to these hazards** and also expose new areas and therefore assets that were previously unaffected.

Health and Wellbeing:

- Due to the expected increase in the elderly population in South Dublin there will be a **greater number of vulnerable people who are more sensitive to hazards**, particularly heatwaves.

Social:

- Due to the expected increase in the total and elderly population in South Dublin there will be an **increase in the number of people affected by social isolation during some hazard events**.
- In response to heatwaves, there will be an increased use of blue/green spaces by the public **putting increased pressure on local amenities** e.g. littering, traffic problems.

Cultural Heritage:

- Pluvial and river flooding events that were once considered extreme, will become more frequent. Consequently, **cultural heritage assets will be more frequently exposed to flooding hazards**, and higher flood levels will mean cultural heritage assets previously unaffected by flooding may become exposed resulting in short and long term damage to cultural heritage assets by these hazards.
- Due to the potential increase in frequency of heatwave and drought events, **degradation rates will potentially increase resulting in an increase in the impact of cultural heritage assets**.

Financial:

- Due to the potential increase in frequency of hazard events and exposure across South Dublin, **there will be an increase in the associated actions the local authority takes before, during, and after an event**.
- As a consequence, there will be an i**ncrease in the costs associated with dealing with the events**.

Reputational

- Due to the potential increase in frequency of hazard events and exposure across South Dublin during an event there will be an **increase in demand/pressure on services/resources** potentially reducing the level of service delivery and harming the reputation of the local authority.

Environment:

- Due to the potential increased frequency of exposure to hazards in South Dublin, there could be an **increase in the impact on environmental assets**, as the time/ability for the habitat/environment to recover is reduced.
- **Environmental and Cultural heritage assets will be more frequently exposed to flooding hazards**, and higher flood levels will mean environmental and cultural heritage assets previously unaffected by flooding may become exposed resulting in short, and long, term damage to cultural heritage assets by these hazards.
- The potential increasing occurrence of heatwaves and drought conditions within South Dublin will mean **increased temperatures in water bodies and lower water levels** which can decrease water quality resulting in short- and long-term impacts on the environment and biodiversity. With increasing temperatures, **there is potential for more wildfires** resulting in negative impacts on protected habitats and species.

The risk matrix in Figure 3.9 below shows the future change in risk with the hollow marker showing the current risk and the solid marker the future risk. The dotted line shows the change between the current and future risk.

The risks associated with existing hazards such as river and pluvial flooding are projected to increase in the future because of increases in the frequency of hazard events and due to an increase in the areas, assets, and populations exposed to these hazards.

Heatwaves and droughts although already experienced in South Dublin, are expected to occur more frequently and with a greater impact on South Dublin. The impact is exacerbated by not only projected changes in frequency of occurrence of heatwaves, but also as a result of projected increases in population and the proportion of population considered vulnerable (those aged 65 years and over). These hazards can therefore be considered as emerging risks for the region.

Although the frequency and impact of severe windstorms is thought to be unchanged in the future, these events will remain a risk for South Dublin.

The impact of heavy snowfall and cold spells on South Dublin remains constant. However, due to projected decreases in hazard frequency, the overall risk of these hazards is likely to reduce in the future, resulting in a decreased level of risk.

The impact of groundwater flooding will remain constant, with a negligible to minor impact on South Dublin.
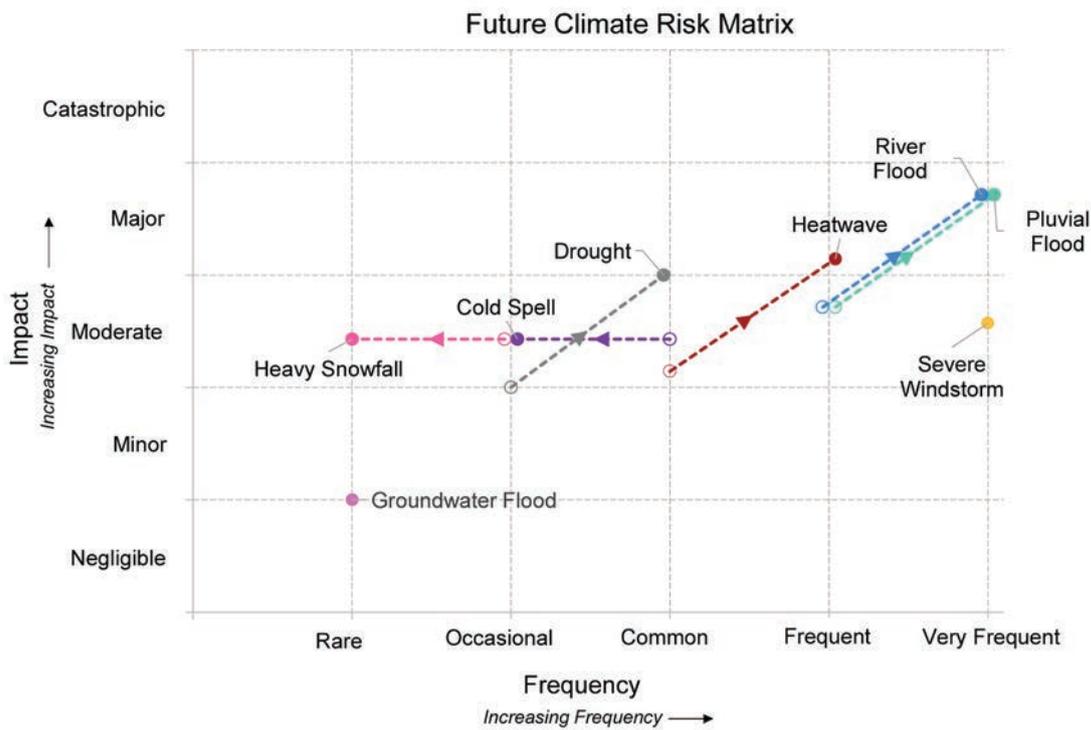
Figure 3.9: Risk matrix showing the future changes in risk for the identified hazards within South Dublin.
For each hazard there is a solid marker, which identifies the future risk, and a hollow marker showing the current risk.

THE IMPACTS OF CLIMATE CHANGE ON SOUTH DUBLIN

The impacts of climate change hazards on South Dublin will have direct and indirect consequences for the delivery of services by South Dublin County Council before, during, and after climate and weather-related events.

On the basis of reported information, and in consultation with South Dublin County Council, an assessment of the impacts of identified climate change hazards and impacts on the delivery of services by South Dublin County Council was undertaken in accordance with the criteria provided through Technical Annex B: Climate Change Risk Assessment [16], with each service delivery area assigned an impact category of either negligible, minor, moderate, major, or catastrophic.

- Pluvial and river flooding have already resulted in a wide range of impacts for South Dublin County Council. Impacts are primarily associated with clean-up and repair costs, water quality issues due to overland flows of pollutants into water courses, damage to environmentally sensitive areas, increased pressure on emergency response services and supporting communities during and following flood events.

- Primary impacts of severe windstorms are associated with disruption of services and infrastructures due to loss of power supply and communications, damage to local authority assets and infrastructure, increased pressure on emergency response and redeployment of staff to support clean-up following a severe windstorm event.

- Cold spells and heavy snowfall are considered to have the highest level of impact for the provision of services by South Dublin County Council. Impacts are related primarily to damage to assets and infrastructure, closure of local authority offices and services and increased demand on emergency response.

- Heatwaves and drought result in a range of impacts for service provision by South Dublin County Council. The primary impacts relate to increased maintenance and repair requirements for road surfaces. In addition, high temperatures result in staff and public discomfort and an increased requirement for mechanical and passive cooling. Heatwaves and drought put additional pressure on community infrastructure such as parks.

Whitechurch Stream, St Enda's Park

4. RESPONDING TO RISKS – EMERGENCY RESPONSE PLANNING
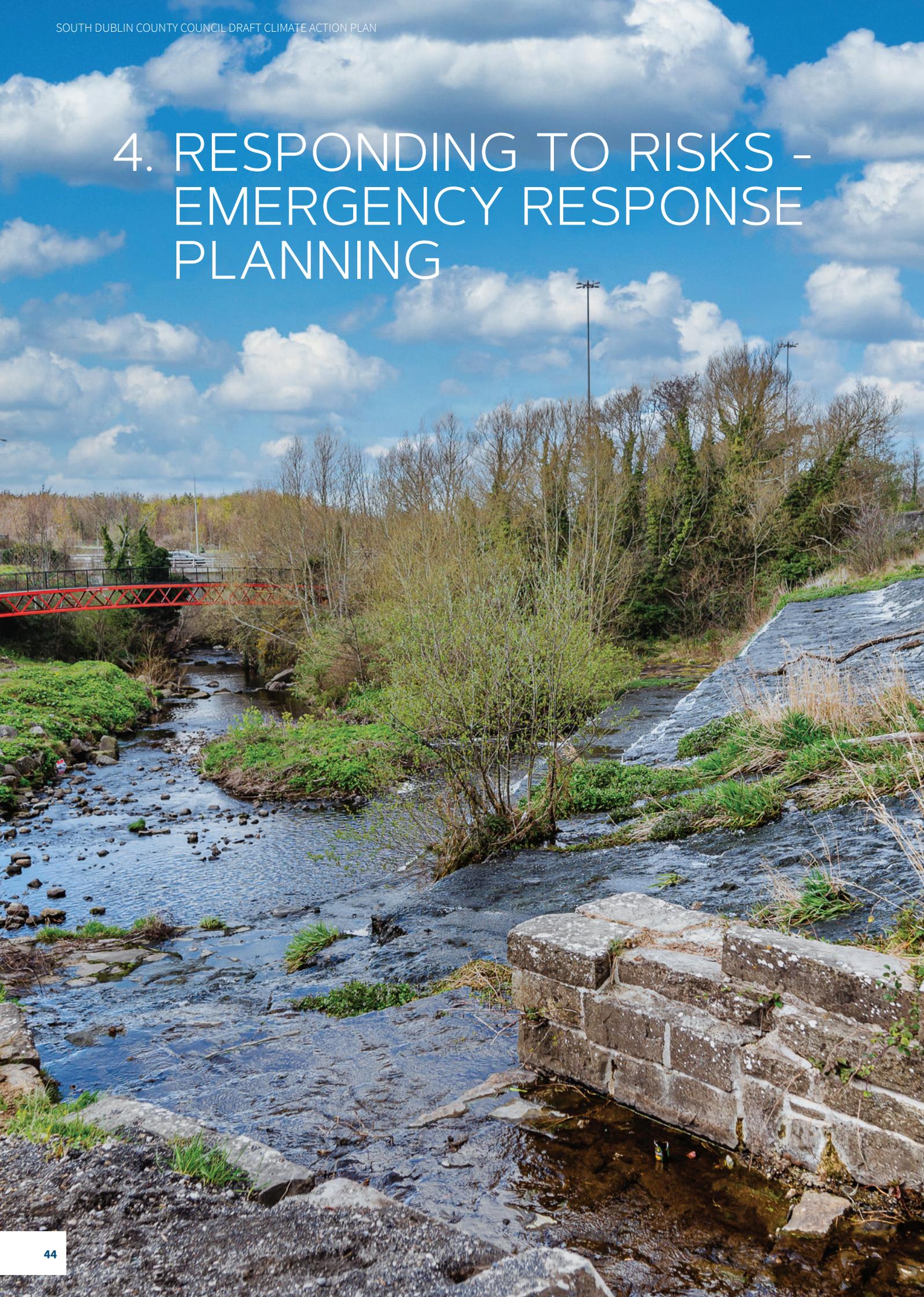
The Climate Change Risk Assessment for South Dublin outlined the risks that a changing climate can pose to citizens, infrastructure, businesses, and service delivery. This highlights the need to prepare a response plan for major emergencies, including major emergencies relating to these extreme weather events.

A Framework for Major Emergency Management (MEM) was adopted by government decision in 2006 [27]. Its purpose is to set out common arrangements and structures for front-line public-sector emergency management in Ireland. The Framework is based on the internationally recognised systems approach that, in essence, proposes an iterative cycle of continuous activity through five stages of emergency management: Hazard identification; Mitigation; Preparedness; Response; and Recovery.

Under the Framework, the Council is one of the three Principal Response Agencies (PRAs) and it works closely with the two other Principal Response Agencies - An Garda Síochána and the Health Service Executive. Together, the PRAs deal with all aspects of emergency management and major emergencies, including a coordinated response to extreme weather events.

EMERGENCY RESPONSE AT A REGIONAL AND LOCAL LEVEL

South Dublin County Council (SDCC) is part of the Major Emergency East Region, comprising the counties of Dublin (Including Dublin City, Dún Laoghaire-Rathdown and Fingal), Kildare and Wicklow.

Figure 4.1: The approach to Major Emergency Management

THE MAJOR EMERGENCY MANAGEMENT FRAMEWORK DEFINES A MAJOR EMERGENCY AS:

"Any event which, usually with little or no warning, causes or threatens death or injury, serious disruption of essential services or damage to property, the environment or infrastructure beyond the normal capabilities of the principal emergency services in the area in which the event occurs, and requires the activation of specific additional procedures and the mobilisation of additional resources to ensure an effective, co-ordinated response."

Figure 4.2: The Major Emergency Management East Region

SDCC has a Major Emergency Plan, drafted under guidance from the relevant framework documents, to facilitate the response to, and recovery from, major emergencies, and to ensure coordination with the other two designated Principal Response Agencies.

The Major Emergency Plan includes sub-plans, such as Flood Emergency Plans and Severe Weather Plans. These plans outline mobilisation procedures and regional coordination protocols for responding to the varied challenges presented by extreme weather events. The plans are reviewed regularly to ensure that they are kept up to date.

A Major Emergency Management (MEM) Team was established within the Council to meet its obligations as a Local Authority under "A Framework for Major Emergency Management"[27]. The MEM Team are active participants at local, regional, and national level committees dealing with various aspects of major emergencies and organising and delivering training and exercises on an interagency basis and participating in local training.

This Team is responsible for coordinating the response from SDCC, including activating SDCC's Crisis Management Team (CMT). The CMT is a strategic level management team within the Council and reports directly to the Chief Executive. This team is assembled if a major emergency is declared, but can also be utilised for any serious incident requiring a multi-agency response.

The MEM Team also coordinates SDCC's Severe Weather Assessment Team (SWAT), which is made up of senior staff from across the council and which monitors the weather alert systems that are in place to advise the Council of predicted extreme weather events. This SWAT meets in advance of any weather event that is classified as status orange or above by Met Éireann. The purpose of the meeting is to assess the readiness of the Council to deal with an upcoming severe weather event and put preventative actions in place as required, including informing the public via social media and other platforms.

In the event of a major emergency, the Council will respond to the incident in cooperation with An Garda Síochána and the Health Service Executive as well as with other state agencies and private sector companies as necessary.

Dublin Fire Brigade provides the primary response to emergencies across the Dublin area, acting as SDCC's Principal Emergency Service (PES). Dublin City Council administers the Dublin Fire Brigade on behalf of Dún Laoghaire-Rathdown County Council, Fingal County Council and South Dublin County Council.

SDCC supports this response by providing, amongst others, the following functions:

- Coordinating the delivery of services from all Council departments.
- Making buildings identified in the 'Rest Centre and Evacuation Plan' available to people displaced by the emergency.
- Providing a volunteer Civil Defence organisation.
- Coordinating and leading clean-up operations after severe weather or pollution incidents.
- Coordinating and leading multi-agency meetings to plan community recovery.

Major emergencies are rare events, but you can take steps to make sure that you feel as safe as possible. For more information and practical advice on how to cope with an emergency, visit the Department of Housing, Local Government and Heritage website at:

www.gov.ie/en/collection/ca182-a-framework-for-major-emergency-management

or the Met Éireann website at: **https://www.met.ie/met-eireann-warning-system-explained**

NATIONAL STRUCTURES FOR IMPLEMENTATION [27]

The Framework for Major Emergency Management (2006)[27] sets out structure for front-line public sector emergency management in Ireland, at National, Regional and Local levels.

Operating under these structures, South Dublin County Council has representatives in the East Region Steering Group and the East Region Working Groups. These groups report to, and take instruction from, the National Steering and Working Groups, who are guided at government level by the National Directorate of Fire and Emergency Management (NDFEM).

National

At National level, by government decision, a National Steering Group (NSG) was established. The NSG is mandated by Government to oversee the implementation and the development of the Framework, essentially acting as the board of management for the Principal Response Agencies MEM (in terms of governance structures). This group comprises of representatives of five government departments (Housing, Health, Justice, Defence and Transport) and the three Principal Response Agencies, An Garda Síochána, the Health Service Executive and the Local Authorities (via the City and County Managers Association). The National Steering Group aims to drive continuous improvement, facilitating research and development and supporting knowledge sharing and learning in MEM.

The NSG established a National Working Group (NWG), comprising of representatives from the three Principal Response Agencies to undertake tasks associated with the programme.

Regional

Arising from the provisions of the Framework, in each of the eight Major Emergency Management regions, a Regional Steering Group (RSG) on Major Emergency Management was formed, comprising senior personnel from the Principal Response Agencies within that region. The Framework provided that Regional Working Groups (RWGs) were to be formed to support the Regional Steering Groups and to undertake the functions assigned at regional level.

Local/Agency

At Local/Agency level each principal response agency is responsible for undertaking the requirements set out in the Framework.

The Eight Regions:
- East Region
- North East Region
- South East Region
- Midland Region
- West Region
- North West Region
- Mid West Region
- South Region
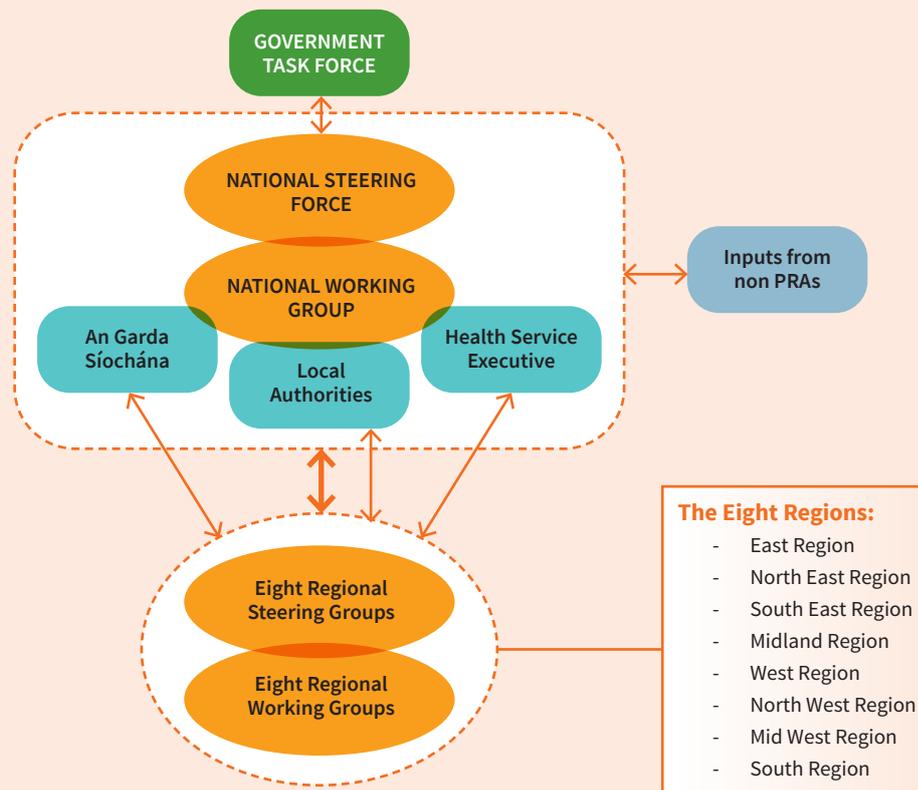
5. OUR CLIMATE ACTIONS – MITIGATION AND ADAPTATION RESPONSE

ENERGY & BUILDINGS

TRANSPORT

FLOOD RESILIENCE

NATURE-BASED SOLUTIONS

CIRCULAR ECONOMY & RESOURCE MANAGEMENT

COMMUNITY ENGAGEMENT

ENERGY & BUILDINGS

South Dublin County Council - County Hall, Tallaght.

Ireland has set ambitious targets for a 50% improvement in energy efficiency (relative to 2009 levels) and a 51% reduction in greenhouse gas (GHG) emissions (relative to 2018 levels) by 2030, with net-zero emissions no later than 2050.

South Dublin County Council (SDCC) aims to show leadership in working to meet, and surpass, these 2030 targets. Under SDCC's previous Climate Action Plan 2019-2024, we successfully achieved a 33% improvement in energy efficiency by 2020, which was the target set for public bodies. Looking ahead to 2030, and achieving the new target of 50% energy efficiency, **SDCC are already on track to meet this target as we have achieved a 42% improvement in energy efficiency, as of the end of 2021**.

To meet these targets requires ambitious reductions in GHG emissions and energy efficiency improvements in commercial, residential and public buildings. How we light our public areas also needs to be addressed, along with improving the resilience of the built environment to the effects of climate change.

SDCC'S KEY ACTION AREAS FOR ENERGY AND BUILDINGS

ENERGY AND BUILDINGS

- Organisational Energy Management and Innovation
- Improve Energy Efficiency and reduce Carbon Emissions in SDCC Buildings
- Alternative Energy Sources; Increase SDCC's renewable energy generation capacity.

20 ACTIONS

- Mainstreaming climate proofed solutions across SDCC through Governance

4 ACTIONS

Figure 5.1: SDCC's Key Action Areas for Energy and Buildings

ACTION AREA: ENERGY & BUILDINGS

DUBLIN REGION ENERGY MASTER PLAN

The Dublin Region Energy Master Plan (DREM) [23], prepared by Codema (Dublin's Energy Agency) under the SDCC Climate Action Plan 2019-2024, is the first regional energy master plan in Ireland. The master plan provides realistic, costed pathways for the Dublin region to achieve its carbon emission reduction targets to 2030 and 2050. These pathways have been based on detailed local-level, spatially driven energy scenario modelling and identify low-carbon technologies specific to the energy characteristics of a particular area at a local level.

The master plan addresses all energy sectors of electricity, heat and transport, and crucially has been modelled from a spatial perspective, technology perspective and also from a socio-economic perspective. This project also identifies and supports the use of low-carbon sources indigenous to Dublin, develops and harnesses new, local-level energy policy practices, and strengthens Ireland's integrated energy system modelling capabilities.

The master plan evaluated the possible local level low-carbon pathways to meet these national emissions targets. The low-carbon potential of Dublin has been based on its unique spatial energy characteristics, which are often overlooked when examining low-carbon pathways at a national level. This project is the first of its kind in Ireland and aligns with the objectives outlined in national level energy and climate change policy.

This master plan will continue to inform Dublin Local Authority strategies and plans.

ORGANISATIONAL ENERGY MANAGEMENT AND INNOVATION

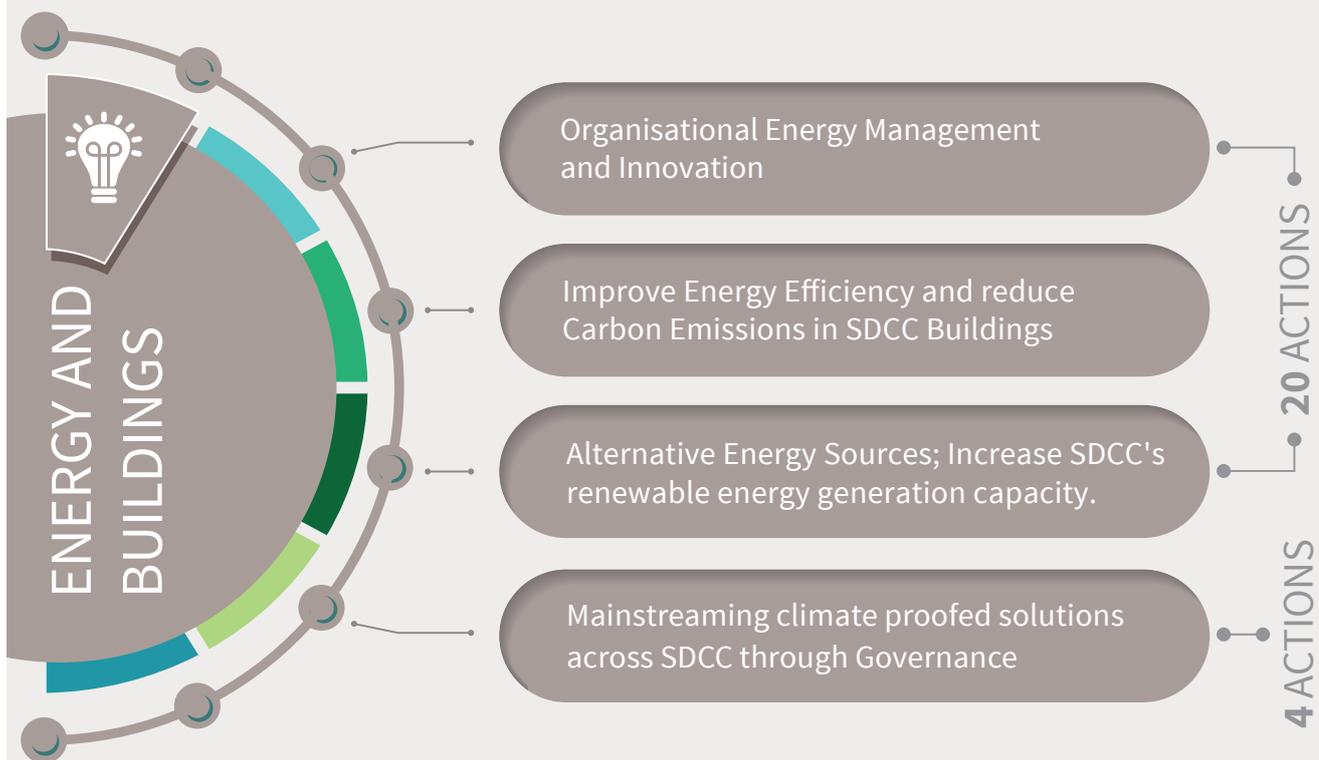SDCC has established an inter-departmental Energy Management Committee, with representatives from each of SDCC's Significant Energy Users (SEUs) and departments, to advance our focused approach to energy management in the organisation. This multidisciplinary team works with Codema to monitor and track energy performance in SDCC. With this information, the team can identify and deliver energy efficiency improvements and CO_2 emissions reductions across all Council operations (with a particular focus on the activities of significant energy users), to manage our 'Gap to Target' tool and to continue our progress to meeting the Council's 2030 energy target. SDCC aim to develop an energy management system required to achieve compliance with the ISO 50001 Energy Management standard.

WHAT DO WE MEAN BY 'GAP TO TARGET'?
The Gap to Target is an estimate, based on the baseline data, of the additional energy savings and the reduction in GHG emissions required by 2030 to reach the targets. The SEAI have developed a Gap to Target Tool which outlines each Local Authority's emissions targets and the modelled gap to meeting the targets. We can use this to inform our projects and plans.

Further information on SDCC's Significant Energy Users is outlined in this Climate Action Plan in the 'Evidence-Based Climate Action' section under 'South Dublin County Council's emissions profile'.

PUBLIC LIGHTING

Public lighting is SDCC's highest energy consumer, accounting for more than half of the Council's overall primary energy consumption at 51%. As public lighting upgrades are essential to SDCC achieving its energy efficiency target, SDCC is committed to achieving further energy reductions in this area. A key challenge is that as the region grows to support a rise in population, the quantity of lights increases. Thus, SDCC's focus is ensuring that existing public lighting is made more energy efficient, with a programme to replace Low Pressure Sodium (SOX) lamps and High Pressure Sodium (SON) lamps with more energy efficient Light Emitting Diode (LED) lamps.

The SDCC Public Lighting Energy Efficiency Project has been underway since 2014 and has upgraded 20,500 lanterns to date out of a total stock of 32,000. Within this stock of public lighting, there are currently less than 7,800 SOX lamps and less than 3,550 SON lamps remaining to be replaced. SDCC is continuing this programme in this Climate Action Plan.

Under SDCC's Climate Action Plan 2019–2024, the energy efficiency programme has resulted in 5,388 retrofits with new LED lamps, equating to an energy reduction of 12% of public lighting's overall energy consumption and a GHG emissions reduction of 256 tonnes of CO_2 up to the end of 2021, with the updated data for 2022, including an additional 2,350 retrofits, currently being reviewed and finalised by the SEAI Monitoring & Reporting (M&R) system.

Social Housing Scheme at Killinarden with solar panels installed.

IMPROVE ENERGY EFFICIENCY AND REDUCE CARBON EMISSIONS IN SDCC BUILDINGS

South Dublin County Council's buildings generate significant energy consumption and associated GHG emissions each year. Buildings and facilities were the second highest consumers across SDCC's total energy consumption, accounting for around 37%. As such, SDCC must improve the direct energy performance in its buildings between now and 2030 to meet the 2030 emissions reduction targets and net zero by 2050.

SDCC have a Building Decarbonisation Strategy to be implemented under this Climate Action Plan. The strategy sets out a pipeline of suitable energy efficiency and renewable energy projects for SDCC buildings, based on meeting 2030 targets. The most crucial buildings, with the greatest energy consumption, identified in the strategy pipeline comprise County Hall, County Library, Civic Theatre, Clondalkin Civic Offices, and Tallaght and Clondalkin Leisure Centres.

The Strategy is iterative, and the pipeline of projects will continue to evolve depending on the current status of buildings and the 'Gap to Target'. These projects will be delivered through the DeliveREE project, assisted by a project implementation unit established by Codema under DeliveREE.

The Strategy estimates that the total emission savings from all of the proposed SDCC projects will be 1,037 tonnes of CO_2 per year (using 2030 emissions factors) or 1,578 tonnes of CO_2 per year (using 2023 emissions factors). In terms of the gap to target, the projects are expected to contribute in the region of 79% towards SDCC's 2030 direct GHG emissions target.

DELIVEREE

The EU Horizon 2020 DeliveREE project will support the roll out of over €20M worth of energy projects in Dublin, working with SDCC and the three other Dublin Local Authorities. The DeliveREE project will support the retrofit of a range of council facilities such as leisure centres, theatres, libraries, offices, community buildings and landfill treatment sites. This pipeline of projects, which will prioritise the significant energy users, will be completed over the next four years and is expected to reduce carbon emissions in Dublin by almost 4,000 tonnes per year.

By creating a structured approach, DeliveREE aims to accelerate the formation of large-scale projects by standardising the project development process, allowing projects of various types and sizes to be aggregated to create scale. This enables the use of energy performance and energy supply contracts which guarantee performance. These contracts are essential for achieving value for money, providing a mechanism for the involvement of private capital and limiting the exposure of the local authority to cost overruns.

Codema is currently working with the local authorities and SEAI to secure Pathfinder funding towards the proposed projects to be delivered as part of DeliveREE. The SEAI-developed Pathfinder Scheme will provide capital support to public bodies and prioritises complete approaches to building retrofits to at least BER 'B' standard, using renewable heating systems.

ACTION AREA: ENERGY & BUILDINGS

SOCIAL HOUSING RETROFITS

All new social houses are developed to Near Zero Energy Building Standard, and the upgrading of existing social housing stock in South Dublin to B2 BER Standard is well underway. The Government launched a revised Energy Efficiency Retrofitting Programme for social housing upgrades in 2021. The programme has an overall target of 36,500 social houses nationally to be upgraded to a BER rating of B2. The revised programme provides significant upscaling in the levels of funding available in line with the Programme for Government commitments. It focuses on ensuring that the fabric of the home is upgraded, and an energy efficient heating system is provided. This enables local authorities to move to a 'deeper retrofit' programme, which result in significant energy and cost savings and improved comfort levels for residents.

No specific 2030 target has been confirmed for each individual Local Authority, however, based on SDCC having approximately 7% of the national social housing stock, it is expected a minimum target of 2,500 Energy Retrofit Upgrades to properties will be required by 2030.

SDCC has availed of maximum levels of funding under the programme, within the constraints of annual Government funding allocations made available to SDCC for social housing retrofits. LA's are notified annually of the allocated funding. Funding levels under this programme are expected to increase annually to deliver a total of 36,500 social houses nationally, retrofitted to BER B2 or equivalent, by 2030.

To date SDCC has completed works to 67 properties under the 2022 works programme, with a further 184 properties scheduled for completion in 2023. An additional 190 properties have been surveyed with design works completed to allow for works to commence in 2023 with final completions in 2024. SDCC's Housing Section are preparing framework agreements to allow for the completion of 500 properties per year, in anticipation of an increase in completion targets, subject to funding being made available by the Department of Housing, Local Government and Heritage.

ALTERNATIVE ENERGY SOURCES - INCREASE SDCC'S RENEWABLE ENERGY GENERATION CAPACITY

There is an overreliance on imported fossil fuels nationally. The electrification of heat and transport has been identified as a key strategic pathway to meet the national climate objective, and the National CAP23 includes a commitment that 80% of our electricity needs will come from renewable sources by 2030 [10]. There is significant potential for the production of electricity from renewable sources for consumption by SDCC, such as solar photovoltaics (PV) and district heating schemes, which can reduce our reliance on grid electricity.

Solar Photovoltaics (PV)

Projects are progressing to install solar photovoltaics (PV) on the rooftops of appropriate SDCC buildings (such as community centres and libraries), to generate electricity for the building, reducing its energy consumption, GHG emissions and operating costs.

Arthurstown Landfill site, managed by SDCC, has been identified as a proposed site for two potential Solar PV schemes:
- An initial 200kw Solar PV project to contribute to the energy consumption of the leachate treatment plant, that is required for the management of the landfill.
- A larger commercial PV farm, to export renewable energy to the grid.

SDCC are progressing the development of these schemes. Additional applications of solar PV in South Dublin will be considered.

District Heating

The National CAP23 includes targets for the supply of up to 2.5 terawatt-hours (TWh) of district heating nationally to decarbonise residential heating [10]. A district heating scheme consists of an insulated pipe network, allowing heat generated from a single or several larger centralised sources to be delivered to multiple buildings. The Dublin Region Energy Masterplan (DREM) noted that district heating could potentially supply 87% of Dublin's heat demand by 2050 [23]. SDCC, working with Codema, have successfully delivered phase 1 of the Tallaght District Heating scheme (see case study below for further information), with plans to expand being further developed. The DREM proposed that the Grange Castle and Clonburris areas may represent further opportunities in terms of district heating with the feasibility of this to be investigated.

SDCC will also facilitate the improvement of transmission grid infrastructure, where possible, to enable the decarbonisation of the electricity, heat and transport sectors.

Tallaght District Heating Scheme

SDCC has established Ireland's first publicly owned, not-for-profit energy company. Trading as Heatworks, it is providing low-carbon heat to public buildings in the Tallaght area since April 2023. The development of this innovative, low-carbon initiative has been led by SDCC with the assistance of its energy agency, Codema.

The district heating network will initially provide heat to 32,800m^2 of public buildings, including County Hall, Tallaght County Library, the SDCC Innovation Centre- Work IQ, and 133 affordable apartments (the construction of which commenced in April 2023, and which will be connected in early 2025). The university buildings include the Main Building, the Sports-Science, Health and Recreation Building, followed by the new Catering College (CAET), to be completed in 2024.

The network uses excess heat from Amazon Web Services' (AWS) data centre to provide low carbon heat to the network customers, currently SDCC and Technological University Dublin (TU Dublin). AWS has included heat-collection systems in their new facility which provides this recycled heat at no cost as part of its broader sustainability commitments. HeatWorks will assist Ireland in meeting its EU 2030 national heating and carbon-reduction targets. It is estimated that in this first phase of delivery, the carbon emissions reduction in the Tallaght area will be over 1,500 tonnes per year.

For the initial period of January to March 2023 there has been a 21.4% reduction in gas usage in County Hall. Further reductions in overall energy consumption are anticipated once additional data is available.

CITY EDGE PROJECT – A MAJOR NEW URBAN QUARTER ON THE EDGE OF DUBLIN CITY

The City Edge Project is a joint initiative by South Dublin County Council (SDCC) and Dublin City Council (DCC) to reimagine the Naas Road, Ballymount and Park West areas of Dublin as a new Urban Quarter providing up to 40,000 homes and 75,000 jobs. At 700 Hectares, the scale of the project makes it unique in Ireland and one of the largest redevelopment opportunities in Europe.

The brownfield lands are located at the western edge of Dublin City, within the M50 and only 15 minutes from the City Centre, creating a unique opportunity for sustainable compact growth. The area as now envisaged has the potential to make a significant contribution to the delivery of much needed new homes and jobs, while also generating significant climate, social and economic benefits for the country.

The project was awarded URDF (Urban Regeneration and Development Fund) funding for the preparation of a non-statutory Strategic Framework published in August 2022, which sets out a high-level vision for the regeneration of the area to 2070.

The City Edge project has a range of ambitious Strategic Objectives with climate resilience at their core including:

- **Follow compact growth and 15-minute city principles**
  - o Create a compact urban environment with an active travel focus, that supports the health and wellbeing of residents, through access to opportunities, services, resources, and green and natural amenities.

- **Target 50% green cover**
  - o Target 50% green cover to meet the needs of the future population while promoting a reintroduction of biodiversity and combating climate change impacts such as flood risk.

- **Focus development on the provision of active travel and public transport**
  - o Ensure Transport Oriented Development by focussing new mixed-use and compact urban development on enhanced active travel and public transport corridors.

- **Fast-track to zero carbon and zero waste**
  - o Fast track to zero carbon and zero waste to help address climate change and promote sustainable communities through the 15-minute city principle.

The Strategic Framework is a high-level vision for the future of City Edge up to 2070. The next steps in implementing the project involve planning for the shorter-term future of the area: - Proposed Variations (changes) will be made to the SDCC and DCC Development Plans which will give a statutory basis to the City Edge project and which will refine the plans for the area. Background analysis to inform future planning includes a feasibility study on energy provision and management, and studies addressing urban design, movement and green infrastructure. As per the strategic objectives of the project, climate action measures will be at the core of the future plans. These will include transport-oriented development, compact growth, 15-minute city principles, multi-functional green infrastructure and sustainable drainage systems (SuDS).

For more detailed information please visit https://cityedge.ie/ or look at:
https://cityedge.ie/strategic-framework-summary-booklet/
https://cityedge.ie/wp-content/uploads/2022/08/City-Edge-Strategic-Framework-August-2022-Final.pdf

ADDITIONAL BENEFITS TO A REDUCTION IN ENERGY AND BUILDINGS RELATED EMISSIONS

The actions to reduce GHG emissions and improve energy efficiencies can result in other benefits for South Dublin and Ireland, including but not limited to:

- Improved energy independence and energy security (and wealth retention) through improved energy efficiencies and development of large-scale renewable energies in Ireland.

- Solidarity with European partners on the Climate agenda and demonstrating National leadership in the area.

- Improvements in residential building energy efficiencies and the way we heat our homes resulting in better quality, healthier and more comfortable homes, and efficient use of resources.

- Improving the national residential building stock and making solutions more accessible will play a part in the Just Transition for all.

- Improvements in residential and commercial building energy efficiencies resulting in the development of new construction sector jobs and training.

- Improvement in building energy efficiencies and renewable energies will foster innovation in the public and private sectors.

ENERGY & BUILDINGS

Ref.	Action	Tracking Measure	Timeframe	Adaptation / Mitigation	SDCC Role	Lead Department(s)	Partner(s) Identified
Organisational Energy Management and Innovation							
E1	Embed an organisational energy/building management system in SDCC, ensuring compliance with relevant standards, obligations, and reporting requirements, with the aim to achieve ISO50,001.	Number of Energy Committee Meetings held	Planned Commencement: Ongoing. Duration: until 2029.	Mitigation	Full Accountability	Environment, Water and Climate Change (EWCC)	All SDCC Departments; Codema.
E2	As part of SDCCs Energy Management, work with the Significant Energy Users and each Department, to make SDCC as energy efficient as possible.	Energy consumption for each Significant Energy User	Planned Commencement: Ongoing. Duration: until 2029.	Mitigation	Full Accountability	EWCC	All SDCC Departments; Leisure Centre Management; Codema
E3	Complete the Public Lighting SOX Upgrade Programme, for the replacement of all SOX (low pressure sodium lamps) with energy efficient LEDs. (Refer to Note A below)	Number of SOX lights upgraded; % of LED lights in total stock	Planned Commencement: Ongoing. Duration: until 2029.	Mitigation	Full Accountability	Land Use, Planning and Transportation (LUPT) - Public Lighting	
E4	Complete the Public Lighting SON Upgrade Programme, for the replacement of all SON (high pressure sodium lamps) with energy efficient LEDs. (Refer to Note B below)	Number of SON lights upgraded; % of LED lights in total stock	Planned Commencement: Ongoing. Duration: until 2029.	Mitigation	Full Accountability	LUPT - Public Lighting	
E5	Develop a method, process, or tool, for SDCC to assess the whole Lifecycle Analysis (LCA) of buildings and infrastructure to understand the overall impact during its life cycle.	Rollout of tool; Number of projects utilising tool	Planned Commencement: 2024. Duration: 2025.	Mitigation	Full Accountability	Architectural Services	EWCC - Climate Action
E6	Develop, or procure, a tool to be used for high level assessments of embodied carbon in SDCC projects at design stage.	Rollout of Tool; Number of projects utilising tool	Planned Commencement: 2025. Duration: 2025.	Mitigation	Full Accountability	Architectural Services	EWCC - Climate Action
E7	Decarbonise, where feasible, plant and hand held tools.	% or Number of plant decarbonised; Tonnes of CO_2 emissions reduced	Planned Commencement: 2024. Duration: until 2029.	Mitigation	Full Accountability	EWCC - Public Realm	EWCC - Climate Action, Mechanical Services
Improve Energy Efficiency and reduce Carbon Emissions in SDCC Buildings							
E8	Progress Energy Performance Contracts (EPC) to deliver energy efficiency targets for SDCC owned buildings with significant energy usage, including the Leisure Centres, County Hall and Library, and Clondalkin Civic Offices.	EPC awarded; Measurement and verification of savings	Planned Commencement: Ongoing. Duration: until 2029.	Mitigation	Full Accountability	EWCC - Climate Action, Energy	CODEMA, Housing, Social and Community Development (HSCD); Corporate Performance and Change Management (CPCM); Leisure Centre Management
E9	Progress energy efficiency works, including retrofits, in Council owned and operated buildings, such as Libraries and Community Centres, that fall outside of a potential EPC contract.	Number of retrofit / improvement projects	Planned Commencement: Ongoing. Duration: until 2029.	Mitigation	Full Accountability	Architectural Services	EWCC - Climate Action

ENERGY & BUILDINGS

Ref.	Action	Tracking Measure	Timeframe	Adaptation / Mitigation	SDCC Role	Lead Department(s)	Partner(s) Identified
E10	Retrofits of the Council's housing stock, prioritising energy efficiency upgrades in areas that have been identified in the Dublin Region Energy Masterplan as being energy poor. (Refer to Note C below)	% of overall housing stock upgraded; Number of housing units upgraded to meet a minimum B2 BER Rating; Number of heat pumps installed	Planned Commencement: Ongoing. Duration: until 2029.	Mitigation	Full Accountability	HSCD	Department of Housing, Local Government and Heritage (DHLGH)
E11	Develop tenant energy awareness toolkit to provide climate / energy awareness and training for the operation of the new energy systems installed.	Toolkit developed; Number of tenants provided with energy saving tips	Planned Commencement: 2024. Duration: until 2024.	Mitigation	Full Accountability	HSCD	
E12	Develop the sensitive retrofit of historic / protected structures across South Dublin with the aim of improving energy efficiency and building climate resilience. (Refer to Note D below)	Number of sites retrofitted as part of any upgrades to Council owned Protected Structures	Planned Commencement: 2024. Duration: until 2029.	Mitigation	Full Accountability	LUPT; Architectural Services	
E13	Identify and progress opportunities to improve energy efficiencies in Tallaght Stadium and SDCC sports grounds with external floodlights. (Refer to Note E below)	Reduction in energy consumption	Planned Commencement: Ongoing. Duration: until 2029.	Mitigation	Full Accountability	Economic Enterprise and Tourism Development (EETD); EWCC - Public Realm	
Alternative Energy Sources; Increase SDCC's renewable energy generation capacity							
E14	Install Solar PV on suitable SDCC owned buildings, focusing on Community Centres and Libraries, and examine the potential for installation on other assets. (Refer to Note F below)	Number of buildings with solar pv installed; kWh of electricty generated	Planned Commencement: Ongoing. Duration: until 2028.	Mitigation	Full Accountability	HSCD, EETD	EWCC - Climate Action; Codema
E15	Investigate opportunities to install solar panels at Depots (roofs / solar car port etc), with the aim of supplying renewable energy to offset the expected increase in consumption due to the planned fleet decarbonisation and associated EV charging. (Refer to Note G below)	Number of buildings with Solar PV installed; kWh of electricity generated	Planned Commencement: 2024. Duration: until 2029.	Mitigation	Full Accountability	EWCC	Architectural Services
E16	Maintain the operation and monitoring of the Tallaght District Heating Scheme, and progress the further expansion of the Tallaght District Heating Scheme. (Refer to Note H below)	Tonnes CO_2 saved; Thermal energy exported from District Heating Scheme	Planned Commencement: Ongoing. Duration: until 2029.	Mitigation	Full Accountability	EWCC	Codema
E17	Develop proposals for futher district heating schemes, including Clonburris and Grange Castle. (Refer to Note I below)	Proposals developed; Implementation plan developed	Planned Commencement: Ongoing. Duration: until 2029.	Mitigation		Architectural Services	

ENERGY & BUILDINGS

Ref.	Action	Tracking Measure	Timeframe	Adaptation / Mitigation	SDCC Role	Lead Department(s)	Partner(s) Identified
E18	Deliver Arthurstown Landfill Solar PV Project to generate renewable energy for consumption on site. (Refer to Note J below)	Delivery of Project; Reduction in carbon emissions % of total energy consumed that was renewable energy	Planned Commencement: Ongoing. Duration: until 2024 / 2025.	Mitigation	Full Accountability	EWCC - Waste Management	EWCC - Climate Action; Codema
E19	Investigate the feasibility of developing a commerical scale Solar PV plant at Arthurstown Landfill site and look to progress any feasible recommendations. (Refer to Note K below)	Delivery of Study; Recommendations progressed	Planned Commencement: Ongoing. Duration: until 2024/2025.	Mitigation	Full Accountability	EWCC - Waste Management	EWCC - Climate Action; Codema
E20	Identify sites or opportunties for trialling renewable energy projects. (Refer to Note L below)	Initial feasibility Study delivered and follow-up delivered every 2 years	Planned Commencement: Ongoing. Duration: until 2024 / 2025	Mitigation	Full Accountability	All SDCC Departments	EWCC - Climate Action
Mainstreaming climate proofed solutions across SDCC through Governance							
GOV1	Support the Elected Members and Strategic Policy Committees (SPCs) in their leadership role for climate actions.	Number of climate related briefings/ events provided	Planned Commencement: Ongoing. Duration: until 2029.	Mitigation	Full Accountability	EWCC - Climate Action	
GOV2	Ensure Green Public Procurement (GPP) implementation in all SDCC tenders as part of the scored quality assessment, in order to source goods, services and works with a reduced climate and envionmental impact. Provide relevant GPP training for staff.	% of Tenders including GPP; % of Tenders including GPP as a scored criterion; Number of staff to complete training.	Planned Commencement: Ongoing. Duration: until 2029. Training rollout by Q4 2024.	Mitigation	Full Accountability	CPCM - Procurement	All SDCC Departments
GOV3	Ensure that all new SDCC Projects are assessed for the feasibility of incorporating climate actions and measures, with a focus on energy, greenhouse gas emissions, nature based Sustainable Drainage Systems (SuDS), enhancing and retaining Green Infrastructure (GI), biodiversity, sustainable transport and modal shift, EV charging, and environmental protection and co-benefits.	Number of projects proofed for SuDS / climate actions; Number of projects proofed for GI options; Number of projects proofed for active travel	Planned Commencement: Ongoing. Duration: until 2029.	Mitigation	Full Accountability	All SDCC Departments	LUPT; EWCC
GOV4	Ensure climate-proofing of all SDCC policies and strategies, including updates through liasion with the Climate Action Team	Number of policies / strategies climate proofed	Planned Commencement: Ongoing. Duration: until 2029.	Mitigation	Full Accountability	All SDCC Departments	EWCC - Climate Action

ENERGY & BUILDINGS

INTEGRATED ENVIRONMENTAL CONSIDERATIONS

Action E3 - Note A: Ensuring the augmented light features have lumen levels and spectral range consistent with existing or reduced/controlled to avoid effects to biodiversity.

Action E4 - Note B: Ensuring the augmented light features have lumen levels and spectral range consistent with existing or reduced/controlled to avoid effects to biodiversity.

Action E10 - Note C: Having due regard to environmental sensitivities such as local human receptors, European sites and biodiversity, and the need to appropriately protect and conserve protected structures.

Action E12 - Note D: Having due regard to the need to appropriately protect and conserve protected structures in accordance with relevant protected structures regulations, and the need to not negatively impinge on any protected species.

Action E13 - Note E: Ensuring the augmented light features have lumen levels and spectral range consistent with existing or reduced/controlled to avoid effects to biodiversity.

Action E14 – Note F: Where it is confirmed through a glint and glare assessment that such solar development will not have any potential glint and glare impact on sensitive receptors, or otherwise, where it is confirmed that such solar development constitutes exempted development under the Planning and Development Regulations by virtue of its size or location outside a Solar Safeguarding Zone.

Action E15 – Note G: Where it is confirmed through a glint and glare assessment that such solar development will not have any potential glint and glare impact on sensitive receptors, or otherwise, where it is confirmed that such solar development constitutes exempted development under the Planning and Development Regulations by virtue of its size or location outside a Solar Safeguarding Zone.

Action E16 – Note H: Having due regard to the need to protect sensitive aspects of the receiving environment, such as water bodies, biodiversity, flora and fauna, European sites and local population, from potential negative effects of development, including linear development associated with the project.

Action E17: Note I: Having due regard to the need to protect sensitive aspects of the receiving environment, such as water bodies, biodiversity, flora and fauna, European sites and local population, from potential negative effects of development, including linear development associated with the project.

Action E18: Note J: Where it is confirmed through a glint and glare assessment that such solar development will not have any potential glint and glare impact on sensitive receptors, or otherwise, where it is confirmed that such solar development constitutes exempted development under the Planning and Development Regulations by virtue of its size or location outside a Solar Safeguarding Zone; and having due regard to the need to protect sensitive aspects of the receiving environment, such as soils, water bodies, biodiversity and the local population, from potential negative effects of works and development associated with the project.

Action E19: Note K: Having appropriate regard to planning and environmental protection criteria.

Action E20: Note L: Having appropriate regard to planning and environmental protection criteria.

TRANSPORT

Public Transport and Active Travel improvement works in Templeogue Village.

Transportation has a critical role to play in our approach to climate change, as it contributes to a significant amount of greenhouse gas (GHG) emissions. In South Dublin, the transportation sector is the largest contributor to GHG emissions, with an estimated 42.5% of our total emissions. How we choose to travel for work, education, shopping or leisure has a big impact on Ireland's and South Dublin's GHG emissions; so, there are plenty of opportunities for positive change.

At a national level, the Climate Action Plan 2023 (CAP23) [10] sets out an ambitious target for the transport sector to reduce its emissions by 50% by 2030. CAP23 outlines the steps which will enable a radical, equitable transformation in how we travel over the next seven years to move towards the 50% reduction in carbon emission by 2030, and a fully decarbonised transport sector by 2050.

This is a challenging target - Ireland is undeniably dependant on private cars, both in an urban and rural setting and for both social and economic purposes. The 2022 Census [28] outlined that the number of people who drove to work increased by 4% to 1.2 million between 2016 and 2022 and the dominant form of transport for school children remained the car, with 55% of primary school and 42% of secondary school children being driven or driving to school.

The convenience of cars and the positive impact of mobility is tempered by the ever-present issues of traffic congestion, road safety, severance of towns, villages and communities, and that cars are a large contributor to both air and noise pollution in our towns, villages and cities.

South Dublin County Council (SDCC) has a target to reduce the Council's GHG emissions by 50% by 2030 and we have set out key objectives to address this target step by step. SDCC's objectives are intended to focus our work on the key areas of public transport, active travel and modal shift, SDCC fleet, and electric vehicle charging, with specific actions targeting each of these areas. The adaptation of our transport network to the impacts of climate change is considered with actions outlined under the objective of 'Road Construction, Maintenance and Infrastructure'.

Photo Source: South Dublin County Council

VEHICLE FACT FILE 2023

- Average Petrol car produces approx. 157g of CO_2 emission every km.

- Average diesel car produces approx. 149g of CO_2 emissions every km.

- Average electric vehicle (EV) produces approx.50g of CO_2 emissions every km (based on current electricity gird supply in Ireland).

- Average electric vehicle (EV) produces approx. 18g of CO_2 emissions every km (based on the projected electricity gird supply in Ireland in 2030).

Rule of thumb - the larger the car, the more the emissions! SUVs generally use 20% more fuel than equivalently sized traditional cars - this is true for both internal combustion engine (ICE) and electric SUVs.

Looking at the full life cycle of EVs, battery technology is rapidly evolving and becoming less resource and energy intensive in its production. Over the full vehicle lifecycle, EVs generate much less CO_2 emissions than ICE vehicles.

(Figures referenced from Dublin Region Energy Masterplan) [23]

SDCC'S KEY ACTION AREAS TO ADDRESS TRANSPORT RELATED EMISSIONS

TRANSPORT

Public Transport in South Dublin

Promoting Active Travel in South Dublin

Embedding Modal Shift in our Communities, and Safety & Accessibility

SDCC Fleet and Staff Mobility to, from, and during work

Electric Vehicle Charging

Roads Construction, Maintenance, & Infrastructure

Mainstreaming climate proofed solutions across SDCC through Governance

29 ACTIONS

4 ACTIONS

Figure 5.2: SDCC's Key Action Areas to address Transport related emissions.

SDCC OPERATIONS

South Dublin County Council's fleet is made up of approximately 250 vehicles, which are predominately internal combustion engine (ICE) vehicles, and which accounted for 9.1% of the Council's total emissions in 2021. This demonstrates an opportunity to review the approach to SDCC's current fleet requirements to reduce our GHG emissions.

As part of our ongoing climate action work, SDCC have developed a Fleet Transition Strategy, which includes five-year and ten-year targets to decarbonise the fleet and ensure the 2030 emission targets are met, through the approach of Avoid-Shift-Improve, as illustrated in Figure 5.3.

1

AVOID
Reduction of energy and fuel use within the current fleet

2

SHIFT
Shift travel to more sustainable modes, public and active travel

3

IMPROVE
Improve Energy Efficiency through adaption of new technology

Figure 5.3: Avoid-Shift-Improve approach to managing our fleet

ELECTRIC BICYCLES

SDCC introduced electric bicycles for use by park rangers in Tymon Park and Corkagh Park, to transition to active travel from traditional modes of transport. The e-bikes reduce GHG emissions and provide the rangers with greater access and visibility of the parks. They allow for easier interaction with Park Users, while minimising the disruption that larger vehicles can cause.

ACTIVE TRAVEL IN SOUTH DUBLIN

Active Travel is making a journey by Walking, Cycling or similar sustainable modes (think skateboards, roller skates, non-motorised scooters).

SDCC are working to progress opportunities to make cycling and walking more attractive and target common reasons that people chose not to cycle; with the aim to make South Dublin one of Ireland's most cycle friendly counties.

It is critical to provide people of all ages and abilities with a well-connected, well designed, and safe cycle network with bicycle parking, that offers people a credible alternative to using the car. Pedestrian improvements will continue to be implemented. These actions, in conjunction with other transport related measures, will encourage a modal shift across our communities. Initiatives, awareness and education campaigns, such as primary school cycle training, Cycling Without Age, etc. also have a role to play.

Cycle South Dublin (CySD) [32] is an ambitious programme of ongoing work, supported by the NTA and Central Government, that reflects the increasing importance of making cycling a realistic and integral part of how people move around the County. It proposes a set of 45 routes that would deliver approximately 260km of new and improved cycle lanes over the next ten years.

The 2022 Census indicated some positive trends towards active travel nationally, with 88% more primary school children commuting by bicycle in 2022 than in 2016, and the number of students aged 13 to 18 cycling to school up 79%.

CASE STUDY

Cycle South Dublin (CySD) - Progress

The Cycle South Dublin Programme commenced in 2021. Since then, there has been significant progress on over 30 projects with an investment of approximately €26.4M between 2021 and 2022. Several key projects have been completed to date:

- Dodder Greenway (Dodder Greenway Bridges and Greenway links)
- Tallaght Village to Dodder Valley
- Greenhills Road to Dodder Valley
- N81 Jobstown Junction cycling and walking track
- Grange Road
- Belgard North Link Road
- Celbridge Link Road
- Fortunestown Lane Light Segregation Scheme
- Avonbeg Road
- Monastery Road

The CySD programme identifies and sets out the cycle priorities in South Dublin under the following categories:

- EXISTING (increased cycle safety and maintenance upgrades of existing cycle lanes and streets)
- NOW (progress projects within the next 2 years),
- SOON (progress projects within the next 5 years),
- LATER (progress projects within the next 8 years), and
- Bus Connects will deliver a range of cycle improvements to be delivered by the NTA.

Details of the projects outlined in each category, and updates on project progress, can be found on the SDCC Active Travel website, at the following link: **https://www.sdcc.ie/en/active-travel/**

Interactive GIS maps showing all active travel routes are also available on the website.

PUBLIC TRANSPORT

The Greater Dublin Area Transport Strategy 2022-2042, developed by the National Transport Authority (NTA), aims to *"provide a sustainable, accessible and effective transport system for the Greater Dublin Area which meets the region's climate change requirements, serves the needs of urban and rural communities, and supports the regional economy."* [29]

SDCC will continue to work with the relevant transportation bodies (including the National Transport Authority (NTA), Transport infrastructure Ireland (TII), Dublin Bus, Luas, Irish Rail, Bus Éireann, and Road Safety Authority (RSA)) to facilitate and provide support in delivering major improvements to the public transport network, and measures to achieve modal shift. Key projects include, Bus Connects, DART+, Luas capacity, transport hubs, and new and enhanced rail stations.

Since the prior transport strategy was approved by Government in 2016, the NTA, along with the Councils, other transport delivery agencies and transport operators, have worked hard to build and develop that strategy's projects and proposals. Major progress in the last four years includes:

- The share of people travelling into Dublin City Centre by sustainable modes in the morning peak period has increased from 66% in 2015 to 72% in 2019.
- The number of cars entering the city centre between 7am and 10am has fallen from 65,000 in 2015 to 58,000 in 2019, while the total person trips has increased from under 200,000 to 217,000 over the same period.
- The total passengers carried daily by Irish Rail services in the Dublin region rose from 28 million in 2015 to over 35 million in 2019, with its peak hour mode share also growing.
- The total passengers carried by Metropolitan bus services annually in Dublin grew from 120 million in 2015 to 153 million in 2019.
- The total passengers carried by Luas grew from 35 million in 2015 to 48 million in 2019.
- The 2019 Customer Satisfaction Survey carried out on behalf of the NTA showed 87% of public transport users to be satisfied with their public transport services.

Source: National Transport Authority (2022). "Greater Dublin Area Transport Strategy 2022-2042". www.nationaltransport.ie

ELECTRIC VEHICLES (EVS)

Where a transition to public transport or sustainable active travel modes is not feasible, Electric Vehicles (EVs) can play a part in reducing the carbon emissions associated with internal combustion engine (ICE) vehicles. As EVs become more mainstream there is an increasing demand for home charging solutions as well a seamless public charging network.

To reflect this understanding, Zero Emissions Vehicles Ireland (ZEVI) was established in 2022 to support the delivery of a national EV charging network as part of the Governments Electric Vehicle Charging Infrastructure Strategy 2022-2025 [30], and to further assist citizens, the public sector, and businesses to continue to make the switch to zero emission vehicles.

The National target is to have an expected 30% of our private car fleet switched to electric by 2030, in conjunction with Ireland's target to facilitate a large-scale deployment of renewable energy to decarbonise Ireland's power sector with a 75% reduction in emissions by this date.

The Dublin region represents approximately 25% of Ireland's car fleet and so has a significant role to play in the decarbonisation of the country's transport system. SDCC, in conjunction with the three Dublin Local Authorities have developed the Dublin Local Authority Electric Vehicle Charging Strategy (2022-2030) [31] to support the transition to electric vehicles. It sets out the Local Authorities roll in facilitating a coordinated approach to the deployment of EV charging infrastructure. Work has begun, in conjunction with ZEVI, on implementing the strategy and will continue under this Climate Action Plan.

ZERO EMISSION VEHICLES IRELAND

Zero Emission Vehicles Ireland (ZEVI) coordinates measures to support the uptake of zero emission vehicles and the rollout of charge point infrastructure to accelerate progress towards Ireland's ambitious electric vehicle targets committed to in the Climate Action Plan 2021.

It has an objective voice on zero emission vehicles, providing advice to both public and private sectors and carrying out significant stakeholder engagement. The Office works across government, industry and society to support the transition to zero emission vehicles.

Its operations include:

- Supports for uptake of zero emission vehicles.
- infrastructure delivery through funding and policy guidance.
- Strategy and policy lead, including taxation and regulation.
- Research and innovation.
- Communications and public and stakeholder engagement.

ADDITIONAL BENEFITS TO A REDUCTION IN TRANSPORT RELATED EMISSIONS

The actions to reduce GHG emissions from transportation can result in other benefits for South Dublin, including but not limited to:

- **Benefits of a modal shift:** A reduction in air pollution resulting in cleaner air and a reduction in vehicle related noise pollution in our urban areas. People walking and cycling instead of driving in the Dublin Metropolitan Area improves air quality saving annually 630,000 Kg of NOx and 25,000kg of particulates (PM10 and PM2.5).

- **Cycling Environmental Benefits:** Cycling can help reduce traffic congestion. 48,000 return cycling trips are made daily in the Dublin Metropolitan Area (an area with an estimated population of 1,408,000) by people that could have used a car. If these cars were all in a traffic jam it would tail back 229km.

- **Active Travel Benefits:** Health Benefits on a recent long term health study done in the Dublin Metropolitan Area identified that walking prevents 2,731 serious long-term health conditions each year, and the physical benefits of walking prevented 547 deaths annually.

- **Cycling Health Benefits:** Cycling in Dublin Metropolitan Area prevents 476 serious long-term health conditions each year. In Dublin Metropolitan Area the physical activity benefits of cycling prevents 42 early deaths annually.

- **Pedestrian Economic Benefits:** In Dublin Metropolitan Area, the net annual economic benefit for individuals and society from all walking and wheeling trips is €796 Million. Of this total, €169.8 million per year is from people with a car choosing to walk for transport.

- **Cycling Economic Benefits:** In Dublin Metropolitan Area, the net annual economic benefit for individuals and society from all cycling trips is €311.4 million. Of this total, €162.1 million per year is people with a car choosing to cycle for transport.

(Reference: National Transport Authority (NTA). 'Dublin Metropolitan Area Walking and Cycling Index 2021'.) [33]
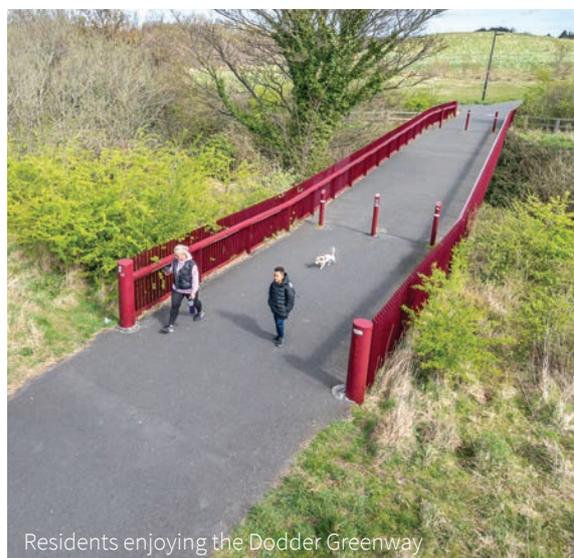
Residents enjoying the Dodder Greenway

TRANSPORT

Ref.	Action	Tracking Measure	Timeframe	Adaptation / Mitigation	SDCC Role	Lead Department(s)	Partner(s) Identified
Public Transport in South Dublin							
T1	Facilitate, support and guide national agencies in delivering major improvements to the public transport network, in particular Bus Connects, DART+, Luas capacity and new and enhanced rail stations. (Refer to Note A below)	Number of schemes engaged on	Planned Commencement: Ongoing. Duration: until 2029.	Mitigation	Co-ordinate & facilitate	Land Use, Planning and Transportation (LUPT)	Transport Infrastructure Ireland (TII); Irish Rail; National Transport Authority (NTA)
T2	Work with the NTA and TII to generate information on modal share changes with a focus on modal shift to public transport and active travel, and effectively communicate this information to the public.	Percentage modal share of Public Transport: Active Travel: Motorised Journeys generated in our County	Planned Commencement: Ongoing. Duration: until 2029.	Mitigation	Co-ordinate & facilitate	LUPT	TII; NTA
T3	To facilitate the provision of Park and Ride facilities in appropriate locations at transport nodes and along strategic transport corridors in accordance with the NTA Strategy, and encourage the inclusion of EV charge points and bike parking. (Refer to Note B below)	Number of schemes engaged on	Planned Commencement: Ongoing. Duration: until 2029.	Mitigation	Co-ordinate & facilitate	LUPT	LUPT - Planning
Promoting Active Travel in South Dublin							
T4	Deliver a safe active travel network for people of all ages and abilities through the implementation of the Cycle South Dublin programme, including on-road, off-road, and greenway routes. (Refer to Note C below)	Number of linear meters added	Planned Commencement: Ongoing. Duration: until 2029.	Mitigation	Full Accountability	LUPT	NTA
T5	Continue to promote active travel, for a wide range of ages, abilities and journey types, utilising SDCC's active travel website, social media and events such as an active travel promotional ePlatform.	Number of regular updates of our active travel website through SDCC social media	Planned Commencement: Ongoing. Duration: until 2029.	Mitigation	Full Accountability	LUPT	
T6	Maintain a high standard of active travel routes by ensuring regular cleaning and annual maintenance to encourage ongoing use. (Refer to Note D below)	Number of meters cleaned; Number of meters maintained	Planned Commencement: Ongoing. Duration: until 2029.	Mitigation	Full Accountability	LUPT	
T7	Working with the four Dublin Authorities, identify opportunities for the implementation of public bike sharing schemes, and powered personal transportation, in South Dublin supporting private operators.	Number of public bikes installed	Planned Commencement: Ongoing. Duration: until 2029.	Mitigation	Co-ordinate & facilitate	LUPT	EWCC - Climate Action; Public Bike Operators.
T8	Deliver a network of secure, public bicycle and powered personal transportation parking, to accommodate a variety of bike types across the County, including at schools, parks, playgrounds, towns, and villages.	Number of new parking stands installed	Planned Commencement: Ongoing. Duration: until 2029.	Mitigation	Full Accountability	LUPT	

TRANSPORT

Ref.	Action	Tracking Measure	Timeframe	Adaptation / Mitigation	SDCC Role	Lead Department(s)	Partner(s) Identified
T8	Deliver a network of secure, public bicycle and powered personal transportation parking, to accommodate a variety of bike types across the County, including at schools, parks, playgrounds, towns, and villages.	Number of new parking stands installed	Planned Commencement: Ongoing. Duration: until 2029.	Mitigation	Full Accountability	LUPT	
T9	Continue the development of pedestrian improvements, aligning with any Pedestrian Enhancement Plans developed for the Dublin Metropolitan area. (Refer to Note E below)	Number of improvements implemented	Planned Commencement: Ongoing. Duration: until 2029.	Mitigation	Full Accountability	LUPT	County and City Management Association (CCMA); Department of Housing; Local Government and Heritage (DHLGH); Department of Transport; NTA; TII
Embedding Modal Shift in our Communities, and Safety & Accessibility							
T10	Identify roads and streets suitable for road space reallocation and progress appropriate schemes. (Refer to Note F below)	Number of road space reallocations identified; Number of road space reallocations completed	Planned Commencement: Ongoing. Duration: until 2029.	Mitigation	Full Accountability	LUPT - Active Travel	DoT; NTA
T11	Implement the Safe Routes To School Programme and implement the School Streets Initiative. (Refer to Note G below)	Number of Safe Routes to School / school zones; Number of schools participating in School Streets Initiative	Planned Commencement: Ongoing. Duration: until 2029.	Mitigation	Co-ordinate & facilitate	LUPT - Active Travel	An Taisce; NTA
T12	Deliver the primary school cycle training programme.	Number of schools participating; Number of children participating	Planned Commencement: Ongoing. Duration: until 2029.	Mitigation	Full Accountability	LUPT	
T13	Ensure active travel schemes and initiatives make walking, and cycling more accessbile for all users, including those with reduced mobility, disabilities and the elderly, to further opportunities for increasing a sustainable modal shift. For example Cycling Without Age.	Number of schemes risk assessed; Number of initiatives; Number of Cycling Without Age bookings / Number of passengers carried / Number of km travelled	Planned Commencement: Ongoing. Duration: until 2029.	Mitigation	Full Accountability and Co-ordinate & facilitate	LUPT - Active Travel, Sports Partnership	
T14	Engage with car sharing scheme operators to increase the number of shared vehicles available in the County, with a focus on the provision of electric vehicles.	Number of locations	Planned Commencement: 2024. Duration: until 2029.	Mitigation	Co-ordinate & facilitate	LUPT - Transport, Planning	EWCC - Climate Action
T15	Carry out trials of traffic movements including street closures, one way systems, diversions and low traffic neighbourhoods to reduce traffic movement in certain areas. (Refer to Note H below)	Number of trials proposed; Number of trials progressed	Planned Commencement: 2024. Duration: until 2029.	Mitigation	Full Accountability and Influence	LUPT	LUPT - Planning; EWCC - Climate Action; all stakeholders

TRANSPORT

Ref.	Action	Tracking Measure	Timeframe	Adaptation / Mitigation	SDCC Role	Lead Department(s)	Partner(s) Identified
SDCC Fleet and Staff Mobility to, from, and during work							
T16	Implement the Council's Fleet Transition Strategy to identify efficiencies and rationalise the need for SDCC vehicles, and to decarbonise SDCC vehicles - guided by the Avoid-Shift-Improve approach.	Number of internal combustion engine (ICE) vehicles replaced by electric vehicles with the associated CO_2e reduction	Planned Commencement: 2024. Duration: until 2029.	Mitigation	Full Accountability	EWCC	
T17	Investigate the potential for alternative fuels for use in larger vehicles, before year 5 of the Fleet Transition Strategy, having appropriate regard to the lifecycle impacts and sustainability of alternative fuel options.	Report on options	Planned Commencement: 2024. Duration: until 2027.	Mitigation	Full Accountability	EWCC	
T18	Deliver an ongoing driver education programme to staff to promote efficient driving behaviours.	% of relevant staff that have completed the training	Planned Commencement: 2024. Duration: until 2028.	Mitigation	Full Accountability	Corporate Performance and Change Management (CPCM) - Training	EWCC Mechanical Services
T19	Aim to reduce kilometres travelled by private ICE vehicles within work hours and incentivise modes such as cycling, electric vehicles.	Number of km reduced	Planned Commencement: 2024. Duration: until 2029.	Mitigation	Full Accountability	CPCM	
T20	Establish an SDCC Mobility Hub for staff with decarbonised vehicle options to reduce the use of ICE vehicles.	Mobility hub established	Planned Commencement: 2024. Duration: until 2024.	Mitigation	Full Accountability	CPCM	EWCC - Climate Action; EWCC Mechanical Services
T21	Assess staff commuting patterns and identify opportunities to promote sustainable and active travel to, and from, work.	Staff survey undertaken and register of opportunities developed	Planned Commencement: 2024. Duration: until 2024.	Mitigation	Influence	EWCC - Climate Action	Smart Dublin; LUPT - Active Travel; All SDCC Departments and Staff
Electric Vehicle (EV) Charging							
T22	Implement the Dublin Local Authority Electric Vehicle Charging Strategy, (aligning with the National EV Charging Infrastructure Strategy 2022-2025). (Refer to Note I below)	Number of public charge points installed	Planned Commencement: Ongoing. Duration: until 2029.	Mitigation	Full Accountability	EWCC - Climate Action	Dublin Local Authorities; Codema; Zero Emission Vehicles Ireland (ZEVI); DoT; LUPT; Architectural Services
T23	For privately owned EV charge points, create an SDCC Policy & Standards Guidance for the installation of electric vehicle charge points in the public realm. (Refer to Note J below)	Guidance produced; Number of applications assessed	Planned Commencement: 2024. Duration: until 2024.	Mitigation	Full Accountability	LUPT	EWCC - Climate Action
Roads Construction, Maintenance, & Infrastructure							
T24	In road construction projects, minimise the use of virgin materials and promote the use of reclaimed asphalt pavement (RAP) or low carbon alterneratives. (Refer to Note K below)	Tonnes of virgin material replaced; % of material replaced	Planned Commencement: 2024. Duration: until 2029.	Mitigation	Full Accountability	LUPT	

TRANSPORT

Ref.	Action	Tracking Measure	Timeframe	Adaptation / Mitigation	SDCC Role	Lead Department(s)	Partner(s) Identified
T25	Review Roads Maintenance Process and materials for potential carbon reduction impact.	Annual update	Planned Commencement: 2024. Duration: until 2029.	Mitigation	Full Accountability	LUPT	
T26	Maximise use of renewable energy for road infrastructure including lights, signs and street furniture.	Number of units provided	Planned Commencement: Ongoing. Duration: until 2029.	Mitigation	Full Accountability	LUPT	
T27	Promote the use of alternative systems for the treatment of roads during cold weather.	Tonnes of carbon	Planned Commencement: 2024. Duration: until 2029.	Adaptation	Full Accountability	LUPT	
T28	Introduce process efficiencies/flexibility in the treatment of roads during cold weather to reduce number of call outs required.	Reduction in km travelled	Planned Commencement: 2024. Duration: until 2025.	Adaptation	Full Accountability	LUPT	
T29	When surveying existing road infrastructure, include for identification of climate vulnerabilities, such as flooding and urban heat island effect.	Number of issues identified	Planned Commencement: 2024. Duration: until 2029.	Adaptation	Full Accountability	LUPT	
Mainstreaming climate proofed solutions across SDCC through Governance							
GOV1	Support the Elected Members and Strategic Policy Committees (SPCs) in their leadership role for climate actions.	Number of climate related briefings / events provided	Planned Commencement: Ongoing. Duration: until 2029.	Mitigation	Full Accountability	EWCC - Climate Action	
GOV2	Ensure Green Public Procurement (GPP) implementation in all SDCC tenders as part of the scored quality assessment, in order to source goods, services and works with a reduced climate and enviornmental impact. Provide relevant GPP training for staff.	% of Tenders including GPP; % of Tenders including GPP as a scored criterion; Number of staff to complete training	Planned Commencement: Ongoing. Duration: until 2029. Training rollout by Q4 2024.	Mitigation	Full Accountability	CPCM - Procurement	All SDCC Departments
GOV3	Ensure that all new SDCC Projects are assessed for the feasibility of incorporating climate actions and measures, with a focus on energy, greenhouse gas emissions, nature based SuDS, enhancing and retaining Green Infrastructure, biodiversity, sustainable transport and modal shift, EV charging, and environmental protection and co-benefits.	Number of projects proofed for SuDS / climate actions; Number of projects proofed for GI options; Number of projects proofed for active travel	Planned Commencement: Ongoing. Duration: until 2029.	Mitigation	Full Accountability	All SDCC Departments	LUPT; EWCC
GOV4	Ensure climate-proofing of all SDCC policies and strategies, including updates through liasion with the Climate Action Team.	Number of policies / strategies climate proofed	Planned Commencement: Ongoing. Duration: until 2029.	Mitigation	Full Accountability	All SDCC Departments	EWCC - Climate Action

TRANSPORT

INTEGRATED ENVIRONMENTAL CONSIDERATIONS

Action T1 - Note A: Whilst advocating and exerting influence to ensure such projects promote climate action co-benefits and do not contravene relevant environmental protection criteria or cause significant negative environmental effects.

Action T3 - Note B: Whilst advocating and exerting influence to ensure such projects promote climate action co-benefits and do not contravene relevant environmental protection criteria or cause significant negative environmental effects.

Action T4 - Note C: Having due regard to environmental sensitivities such as the receiving water environment, local air quality, biodiversity, European sites, cultural heritage etc.

Action T6 - Note D: Having due regard to environmental sensitivities such as European sites and biodiversity.

Action T9 - Note E: Having due regard to environmental sensitivities such as European sites and biodiversity.

Action T10 - Note F: Having due regard to environmental sensitivities such as the receiving water environment, biodiversity, European sites, local air quality, cultural heritage etc.

Action T11 - Note G: Having due regard to environmental sensitivities such as local human receptors, Biodiversity, European sites, water quality and hydrology, and amenity value etc.

Action T15 - Note H: All such trials should be carried out in accordance with relevant traffic management guidelines and an appropriate traffic management plan to prevent the occurrence of adverse traffic and transport related effects.

Action T22 - Note I: Having due regard to environmental sensitivities such as the receiving water environment, biodiversity, European sites, local air quality, cultural heritage etc.

Action T23 - Note J: Having due regard to environmental sensitivities such as the receiving water environment, biodiversity, European sites, local air quality, cultural heritage etc.

Action T24 - Note K: Ensure all reuse of C&D waste/material complies with Waste Management legislation (e.g., Article 27 or 28 requirements) and does not create unintended negative environmental effects.

FLOOD RESILIENCE

Photo Source: South Dublin County Council . The Whitechurch Stream, South Dublin.

One of the effects of climate change that can be anticipated, and a key climate change adaptation issue, is the management of rainfall runoff as global temperature rises and rainfall patterns change. It is likely that severe weather events and sea level rise will have a considerable impact on flooding and flood risk for communities and infrastructure in Ireland.

While South Dublin is not greatly exposed to the risk of coastal flooding and erosion, climate change increases the frequency and duration of heavy rainfall events and storm surges, which pose a greater risk of pluvial and fluvial flooding in vulnerable areas of the county. Extreme rainfall and weather events can also place additional pressure on the urban drainage network, which can result in flooding.

THE MAIN RIVERS IN SOUTH DUBLIN ARE:

— **The River Dodder**

— **The River Griffeen**

— **The River Poddle**

— **The River Liffey**

— **The Camac River**

— **The Owendower River**

— **The Whitechurch Stream**
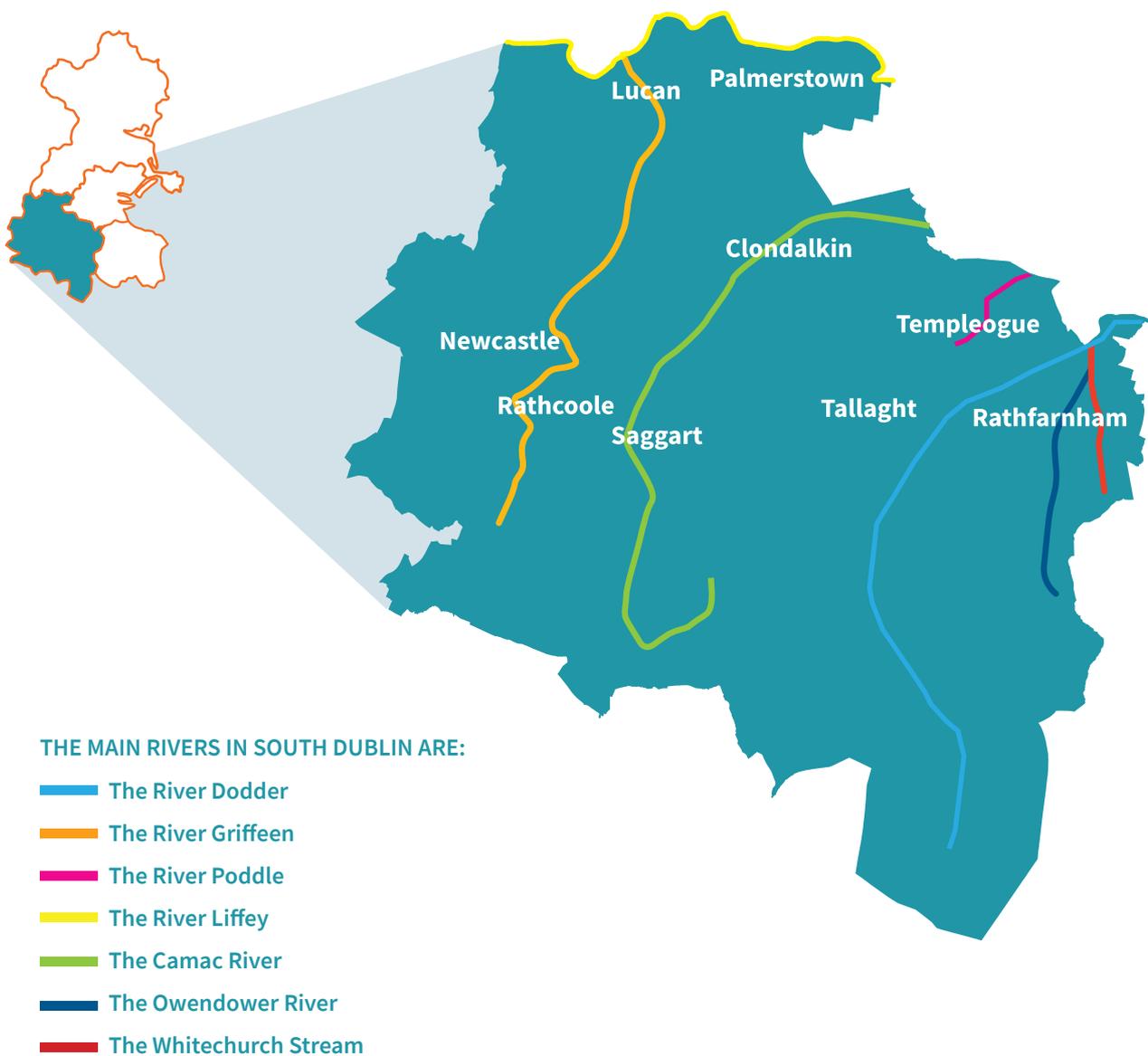
WHAT IS FLOODING?

Flooding is a natural phenomenon defined as a temporary covering by water of land not normally covered by water and is a natural process that can happen at any time in different locations.

Flooding in South Dublin can occur from a range of sources, individually or combined, including:

- Fluvial flooding (from rivers or streams)
- Pluvial flooding (from intense rainfall events and overland flow)
- Groundwater flooding
- Other sources, such as from blocked culverts

Photo Source: SDCC

Met Éireann has predicted that autumns and winters in Ireland may become wetter, with a possible increase in heavy precipitation events of approximately 20%, and that summers may become drier. However, the change in precipitation patterns in Ireland, particularly at a local level and for shorter (sub-seasonal) durations, remains uncertain and is the subject of ongoing research.

Climate change is not only reflected in terms of the average temperature, precipitation, etc., but also in the frequency and intensity of extreme weather conditions. The consensus among different modelling approaches is that extreme rainfall events are likely to increase in frequency in autumn and winter.

As an island country, an increase in the number of intense storms over the North Atlantic could have a direct impact on storm surges, although there is still uncertainty around the impact of storm surges. Coastal erosion can give rise to flood risk, and erosion rates will be increased in the future as sea levels rise.

Average Temperature increase up to **1.7°C** by **2050** across Ireland
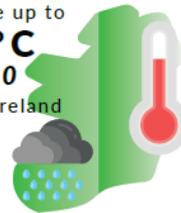
More intense storms predicted for Ireland

WETTER WINTERS **20%** INCREASE in precipitation DRIER SUMMERS

Global mean sea level rise of approximately **3.5cm** per decade (1993-2006)

Sea level rise has been accelerating

GLOBAL SEA SURFACE TEMPERATURE WARMED at 0.16°C per decade (1993-2015)
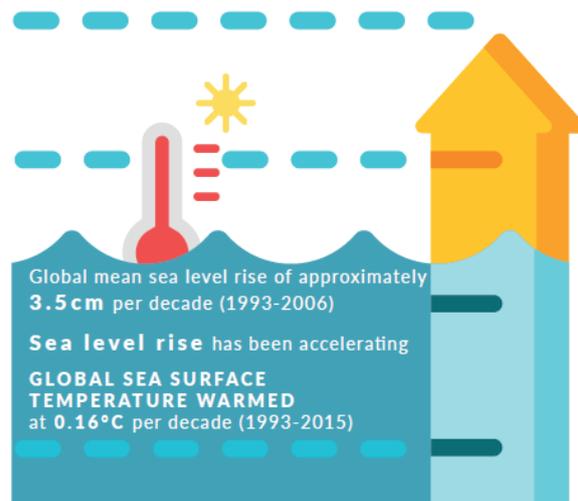
Figure 5.4: Current and future flood change risks [13]

SDCC'S KEY ACTION AREAS TO TARGET FLOOD RESILIENCE

FLOOD RESILIENCE

Adaptation to increased Flood Events (Flood Defence, Monitoring, Flood Response)

Implementation of Sustainable Drainage (SuDs) / Surface Water Management in South Dublin

Improved Maintenance of SuDS and the Stormwater, Surface Water, and Road Gully Networks

Mainstreaming climate proofed solutions across SDCC through Governance

15 ACTIONS

4 ACTIONS
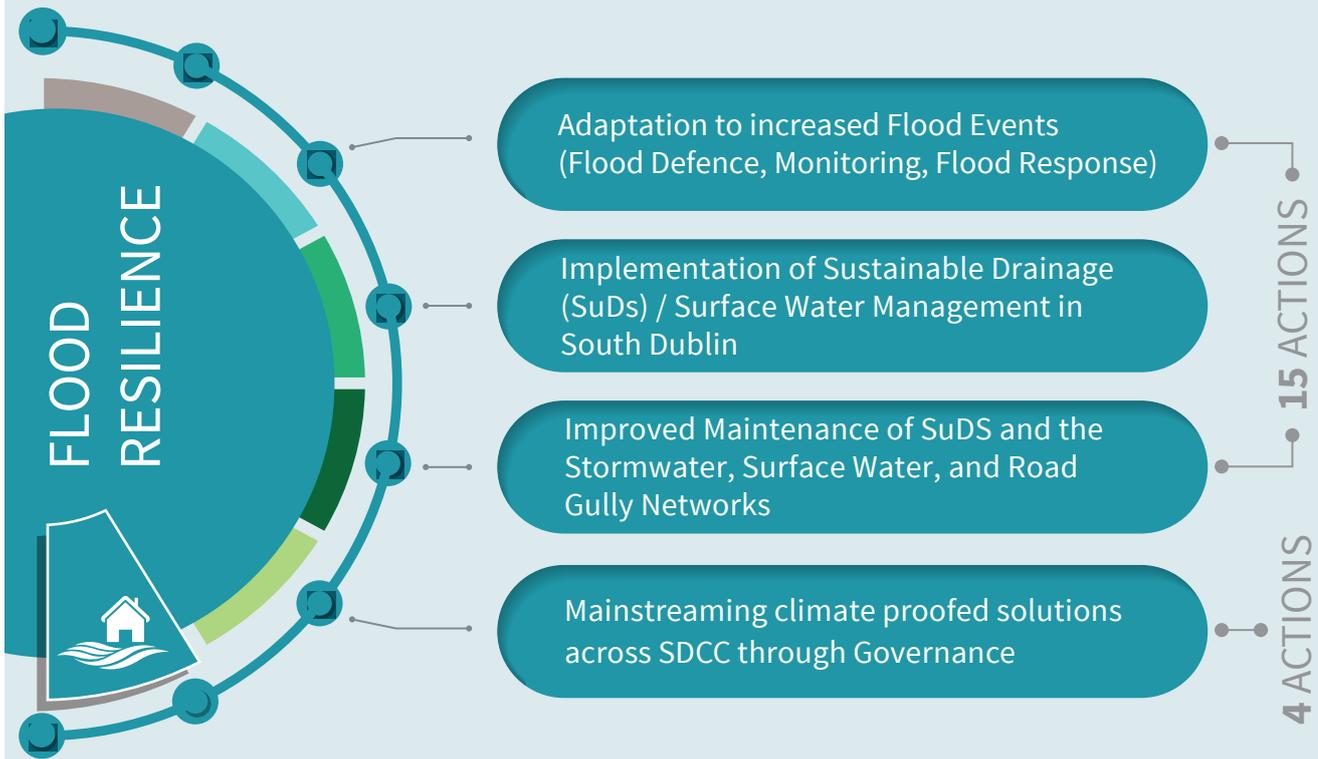
Figure 5.5: SDCC's Key Objectives to target Flood Resilience

ADAPTING TO INCREASED FLOOD EVENTS (FLOOD DEFENCE, MONITORING, FLOOD RESPONSE)

South Dublin County Council (SDCC) recognises the increased chances of flooding and its effects on our county and is working with the Office of Public Works (OPW) and neighbouring Local Authorities to implement projects and programmes that align with the EU Floods Directive [34] and the EU Water Framework Directive (WFD) [35]. These Directives call for member states to undertake strategic flood risk assessments and to employ Sustainable Drainage Systems (SuDS,) with an emphasis on nature-based solutions to be used in adaptation and mitigation responses to achieve resilience.

Some of the most significant works currently being progressed by SDCC in this regard are three flood alleviation schemes - the Whitechurch Stream Flood

Alleviation Scheme; the River Poddle Flood Alleviation Scheme; and the River Camac Flood Alleviation Scheme. These schemes look to combine building physical flood defences with nature-based solutions. For example, an integrated constructed wetland, the reintroduction of natural floodplains, the realignment of river stretches to provide natural storage, and the implementation of hydromorphic measures. These measures have benefits beyond flood defence, such as enhancing biodiversity, increasing habitats, and providing new spaces for recreation. Once constructed, these three schemes combined will protect an estimated 1,200 residential and commercial properties in South Dublin.

In addition to the large-scale flood relief schemes, SDCC has a programme of minor works schemes to investigate options to resolve localised recurring flood issues.

Whitechurch Stream Flood Alleviation Scheme (FAS)

SDCC, in partnership with the Office of Public Works (OPW), is progressing a project to manage flooding from the Whitechurch Stream in Rathfarnham. The Whitechurch stream was identified under the Dodder CFRAM project as being at risk of flooding during flood events that happen once in 100 years (1% AEP flood event). This is mainly due to low banks, overtopping of existing defences or insufficient floodplain capacity, and insufficient capacity at a number of bridges and culverts causing water to back-up and increase water levels upstream.

The €2M investment in this scheme will provide 275meters of flood defences to protect over 170 properties, including 150 homes and up to 20 businesses.

Planning permission was granted in November 2022. Construction of the scheme commenced in May 2023 and is expected to be completed in early 2025.

Further information is available www.whitechurchfas.ie.
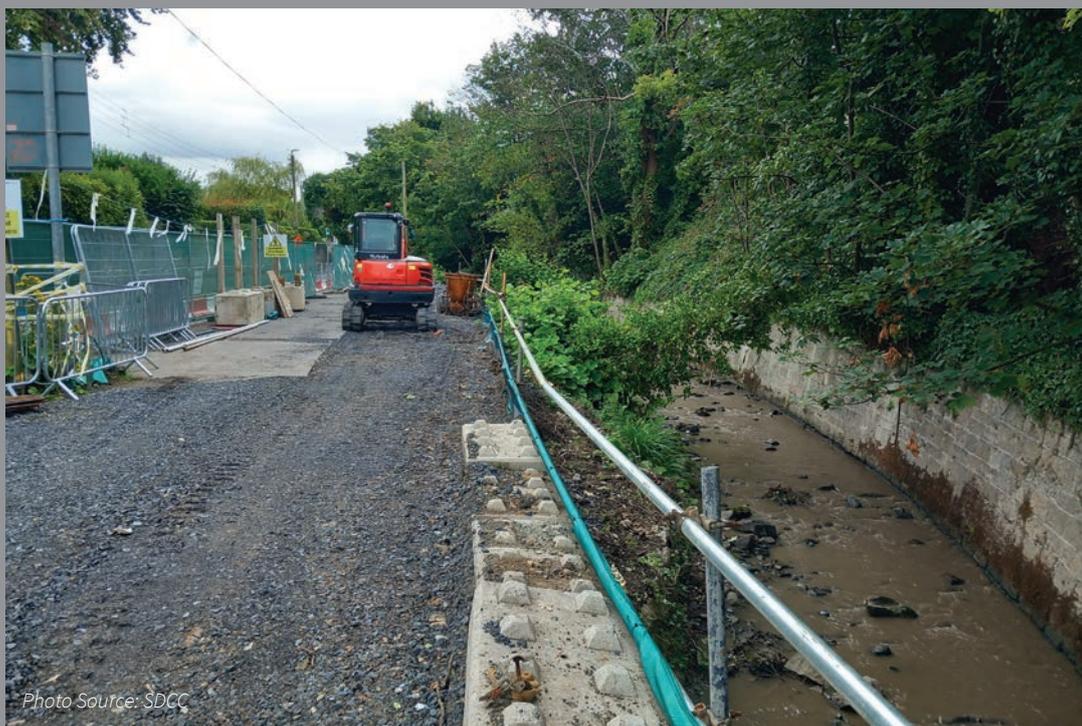

Photo Source: SDCC

Photo Source: SDCC

Flood risk is considered at all stages of the land use planning process. This is managed in an environmentally sensitive way through specific flood policies in the County Development Plan (CDP) 2022-2028 [36], with the objective of developing a more flood resilient county.

> SDCC's County Development Plan 2022-2028 outlines a commitment to flood risk management, with Policy IE4 which aims to 'Ensure the continued incorporation of Flood Risk Management into the spatial planning of the County, to meet the requirements of the EU Floods Directive and the EU Water Framework Directive and to promote a climate resilient County.'

South Dublin's County Development Plan also promotes a key policy of accommodating flood waters, as far as possible, during extreme flooding events and enhancing biodiversity and amenity through the designation of riparian corridors and applying appropriate restrictions to development within these corridors. Further policy, mainly the Green Infrastructure Strategy and the implementation of a 'Green Space Factor', drives the inclusion of nature-based solutions and Sustainable Drainage in all new developments. Details of which can be found in Chapter 4 of South Dublin's County Development Plan 2022-2028 [36].

These policies provide significant leadership and influence on the form of new developments and allow for greater flood risk management. Council Departments work collaboratively under these policies and utilise Strategic Flood Risk Assessments (SFRAs) and mapping to ensure that flood risk is assessed and managed, while enhancing the natural, biodiversity, and amenity values of the area.

Where extreme flooding does occur, South Dublin has Emergency Response Plans in place to reduce their impact and maintain business continuity across the county.

IMPLEMENTATION OF SUSTAINABLE DRAINAGE (SUDS) AND SURFACE WATER MANAGEMENT IN SOUTH DUBLIN

'Sustainable Drainage Systems or SuDS is a way of managing rainfall that **minimises the negative impacts** on the quantity and quality of runoff whilst maximising the **benefits of amenity and biodiversity** for people and the environment.' Construction Industry Research and Information Association (CIRIA).

Our drainage systems have been subject to increasing pressure over recent years due to climate change, population increases, and additional hard landscaping being connected to the network. It is projected that by 2028, up to 46,500 additional people could be living in South Dublin. This additional demand means that the way we deal with surface water must evolve and adapt as existing drainage networks have a finite capacity, whilst we also tackle the effects of climate change and work to improve water quality in South Dublin's network of rivers.

SuDS, where well designed, are a great way to help manage rainfall, and the associated surface water runoff, more sustainably than conventional techniques. They help our urban areas adapt to increased rainfall and the effects of climate change, reducing flow rates and volumes, and providing water quality treatment. They can make our urbanised areas more pleasant and a healthier environment in which to live.

Typical types of SuDS features include swales; tree pits; detention basins; wetlands; soakaways; rainwater harvesting; porous surfaces; green/blue roofs; filter drains; and bioretention raingardens. Successful SuDS designs incorporate different features used in conjunction with each other.

SOUTH DUBLIN'S SUDS EXPLANATORY, DESIGN AND EVALUATION GUIDE

Sustainable Drainage Systems (SuDS) are a way of managing rainfall and surface water that mimics drainage processes found in nature. Traditional surface water management involves hard engineered 'grey' solutions such as pipes and attenuation tanks to collect and quickly convey rainwater to the sewer network, and ultimately the river network. This contributes to flooding and water pollution. The use of SuDS aims to address these issues.

Launched in February 2022, South Dublin County Council's 'SuDS Explanatory, Design and Evaluation Guide' is a tool to ensure a consistent approach in the design of surface water management systems across all new developments. The application of this guidance is now mandatory for all new developments and ties in with our Green Infrastructure (GI) strategy for the County. The guide aims to help create multi-functional spaces that manage the water quantity, water quality, help promote biodiversity and provide better amenity to all.

"A Householders Guide to SuDS" was also developed as an 'easy to use' practical guidance for smaller scale domestic SuDS application.

The 'Sustainable Drainage Explanatory, Design and Evaluation Guide 2022' [37] and 'A Householders Guide to SuDS' [38] are available to download on www.southdublinclimate.ie.
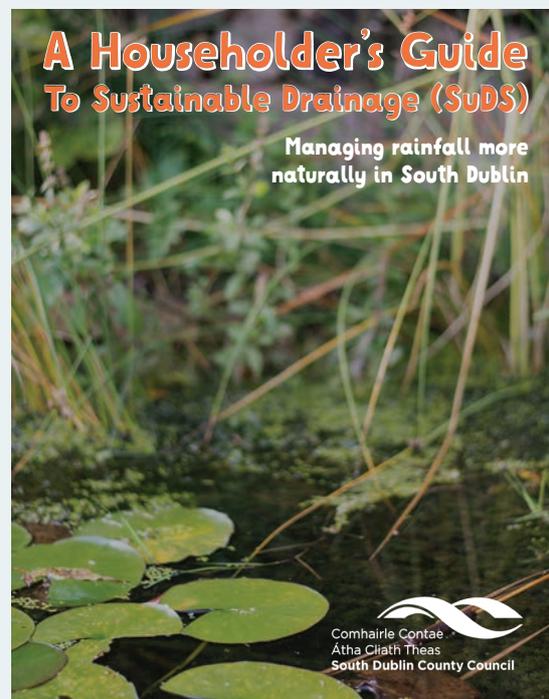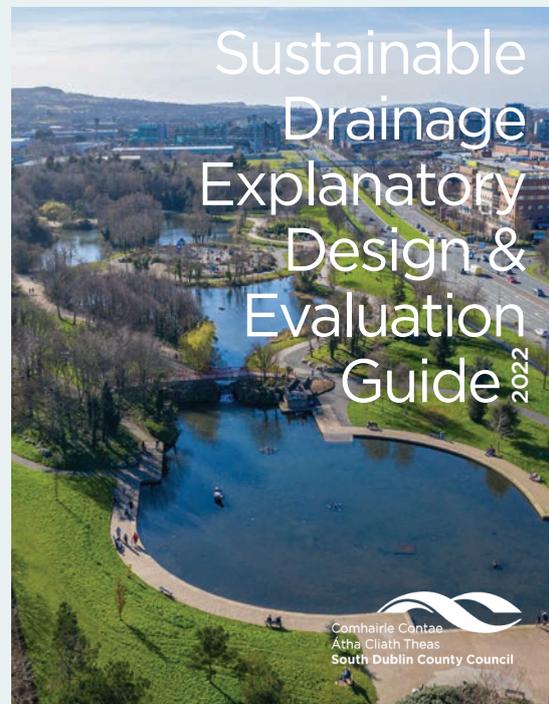
IMPROVED MAINTENANCE OF STORMWATER, SURFACE WATER, AND ROAD GULLY NETWORKS.

SDCC is responsible for maintaining the drainage systems that manage stormwater and surface water run off as required. However, given the likelihood of more extreme rainfall/flooding events and the increased pressure this will put on the existing network, it is critical to ensure that the drainage systems will continue to operate as required. Existing drainage maintenance plans will be reviewed and improved to ensure a comprehensive plan is in place for the network, including gullies and SuDS assets. The plan will look to include the use of any emerging technological solutions.

ADDITIONAL BENEFITS TO FLOOD RESILIENCE ADAPTATION

The actions to adapt to climate change and to increase our Flood Resilience can result in other benefits for South Dublin, including, but not limited to:

- **Water quality benefits of SuDS:** Well-designed SuDS can improve water quality by preventing and treating pollution to ensure that clean water is discharged to networks, watercourses, or groundwater.

- **Environmental and Social benefits of SuDS:** Well-designed SuDS can provide biodiversity and amenity benefits; maximising the potential for plants and wildlife and for attractive multi-functional spaces to enhance people's quality of life. Similarly, Flood Storage and Attenuation Ponds can create a focal point in open spaces while providing additional habitat, recreation and aesthetic functions.

- **Environmental benefits of Wetlands:** Wetlands often include marginal vegetation providing natural habitat in urban areas. Where present, this marginal vegetation offers further natural shelter and filters sediment and pollutants from surface water runoff, both directly from paved areas and from discharges locally to surface water drains.

- **Environmental and Social benefits of green infrastructure:** Planting Schemes extended throughout developments provide shading, privacy and permeable surfaces to reduce the rate and volume of surface water runoff. They also filter urban pollutants and sediment and provide opportunities to increase biodiversity.

- **Social and active travel benefits:** Flood Alleviation Schemes can provide opportunities for additional community benefits in terms of pedestrian and cycle routes.
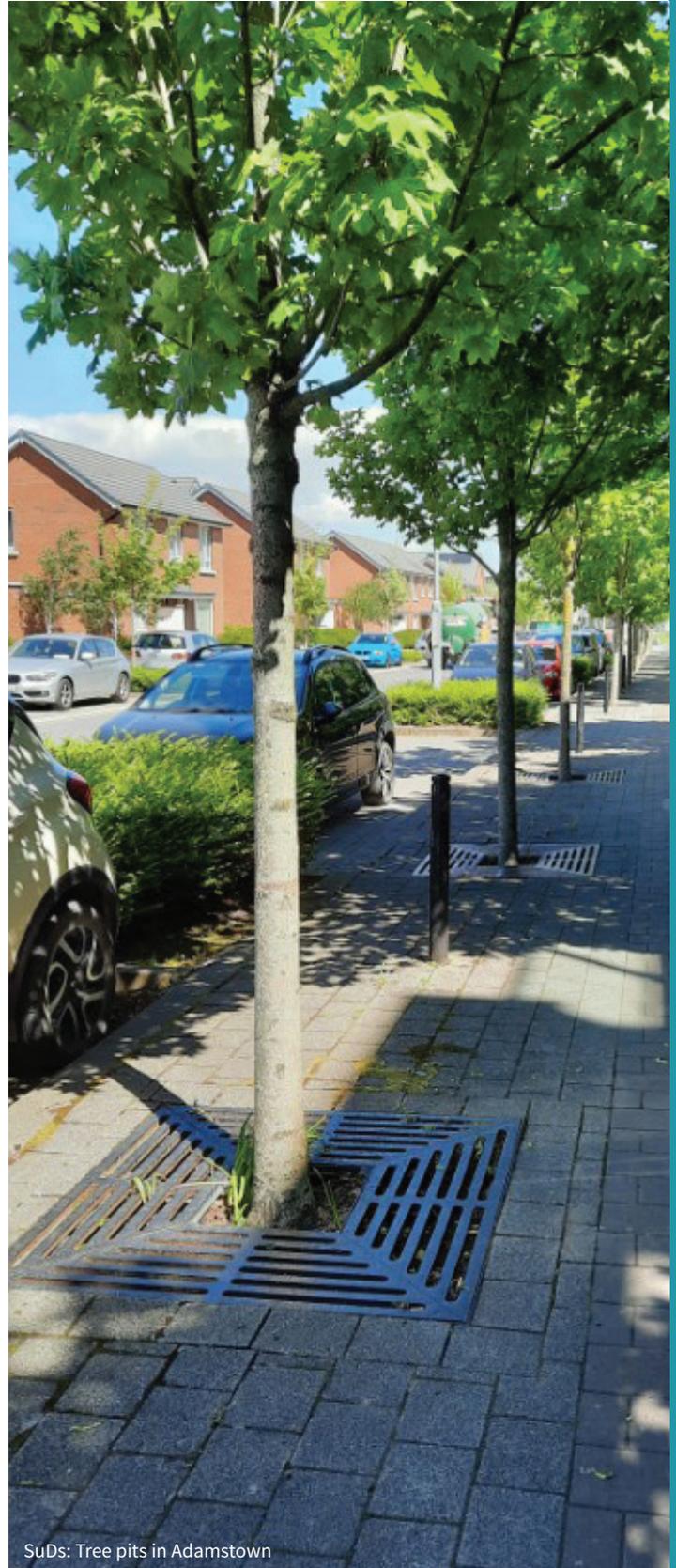
SuDs: Tree pits in Adamstown

FLOOD RESILIENCE

Ref.	Action	Tracking Measure	Timeframe	Adaptation / Mitigation	SDCC Role	Lead Department(s)	Partner(s) Identified
Adaptation to increased Flood Events (Flood Defence, Monitoring, Flood Response)							
F1	Review and update Major Emergency Managment Response plans, SDCC policies or relevant Standard Operating Procedures (SOPs), with national Legislation and regulation on Climate Change adaptation and flood management, as required / annually.	Plans up to date	Annually / as Required.	Adaptation	Full Accountability	Environment, Water and Climate Change (EWCC) - Major Emergency Management	Government; All SDCC Departments
F2	Ensure recording of flood events (fluvial and pluvial) and major climate events, utilising a GIS based system, to consistently capture locations, impacts, response resources, costs etc., to facilitate the development of climate adaptation measures.	Full role out of WIRE APP to all SDCC Engineers, Inspectors and other staff members interested; Number of users; Number of Reports	Planned Commencement: Ongoing Duration: until 2029	Adaptation	Full Accountability	EWCC	All SDCC Departments
F3	Ensure annual update of the specific risks to service provision in each SDCC Department that may be impacted by Climate Change, building on the Climate Change Risk Assessment developed for the Climate Action Plan.	Annual risk review	Planned Commencement: Ongoing. Duration: until 2029.	Adaptation	Full Accountability	EWCC - Major Emergency Management	All SDCC Departments
F4	Engage regularly with neighbouring Local Authorities and other relevant organisations, on regional flood management issues, and support the ongoing implementation of flood forecasting systems.	Number of Relevant Meetings	Planned Commencement: Ongoing. Duration: until 2029.	Adaptation	Full Accountability	EWCC	Adjoining Local Authorities; Office of Public Works (OPW); Uisce Éireann; ESB; Met Éireann
F5	Progress Flood Alleviation Schemes (FAS) in conjunction with the OPW - including the River Poddle FAS, the River Camac FAS and the Whitechurch Stream FAS. (Refer to Note A below)	Number of properties protected; Programme progress / completion	Planned Commencement: Ongoing. Duration: Scheme completion dates	Adaptation	Full Accountability	EWCC	OPW
F6	Identify and progress minor works schemes to resolve recurring flood issues, where possible, ensuring the schemes are designed and implemented to include Sustainable Drainage Systems (SUDS) / nature-based solutions / protection of biodiversity and avoidance of habitat fragmentation.	Number of schemes progressed	Planned Commencement: Ongoing. Duration: until 2029.	Adaptation	Full Accountability	EWCC	

FLOOD RESILIENCE

Ref.	Action	Tracking Measure	Timeframe	Adaptation / Mitigation	SDCC Role	Lead Department(s)	Partner(s) Identified
F7	Develop, protect and conserve riparian corridors, in line with County Development Plan and Greater Dublin Strategic Drainage Study (GDSDS), increasing riparian corridor connectivity where possible, and similarly for floodplains around rivers and watercourses subject to flooding.	Number of planning applications permitted in flood zone A and flood zone B; Number of planning applications permitted in the riparian corridors; Linear meters of riparian corridors enhanced with native planting; Number of developments allowed to encroach within the 15m buffer zone given by GDSDS	Planned Commencement: Ongoing. Duration: until 2029.	Adaptation	Full Accountability / Influence	Land Use, Planning and Transport (LUPT) - Planning	EWCC
Implementation of Sustainable Drainage Systems (SuDS) / Surface Water Management in South Dublin							
F8	Drive the implementation of SuDS in SDCC Capital projects, including new builds, retrofits etc, and monitor the level of implementation. (Refer to Note B below)	Number of projects; Square meters of permeable paving; % of area of hard surfaces retrofitted	Planned Commencement: Ongoing. Duration: until 2029.	Adaptation	Full Accountability	EWCC	All SDCC Departments
F9	Promote and encourage community involvement in the retrofit of SuDS or development of natural flood management measures, in existing housing / developments / local areas.	No of engagement events (social media posts, articles, events) per year	Planned Commencement: Ongoing. Duration: until 2029.	Adaptation	Advocate	EWCC	EWCC - Climate Action
F10	Identify 4 No Demonstration Sites or Pilot schemes to monitor different SuDs projects, demonstrating how to combine SuDS/flood attenuation systems with exsisting land uses.	Sites Identified and each monitored for a minimum of 1 year	Planned Commencement: 2024/2025. Duration: until 2029.	Adaptation	Full Accountability	EWCC	All SDCC Departments
F11	Promote and encourage the implementation of SuDS to external Developers - ensure implementation of SuDS in Planning applications in line with SDCC SuDS Guidance. (Refer to Note C below)	Number of Green Space Factor implementations that have included SuDS, as a %	Planned Commencement: 2024 / 2025. Duration: until 2029.	Adaptation	Influence	EWCC	LUPT - Planning; EWCC - Public Realm, Parks
Improved Maintenance of SuDS and the Stormwater, Surface Water, and Road Gully Networks							
F12	Improve the general maintenance plan for the stormwater and surface water network, with the aim to link to flood event forecasting and incorporate data of locations with known issues.	Length of network cleaned/Desilted per year; Number of screens cleaned per year	Planned Commencement: 2024. Duration: until 2029.	Adaptation	Full Accountability	EWCC	

FLOOD RESILIENCE

Ref.	Action	Tracking Measure	Timeframe	Adaptation / Mitigation	SDCC Role	Lead Department(s)	Partner(s) Identified
F13	Review gully maintenance plan and operations for improvements, considering areas with recurring issues and smart technology oppportunities.	Number of gullies cleaned per year	Planned Commencement: 2024. Duration: until 2029.	Adaptation	Full Accountability	EWCC - Public Realm	EWCC - Water and Drainage
F14	Develop an improved maintenance plan for SuDS assets that are taken in charge by SDCC, ensuring their continued operation.	Plan developed	Planned Commencement: Ongoing. Duration: until 2029.	Adaptation	Full Accountability	EWCC	EWCC - Public Realm, Parks; LUPT
F15	Maintenance of lakes and wetlands to increase storage capacity during severe weather events, where necessary. (Refer to Note D below)	Volume of material removed	Planned Commencement: Ongoing. Duration: until 2029.	Adaptation	Full Accountability	EWCC - Public Realm	EWCC - Water and Drainage
Mainstreaming climate proofing actions across SDCC through Governance							
GOV1	Support the Elected Members and Strategic Policy Committees (SPCs) in their leadership role for climate actions.	Number of climate related briefings / events provided	Planned Commencement: Ongoing. Duration: until 2029.	Mitigation	Full Accountability	EWCC - Climate Action	
GOV2	Ensure Green Public Procurement (GPP) implementation in all SDCC tenders as part of the scored quality assessment, in order to source goods, services and works with a reduced climate and enviornmental impact. Provide relevant GPP training for staff.	% of Tenders including GPP; % of Tenders including GPP as a scored criterion; Number of staff to complete training	Planned Commencement: Ongoing. Duration: until 2029. Training rollout by Q4 2024.	Mitigation	Full Accountability	Corporate Performance and Change Management (CPCM) - Procurement	All SDCC Departments
GOV3	Ensure that all new SDCC Projects are assessed for the feasibility of incorporating climate actions and measures, with a focus on energy, greenhouse gas emissions, nature based SuDS, enhancing and retaining Green Infrastructure, biodiversity, sustainable transport and modal shift, EV charging and environmental protection and co-benefits.	Number of projects proofed for SuDS / climate actions; Number of projects proofed for GI options; Number of projects proofed for active travel	Planned Commencement: Ongoing. Duration: until 2029.	Mitigation	Full Accountability	All SDCC Departments	LUPT; EWCC
GOV4	Ensure climate-proofing of all SDCC policies and strategies, including updates through liasion with the Climate Action Team.	Number of policies / strategies climate proofed	Planned Commencement: Ongoing. Duration: until 2029.	Mitigation	Full Accountability	All SDCC Departments	EWCC - Climate Action

FLOOD RESILIENCE

INTEGRATED ENVIRONMENTAL CONSIDERATIONS

Action F5 - Note A: Progress Flood Alleviation schemes in the county in conjunction with the Office of Public Works (OPW); having due regard to the need to promote nature-based solutions and Sustainable Drainage Systems (SuDS), and environmental sensitivities at these locations, including water quality, biodiversity, European sites, riparian corridors and aquatic ecology, visual amenity and recreation and amenity value etc.

Action F8 - Note B: Ensure all SuDS related construction works are designed and implemented in a manner that does not result in the occurrence of significant adverse environmental effects.

Action F11 - Note C: Whilst ensuring, in so far as within the Council's remit, that all SuDS related construction works are designed and implemented in a manner that does not result in the occurrence of significant adverse environmental effects.

Action F15 - Note D: Having due regard to the need to appropriately protect, conserve and enhance important habitats and species and European sites, and support the maintenance and improvement of water quality in line with the aims of the Water Framework Directive.

NATURE-BASED SOLUTIONS

Hellfire Club Walk, South Dublin

Nature-based solutions are defined by the European Union as *'Solutions that are inspired and supported by nature, which are cost-effective, simultaneously provide environmental, social and economic benefits, and help build resilience. Such solutions bring more and more diverse, nature, and natural features and processes into cities, landscapes and seascapes, through locally adapted, resource-efficient and systemic interventions.'* [39]

Nature-based solutions work with nature, rather than against it, to provide sustainable, cost-effective solutions to societal challenges, including climate change. These solutions play an important role in both mitigation against climate change and in helping us to adapt to the effects of climate change, in many ways:

- Carbon sequestration (acting as carbon sinks)
- Providing and enhancing habitats, biodiversity and ecosystems
- Preventing or reducing flooding by absorbing water and helping to control surface water runoff
- Filtering pollutants, improving air and water quality
- Temperature regulation

Using nature-based solutions in our communities can have a positive influence on our quality of life in South Dublin – positive for climate, positive for our air and water quality, positive for biodiversity and habitats, and positive for people's health and wellbeing.

SDCC'S KEY ACTION AREAS IN RELATION TO NATURE BASED SOLUTIONS FOR CLIMATE ACTION

NATURE BASED SOLUTIONS

- Sequestering carbon
- Supporting Green Infrastructure
- Addressing biodiversity loss
- Increased Temperatures and Urban Heat Island Effect
- Mainstreaming climate proofed solutions across SDCC through Governance
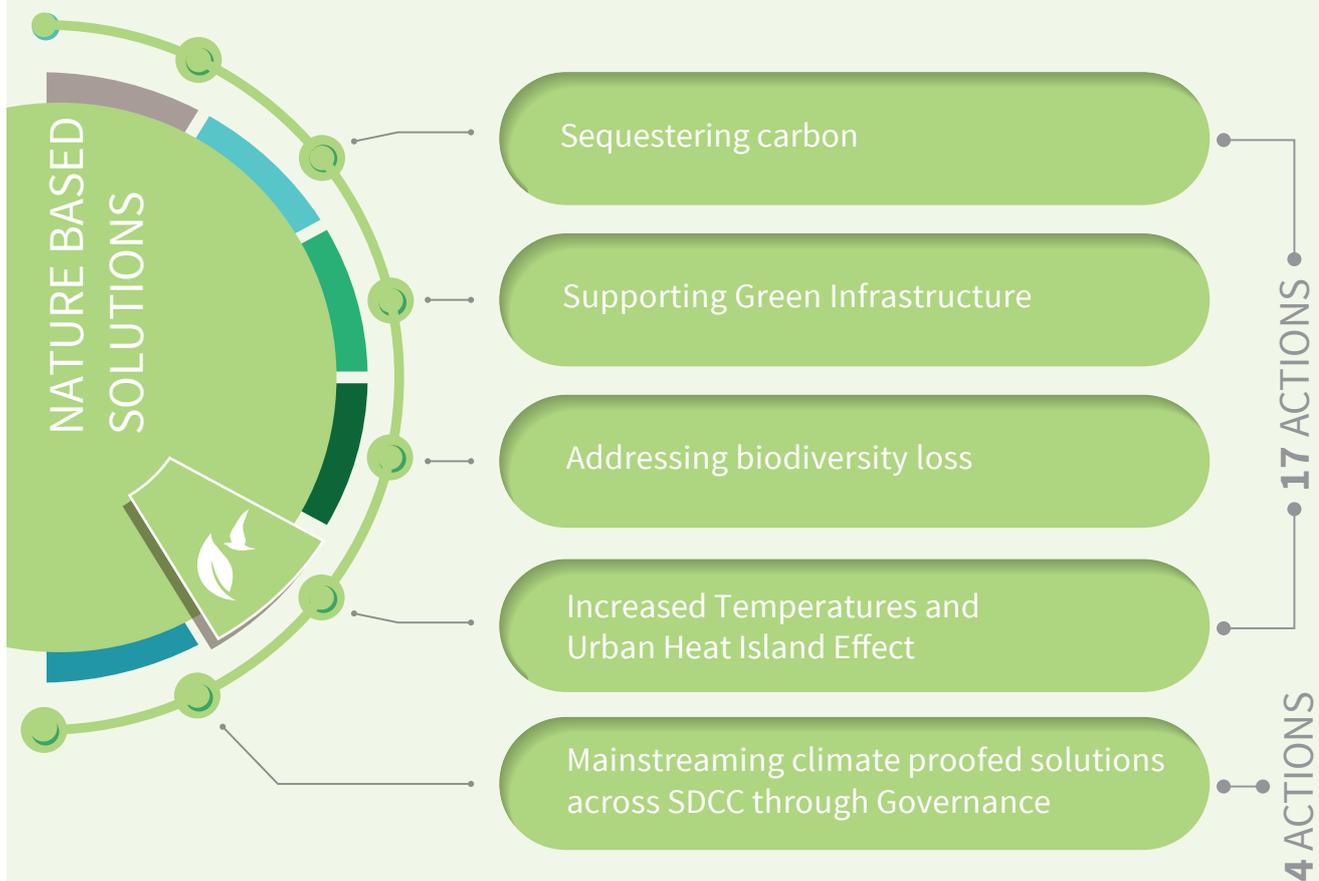
17 ACTIONS

4 ACTIONS

Figure 5.6: SDCC's Key Action Areas to in relation to Nature Based Solutions for Climate Action.
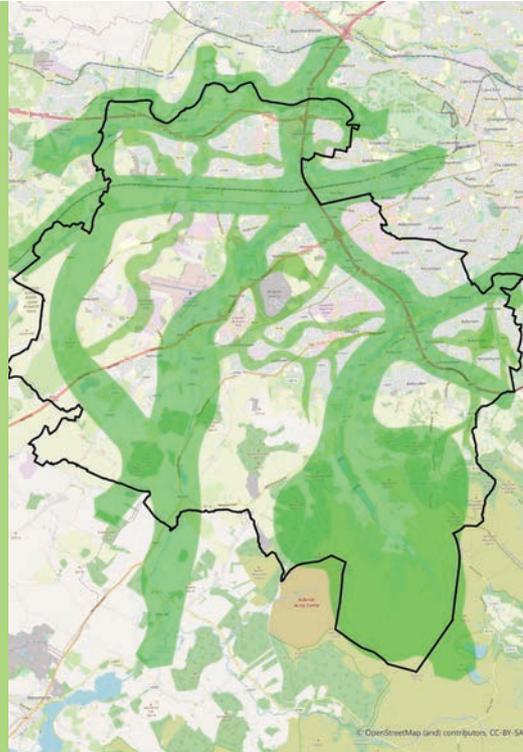
SUPPORTING GREEN INFRASTRUCTURE

Green Infrastructure (GI), as a nature-based solution, operates as a network of multi-functional green space and other green features, that are designed and managed to imitate a natural undeveloped environment. Green infrastructure is about more than just planting. It involves understanding the role of nature in supporting life and making places liveable. Green infrastructure elements are flexible and can be woven into our communities and amenity areas at several scales, from sustainable drainage systems (SuDS) such as rain gardens or tree pits on a street, to green roofs on buildings to urban 'Miyawaki' mini woodlands (which can store up to 40 times more carbon than single species plantations) or integrated constructed wetlands (ICWs) in our parks.

The importance of green infrastructure to is recognised in the County Development Plan 2022-2028, which outlines the vision to "promote the development of an integrated GI network for South Dublin County working with, and enhancing, existing biodiversity and natural heritage, improving our resilience to climate change and enabling the role of GI in delivering sustainable communities to provide environmental, economic and social benefits" [36].

To reflect this vision, South Dublin County Council (SDCC) is working to protect and enhance existing green infrastructural assets and develop a network of improved green infrastructure. This work is supported by SDCC Plans across the organisation including:

- SDCC's Green Infrastructure Strategy, outlined in the County Development Plan, and the implementation of a 'Green Space Factor' in assessing development in South Dublin.

- The SDCC Biodiversity Action Plan 2020-2026, 'Connecting with Nature' [40], which outlines objectives and actions to protect and enhance the County's biodiversity.

- 'Living with Trees', South Dublin County Council's Tree Management Policy 2021-2026 [41].

CASE STUDY

South Dublin County Council's Green Infrastructure (GI) Strategy

South Dublin County Councils Green Infrastructure strategy (Chapter 4 in the SDCC County Development Plan 2022-2028) seeks to ensure that all new development contributes to the overall green infrastructure network of the County.

The quantity and quality of green infrastructure provided by new development will be improved by the implementation of a Green Space Factor (GSF) for South Dublin. The GSF is a measurement that describes the quantity and quality of landscaping and green infrastructure across a defined spatial area. This measurement comprises a ratio that compares the amount of green space to the amount of impermeable 'grey' space in a subject site. As a planning tool, this ratio is used to assess both the existing green cover within a site and the impact of new development, based on the quantity and quality of new green space provided. Minimum scores are related to different land use zonings, with comprehensive guidance available in SDCC's 'Green Space Factor Guidance Note' on www.sdcc.ie.

PROMOTING IMPORTANCE OF TREES

Trees are important and make a major contribution to the character, appearance and well-being of South Dublin. Trees, hedgerows, and plants act as carbon sinks by temporarily storing carbon as they grow. They reduce water run-off in extreme rainfall events, taking pressure off the urban drainage network. They improve the urban microclimate and target the impact of increased temperatures and reduce the 'Urban Heat Island Effect' by providing shelter and shade.

URBAN HEAT ISLAND EFFECT

Dublin and other urban centres and cities are typically warmer than the surrounding rural areas due to what is known as the urban heat island effect.
This urban heat island effect results from several factors, including reduced ventilation and heat trapping due to the close proximity of tall buildings, heat generated directly from human activities, the heat-absorbing properties of concrete and other urban building materials, and the limited amount of vegetation [42].

Cities concentrate key infrastructure and large populations including many who may be elderly, poor or suffer economic and social deprivation and are therefore more vulnerable to the adverse effects of extreme heat.

According to a study by Paranunzio, et al. (2021) [43] which assessed the urban heat island effect in Dublin between the 2020s and 2050s, urban areas considered at highest risk are expected to increase by about 70% and 96% under the modelled scenarios RCP 4.5 and 8.5 respectively. For the 2050s, enhanced levels of heat risk under the RCP 8.5 scenario are particularly visible in the core city centre and in the northern and western suburbs.
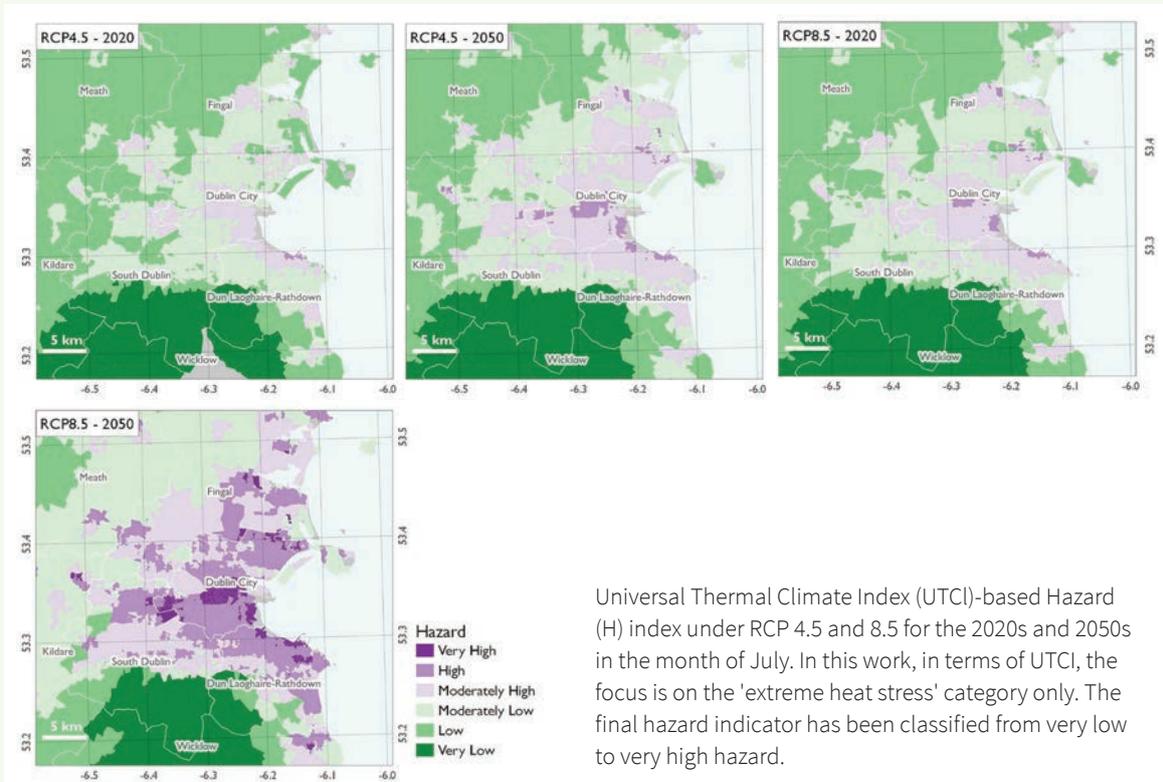
Universal Thermal Climate Index (UTCI)-based Hazard (H) index under RCP 4.5 and 8.5 for the 2020s and 2050s in the month of July. In this work, in terms of UTCI, the focus is on the 'extreme heat stress' category only. The final hazard indicator has been classified from very low to very high hazard.

SDCC is working to promote trees as living assets and essential elements of the urban environment and our green infrastructure, affording them a similar status and protection as to other urban infrastructure.

The actions in this climate action plan are supported by SDCC's Tree Management Policy 2021-2026, 'Living with Trees' [41]. This outlines in more detail how we protect existing trees and woodlands and manage these to ensure they thrive to their full potential. At the same time actively working to increase tree planting and hence canopy cover (which in turn increases the carbon sequestration potential within the county) in South Dublin.

Tymon Park was awarded the prestigious **2022/23 Pollinator Award** for the **Best Town Park in Ireland** as part of the Green Flag scheme. The Pollinator Award is jointly run by An Taisce's Environmental Education and the National Biodiversity Data Centre. The award assesses the pollinator-friendly management of parks against the recommendations of the All-Ireland Pollinator Plan.

ADDRESSING BIODIVERSITY LOSS

Healthy ecosystems are more resilient to climate change, and by protecting and restoring natural habitats or ecosystems in South Dublin we can help to reduce the impacts of climate change. These habitats can also sequester carbon, absorb floodwater, and improve water quality. South Dublin has over 1,750 hectares of parks and open spaces that host a range of protected and rare species, both within and outside of designated protected sites.

SDCC's Biodiversity Action Plan 2020-2026, 'Connecting with Nature' [40] includes actions which address the protection and enhancement of biodiversity and climate change adaption and/or mitigation in an integrated manner.

Biodiversity refers to the variety of plant and animal life on earth. It also describes the wide variety of places where all of the above live and interact with each other, and in South Dublin that means grasslands, woodlands, hedgerows, roadside verges, streams, rivers, upland bogland and heath, public parks, and private gardens. Biodiversity is essential to our survival as human beings. However, across the world and here in Ireland, the biodiversity crisis is showing us the damage caused to the natural world through human activities.

Biodiversity Informational Videos were produced, with one for SDCC Staff and one for Communities in South Dublin. The purposes of the videos are to highlight what we mean by biodiversity, who our pollinators are, what they do, and what can we do to help protect and encourage them; both as part of SDCC's daily work, and as Communities in South Dublin.

ADDITIONAL BENEFITS OF NATURE BASED SOLUTIONS

A healthy and well-connected network of green infrastructure provides a range of ecological/ environmental, social, aesthetic, and economic benefits for South Dublin:

Health and Wellbeing / Social Benefits:

- Nature-based solutions, and trees, provide aesthetic value in our urban landscaping enhancing our quality of life where we live and work. They can provide beautiful green spaces for recreational use.

- Physical benefits: trees have a positive effect on health through the provision of shade, outdoor recreation amenity and clean air.

- Mental benefits: research has shown that trees reduce stress and contribute to a greater quality of life.

- Trees create a distinctive landscape, making important landmarks and providing a unique sense of place and location.

Environmental benefits:

- Green infrastructure, such as trees and their ecosystems provide valuable habitats for wildlife, such as nesting birds, pollinators and other insects.

- Green infrastructure, such as mini woodlands, can provide food sources for wildlife.

- Providing networks of natural wildlife corridors through the urban environment help animal and plant species migrate through the changing landscape.

- Trees improve air quality as they absorb carbon dioxide and other gases from the air producing oxygen in the photosynthesis process. Each year a mature tree produces enough oxygen for 10 people. Trees also trap dust particles which improves air quality.

- Trees and hedgerows can reduce noise by acting as a sound barrier. This is particularly important in absorbing traffic noise in built up areas.

Economic benefits:

- Property values: research has shown that the presence of trees can increase the value of residential and commercial properties by between 5 - 18%.

- Village and retail areas: the presence of trees in retail areas positively affects people's behaviour by attracting consumers to an area.

- Effects on heating / cooling buildings: trees provide shade, shelter in wind and a regulation of local air temperature. This reduces energy and heat costs.

Planting of the Greenhills Park mini woodland

The Dublin Urban Rivers LIFE (DURL) Project

The DURL project is a collaboration between South Dublin County Council, Dun Laoghaire-Rathdown County Council and the EU LIFE Programme.

The project seeks to improve water quality in County Dublin and promote water quality improvement in urban areas by carrying out domestic misconnection inspections using a GIS-based approach. Domestic misconnections are caused by incorrectly plumbed washing machines and dishwashers which discharge to the stormwater drainage network flowing directly to the river, rather than to the foul sewer network, resulting in water pollution and a reduction in the habitat value of our rivers and streams. It impacts on our potential to meet the requirements of the Water Framework Directive (WFD) [35] and the River Basin Management Plan 2022-2027 [44] for Ireland.

During the past two years the project has assessed water quality in the River Griffeen catchment, visited over 4,000 houses and found approximately 420 misconnected appliances - most of which have been repaired by homeowners, with a small number awaiting repair. Access to houses has been tremendous, with 98.5% of the homeowners approached participating, and a very high repair rate showing a genuine willingness by homeowners to contribute to a better environment.

The DURL project built three integrated constructed wetlands (ICWs) in South Dublin County in 2023, using these nature-based solution to treat polluted stormwater. These natural water retention measures improve stormwater quality before discharging to local rivers and serve to improve biodiversity, increase flood resilience, and add to green infrastructure in public parks. Local communities got involved in planting the wetlands during construction.

The project has brought about a significant reduction in the levels of stormwater pollution flowing into the River Griffeen. The project team have recorded a meaningful reduction in typical pollution indicators in 2023 – with a reduction rate of 75% of phosphate levels and a reduction rate of 85% of ammonia levels (which cause excess algal growth and clog up our waterways) compared with 2021. A significant improvement in water quality has been achieved, and stormwater outfall quality can now reach national Environmental Quality Standards.

The DURL Project was awarded an ESRI-Ireland Annual Standout Success award in 2022 in the category of Data Management and Collection for its Domestic Misconnection Assessment IT Application.

NATURE BASED SOLUTIONS

Ref.	Action	Tracking Measure	Timeframe	Adaptation / Mitigation	SDCC Role	Lead Department(s)	Partner(s) Identified
Sequestering Carbon							
N1	Manage our tree mapping data and ensure the maintenance of our tree management system to evaluate carbon sequestration data associated with trees in South Dublin, and investigate further opportunities for carbon sequestration where possible.	Estimate of carbon sequestration potential based on tree mapping data	Planned Commencement: Ongoing. Duration: until 2029.	Mitigation / Adaptation	Full Accountability	Environment, Water and Climate Change (EWCC) - Public Realm: Tree Management	Land Use, Planning and Transport (LUPT) - Planning; EWCC - Climate Action; Adjoining Local Authorities
Supporting Green Infrastructure							
N2	Look to maintain and increase natural meadows, where appropriate, across the county.	Number of hectares added as natural meadow to baseline; Measurement of different types of meadow habitat	Planned Commencement: Ongoing. Duration: until 2029.	Mitigation	Full Accountability	EWCC - Public Realm: Tree Management	LUPT - Planning
N3	Increase native tree planting across the county. Retain existing native trees in South Dublin, in so far as possible. (Refer to Note A below)	Number of trees increased over annual baseline / set a yearly target; % increase in County's tree canopy cover; Number of trees per km of road versus the target set by Design Manual for Urban Roads and Streets (a minimum of 50 Number per km)	Planned Commencement: Ongoing. Duration: until 2029.	Mitigation / Adaptation	Full Accountability	EWCC - Public Realm: Tree Management	LUPT - Planning, Roads; Housing, Social and Community Development (HSCD)
N4	Increase and maintain native hedgerow planting across the county.	Linear meters of new hedgerow	Planned Commencement: Ongoing. Duration: until 2029.	Mitigation / Adaptation	Full Accountability	EWCC - Public Realm	LUPT - Planning, Roads; HSCD; EWCC - Environment
N5	Support / develop small urban 'Miyawaki' native mini-woodlands.	Number of new mini woodlands, a minimum of 100sqm in size	Planned Commencement: Ongoing. Duration: until 2029.	Mitigation / Adaptation	Influence	EWCC - Public Realm	LUPT - Planning; EWCC - Climate Action
N6	Develop an Urban Woodland and Hedgerow Management Strategy and implement plans for the County to enhance, maintain and improve existing woodlands throughout our Parks.	Urban woodland management strategy and action plan complete; Measurement of the carbon impact of the County's trees; Number of woodland management plans in place and operating	Planned Commencement: Ongoing. Duration: until 2029.	Mitigation / Adaptation	Full Accountability	EWCC - Public Realm	LUPT - Planning; EWCC - Climate Action, Public Realm
N7	Implement a programme of enhancement and expansion of ponds and wetland habitats, to expand areas of water storage capacity and increase sequestration. (Refer to Note B below)	Number of new wetlands / ponds; Number enhanced	Planned Commencement: Ongoing. Duration: until 2029.	Mitigation / Adaptation	Full Accountability/ Advocate	LUPT - Planning; EWCC - Water, Public Realm	EWCC - Water and Drainage, Climate Action

NATURE BASED SOLUTIONS

Ref.	Action	Tracking Measure	Timeframe	Adaptation / Mitigation	SDCC Role	Lead Department(s)	Partner(s) Identified
N8	Continue to implement Dublin Mountains Makeover with Coillte Nature and the Dublin Mountains Partnership exploring opportunities for native tree planting projects to manage surface water run off from mountainous areas to reduce flooding downstream. (Refer to Note C below)	Meters squared of planting / trees planted	Planned Commencement: 2024. Duration: until 2029.	Mitigation / Adaptation	Full Accountability / Influence	EWCC - Public Realm	Coillte; EWCC - Water, Climate Action
N9	Expand and refine the evidence base for the County Habitat Map to identify key habitats / locations for nature based solutions, and use the data to develop management and mitigation plans for these nature based adaptation projects into the future.	Number of habitat and species surveys undertaken; Number of key project locations identified; Number of habitat / species management plans prepared	Planned Commencement: 2025. Duration: until 2026.	Mitigation	Full Accountability	LUPT - Planning	
N10	Pilot and co-design a biodiversity inclusive design for a social housing estate.	Pilot project designed and delivered with results published	Planned Commencement: 2025. Duration: until 2029.	Mitigation / Adaptation	Full Accountability	HSCD; Architectural Services	LUPT - Planning, Heritage; private developers; EWCC - Public Realm
Addressing Biodiversity Loss							
N11	Support the Biodiversity Action Plan 2020-2026.	Number of actions delivered	Planned Commencement: Ongoing. Duration: until 2026.	Mitigation	Full Accountability	LUPT - Planning	Members of the Biodiversity Action Group
N12	Implement a countywide reduction of the usage of chemicals, such as glyphosate, across all council departments.	Reduction in litres purchased	Planned Commencement: Ongoing. Duration: until 2026.	Mitigation	Full Accountability	EWCC - Public Realm; LUPT	All Departments
N13	Identify opportunities to remove culverts to restore urban watercourses. (Refer to Note D below)	Metres of culvert removed	Planned Commencement: Ongoing. Duration: until 2029.	Adaptation	Full Accountability	EWCC	LUPT - Roads, Planning; EWCC - Climate Action, Public Realm
Increased Temperatures and Urban Heat Island Effect							
N14	Identify areas in South Dublin that are vulnerable to the impacts of increased heat effects due to climate change.	Study completed	Planned Commencement: 2024. Duration: until 2024.	Adaptation	Full Accountability	EWCC - Climate Action	
N15	Implement measures to mitigate the Urban Heat Island Effect in identified vulnerable areas, including the management of existing street trees and future planting to reduce impacts.	Number of schemes delivered	Planned Commencement: 2025. Duration: until 2029.	Adaptation	Full Accountability	EWCC - Public Realm	
N16	Investigate the potential for nature based solutions to address the risk of wildfire management, coordinating with the Dublin Fire Brigade.	Plan produced	Planned Commencement: 2024. Duration: until 2024.	Adaptation	Full Accountability / Co-ordinate and facilitate	EWCC - Major Emergency Management	

NATURE BASED SOLUTIONS

Ref.	Action	Tracking Measure	Timeframe	Adaptation / Mitigation	SDCC Role	Lead Department(s)	Partner(s) Identified
N17	Increase data gathering on the effects of climate change on natural water quality in the county.	Number of monitoring locations and parametric values gathered	Planned Commencement: 2026. Duration: until 2027.	Adaptation	Full Accountability	EWCC - Water Pollution	Environmental Protection Agency (EPA); Teagasc
Mainstreaming climate proofed solutions across SDCC through Governance							
GOV1	Support the Elected Members and Strategic Policy Committees (SPCs) in their leadership role for climate actions.	Number of climate related briefings / events provided	Planned Commencement: Ongoing. Duration: until 2029.	Mitigation	Full Accountability	EWCC - Climate Action	
GOV2	Ensure Green Public Procurement (GPP) implementation in all SDCC tenders as part of the scored quality assessment, in order to source goods, services and works with a reduced climate and enviornmental impact. Provide relevant GPP training for staff.	% of Tenders including GPP; % of Tenders including GPP as a scored criterion; Number of staff to complete training	Planned Commencement: Ongoing. Duration: until 2029. Training rollout by Q4 2024.	Mitigation	Full Accountability	Corporate Performance and Change Management (CPCM) - Procurement	All SDCC Departments
GOV3	Ensure that all new SDCC Projects are assessed for the feasibility of incorporating climate actions and measures, with a focus on energy, greenhouse gas emissions, nature based SuDS, enhancing and retaining Green Infrastructure, biodiversity, sustainable transport and modal shift, EV charging, and environmental protection and co-benefits.	Number of projects proofed for SuDS / climate actions; Number of projects proofed for GI options; Number of projects proofed for active travel	Planned Commencement: Ongoing. Duration: until 2029.	Mitigation	Full Accountability	All SDCC Departments	LUPT; EWCC
GOV4	Ensure climate-proofing of all SDCC policies and strategies, including updates through liasion with the Climate Action Team.	Number of policies / strategies climate proofed	Planned Commencement: Ongoing. Duration: until 2029.	Mitigation	Full Accountability	All SDCC Departments	EWCC - Climate Action

INTEGRATED ENVIRONMENTAL CONSIDERATIONS

Action N3 - Note A: Having due regards to environmental sensitivities such as European sites and biodiversity.

Action N7 - Note B: Having due regard to the need to appropriately protect, conserve and enhance important habitats and species and European sites, and support the maintenance and improvement of water quality in line with the aims of the Water Framework Directive.

Action N8 – Note C: Having due regard to environmental sensitivities such as European sites and biodiversity.

Action N13 – Note D: Ensure such works are designed and implemented in a manner that does not cause significant negative environmental effects.

CIRCULAR ECONOMY & RESOURCE MANAGEMENT

Drinking Water Station in Rathfarnham Castle

WHAT IS THE CIRCULAR ECONOMY?

"The circular economy aims to reduce waste at all stages of the economic cycle and ensure materials are used as efficiently as possible. Waste prevention, a central concept of the circular economy, challenges us to review our existing design, production, distribution and consumption of products. This will move us from the current linear model of Take, Make, Use, Dispose to a more efficient and low-carbon economy."
– The Environmental Protection Agency

The circular economy will see Ireland adopt a more sustainable economic system where we use less raw materials, design products to be kept in use for longer, and reuse and repair them.

The challenge is significant with 100 million tonnes of material used in the Irish economy every year. However there are opportunities in many sectors such as construction, agriculture and food production.

If we are to successfully move away from our current, unsustainable linear system (take, make, use, waste) to a more circular one (design and make, use, re-use and repair, recycle), we need to change not only how much waste we generate, but also how we treat waste.

At a national level, the Waste Action Plan for a Circular Economy 2020–2025 [45] set the scene for our transition from waste disposal to preserving resources in a circular economy. Policy is further strengthened by Ireland's first national circular economy strategy, the 'Whole of Government Circular Economy Strategy 2020-2023' [46], and the pending 'National Waste Management Plan for a Circular Economy 2023-2029'.

These strategies and plans, supported by regulation, are key to reducing energy use and resource consumption and achieving a reduction in overall greenhouse gas (GHG) emissions by 2030 and to reach net-zero emissions by no later than 2050. The transition away from fossil fuels and energy efficiency measures can only address some of our emissions, meeting our climate targets also requires a transformation in the way we produce and use products.

As the focus shifts from managing waste as a resource to reuse and repair, South Dublin County Council (SDCC) will build on the progress made since the last Waste Management Plan to further embed the circular economy, in alignment with the national strategies and plans. SDCC promotes circular initiatives by delivering a variety of campaigns and initiatives such as Relove Fashion, Repair Cafes, reusable cups, etc.

However, there is still a long way to go. According to the Environmental Protection Agency's most recent reports on annual waste generation, the amount of waste we generate continues to rise. It is clear the transition to a circular economy requires a national response across all sectors of the economy through the lifecycle of products and materials.

SDCC'S KEY ACTION AREAS TO ADDRESS CIRCULAR ECONOMY & RESOURCE MANAGEMENT

CIRCULAR ECONOMY AND RESOURCE MANAGEMENT

Managing Waste in South Dublin County Council'

Adopting a circular economy

Protecting the Environment

13 ACTIONS

Mainstreaming climate proofed solutions across SDCC through Governance
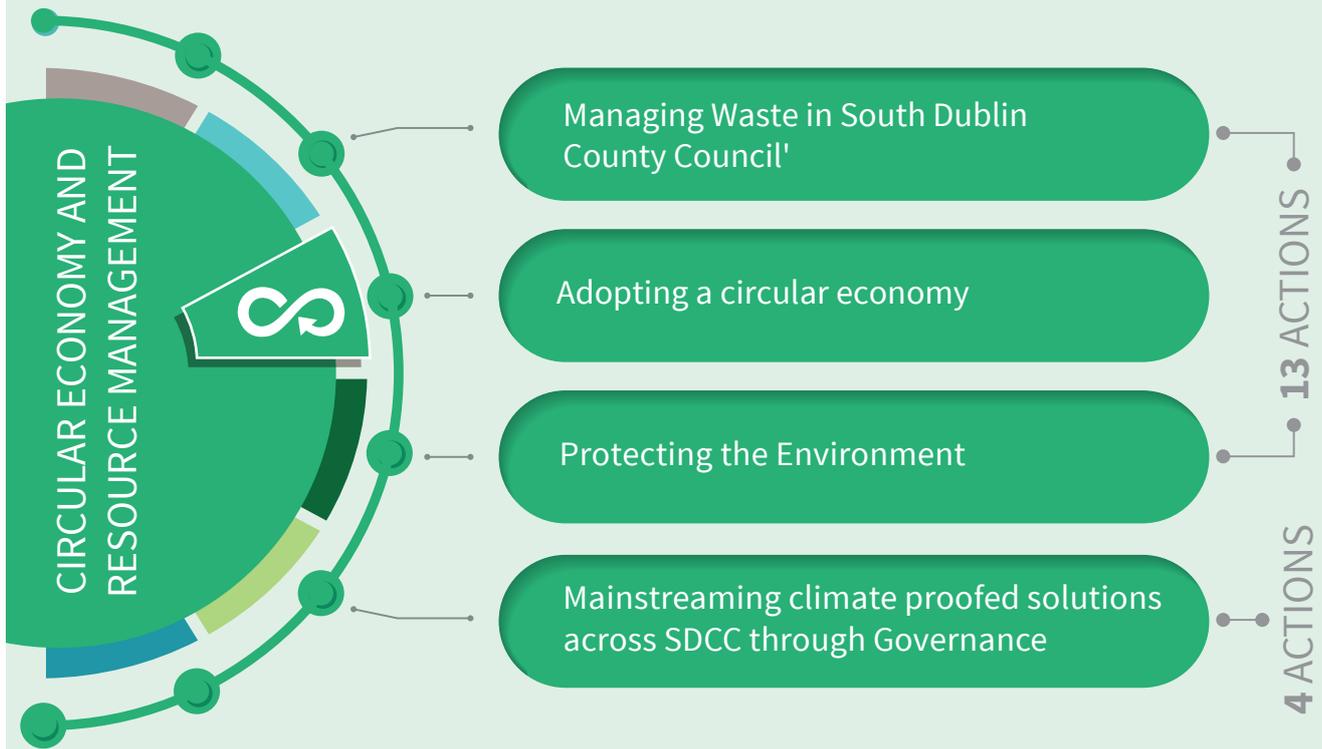
4 ACTIONS

Figure 5.7: SDCC's Key Action Areas in relation to the Circular Economy and Resource Management for Climate Action

MANAGING WASTE IN SDCC

SDCC continues to examine how waste is generated and managed in all Council properties and operations. Promoting better waste segregation is fundamental if we are to achieve EU Recycling Rates, e.g. 55% of municipal waste by 2025, rising to 60% by 2030 and 65% of packaging waste must be prepared for re-use or recycled. Further details on the specific targets can be found on www. ec.europa.eu.

The Local Authority aims to identify opportunities to reduce resources across all departments. For example, working with contractors in staff canteens to reduce waste, water and improve energy efficiency in their operations, investigating opportunities to reduce construction and demolition (C&D) waste in our projects and to sustainably manage grass cuttings.

Ireland and other EU Member States are required to report information on waste generation and treatment and levels of compliance with recovery and recycling targets - under a range of European waste directives and regulations including the Waste Framework Directive, the Landfill Directive and the Producer Responsibility Directives.

ADOPTING A CIRCULAR ECONOMY

Waste generation is driven by population growth, economic activity and our consumer approach. A challenge going forward is decoupling this trend, which is a challenge that the National Waste Management Plan for a Circular Economy 2023-2029 aims to respond to. SDCC will work to support and implement the targets of this new Plan for a Circular Economy.

While promoting sustainable consumption to prevent waste, SDCC will continue to ensure access to recycling facilities throughout the County and reduce the amount of recyclable material that goes for disposal. Furthermore, we will work to deliver opportunities to highlight repair and reuse across South Dublin.

Working with the other Dublin LAs, CARO and Eastern & Midlands Waste Region (EMWR), SDCC delivered a 30-40 minute documentary and resource pack reviewing the Irish Fashion Industry and its effect on the environment - mainly focusing on fast fashion, textile waste, waste prevention, microfibers and marine environment, how we care for our clothes care and a call to action.

PROTECTING THE LOCAL ENVIRONMENT

Strong national and international waste policy and legislation, encompassing measures of waste management compliance and enforcement, already exists. Monitoring and enforcement of the legislation is ongoing, and an annual inspection plan is used to ensure the efficient delivery of targets.

ADDITIONAL BENEFITS

The actions to adopt a circular economy and manage waste can result in other benefits for South Dublin, including but not limited to:

- **Environmental Benefits:** By transitioning to a circular economy, we should expect a reduction in plastic pollution. A circular economy will have a wider international impact in reducing pressure on the environment, by slowing down the use of natural resources, and the disruption or loss of habitats and biodiversity. Recycling raw materials reduces our dependency on limited supply of raw materials.

- **Economic Benefits:** The transition to a Circular Economy has the potential to stimulate innovation and create employment in the reuse and repair sector. It can result in better quality, longer lasting, consumer products, which should ideally result in saving money for us all as consumers.

- **Health & Well-Being:** A healthy, clean and protected environment is essential to the health and well-being of the citizens of Ireland.

15 Public drinking water fountains were installed in South Dublin to date, as a measure to reduce the amount of Single Use Plastics going to waste, and to support active travel. Details of use are tracked on a web portal. To date, over 280,000 (equating to over 6,200kg) plastic bottles have been averted from circulation. Additional Water fountains will be considered for installation under CAP 2024-2029.

∞ CIRCULAR ECONOMY & RESOURCE MANAGEMENT

Ref.	Action	Tracking Measure	Timeframe	Adaptation / Mitigation	SDCC Role	Lead Department(s)	Partner(s) Identified
Managing Waste in SDCC							
R1	Monitor and improve internal waste and water management systems in all SDCC buildings.	% reduction of individual waste streams across SDCC; 0% growth in waste generated over the life of the Waste Management Plan for a Circular Economy; Cubic meters of water saved	Planned Commencement: Ongoing. Duration: until 2029.	Mitigation	Full Accountability	Coporate Performance & Change Management (CPCM); Architectural Services; Environment, Water and Climate Change (EWCC)	
R2	Work with corporate services and contractors to reduce waste and improve energy efficiency in SDCC canteen.	Annual tonnages of food waste; Energy used; Introduce reuseable containers	Planned Commencement: 2024 Duration: until 2029.	Mitigation	Full Accountability	CPCM	EWCC - Climate Change; canteen operator
R3	Identify opportunities to reduce Construction & Demolition (C&D) waste generated by SDCC, and liase with relevant organisations collaboratively. (Refer to Note A below)	Annual tonnage of Construction & Demolition (C&D) waste sent for reuse	Planned Commencement: 2024 Duration: until 2029.	Mitigation	Full Accountability	SDCC Depot Managers	Architectural Services; EWCC - Public Realm, Waste Management; Land Use Plannig and Transport (LUPT)
R4	Investigate sustainable solutions to the management of grass cuttings. Deliver appropriate solutions identified.	Initial Feasibility Study delivered and follow-up delivered every 2 years	Planned Commencement: Ongoing Duration: until 2029.	Mitigation	Full Accountability	EWCC - Public Realm	EWCC - Climate Change
R5	Promote the use of sustainable / natural alternative materials in new and upgraded playspaces, teenspaces and in the infill of synthetic grass pitches.	m2 of rubber surfacing used in playspaces and teenspaces; Number synthetic grass pitches with rubber infill versus natural infill	Planned Commencement: 2024 Duration: until 2029.	Mitigation	Full Accountability	EWCC - Public Realm; Housing Social and Community Development (HSCD) - Community, Housing	
R6	Introduce recycled or eco friendly paper for use in all SDCC printers.	Recycled / eco friendly paper introduced	Commence in: 2024	Mitigation	Full Accountability	CPCM	
Adopting a Circular Economy							
R7	Support and promote the implementation of the targets of the National Waste Management Plan for a Circular Economy 2023-2029.	0% waste growth over the life of the plan; Establish a baseline and reduce food waste by half by 2030; Identify opportunities to eliminate waste and maximise the use of resources as outlined in the plan	Planned Commencement: 2024 Duration: until 2029.	Mitigation	Full Accountability / Influence	EWCC - Waste Management	EWCC - Environmental Awareness

∞ CIRCULAR ECONOMY & RESOURCE MANAGEMENT

Ref.	Action	Tracking Measure	Timeframe	Adaptation / Mitigation	SDCC Role	Lead Department(s)	Partner(s) Identified
R8	To provide for, and maintain, a network of bring banks in the County to facilitate recycling of materials. (Refer to Note B below)	Tonnes of glass collected; Tonnes of textiles collected at bring banks; Numberof bring bank locations across the county	Planned Commencement: 2024 Duration: until 2029.	Mitigation	Full Accountability	EWCC - Waste Management	Contractors operating the recycling facilities
R9	Provide opportunities for reuse of materials brought for disposal to SDCC Civic Amenity Facility.	Number of reuse schemes established; Measurement of material diverted to reuse, as appropriate	Planned Commencement: 2024 Duration: until 2029.	Mitigation	Full Accountability	EWCC - Waste Management, Environmental Awareness	Contractors operating the Civic Amenity Site
R10	Develop sustainability guidelines and terms and conditions for any events supported, facilitated, or organised by SDCC.	Guidelines developed	Planned Commencement: 2026 Duration: until 2026.	Mitigation	Influence	EWCC - Climate Action	Economic Enterprise and Tourism Development (EETD); All SDCC Departments
R11	Identify outdoor locations for recycling bin trial site(s) in South Dublin, and deliver a pilot project. (Refer to Note C below)	Pilot project delivered; Tonnages reported	Planned Commencement: 2024 Duration: until 2029.	Mitigation	Full Accountability	EWCC - Waste Management	
R12	Identify further areas for the installation of drinking water fountains.	Number of locations; Litres of water used compared to estimated plastic bottles saved	Planned Commencement: Ongoing Duration: 2024	Mitigation	Full Accountability	EWCC - Public Realm	Uisce Éireann

Protecting the Environment

Ref.	Action	Tracking Measure	Timeframe	Adaptation / Mitigation	SDCC Role	Lead Department(s)	Partner(s) Identified
R13	Monitor and enforce waste regulation in South Dublin.	Environmental Performance Assessment from the Environmental Protection Agency (EPA)	Planned Commencement: Ongoing Duration: until 2029.	Mitigation	Full Accountability	EWCC - Waste Enforcement	EPA; Waste Enforcement Regional Lead Authorities (WERLA)

Mainstreaming climate proofed solutions across SDCC through Governance

Ref.	Action	Tracking Measure	Timeframe	Adaptation / Mitigation	SDCC Role	Lead Department(s)	Partner(s) Identified
GOV1	Support the Elected Members and Strategic Policy Committees (SPCs) in their leadership role for climate actions.	Number of climate related briefings / events provided	Planned Commencement: Ongoing. Duration: until 2029.	Mitigation	Full Accountability	EWCC - Climate Action	
GOV2	Ensure Green Public Procurement (GPP) implementation in all SDCC tenders as part of the scored quality assessment, in order to source goods, services and works with a reduced climate and enviornmental impact. Provide relevant GPP training for staff.	% of Tenders including GPP; % of Tenders including GPP as a scored criterion; Number of staff to complete training	Planned Commencement: Ongoing. Duration: until 2029. Training rollout by Q4 2024.	Mitigation	Full Accountability	CPCM - Procurement	All SDCC Departments

∞ CIRCULAR ECONOMY & RESOURCE MANAGEMENT

Ref.	Action	Tracking Measure	Timeframe	Adaptation / Mitigation	SDCC Role	Lead Department(s)	Partner(s) Identified
GOV3	Ensure that all new SDCC Projects are assessed for the feasiblity of incorporating climate actions and measures, with a focus on energy, greenhouse gas emissions, nature based SuDS, enhancing and retaining Green Infrastructure, biodiversity, sustainable transport and modal shift, EV charging, and environmental protection and co-benefits.	Number. of projects proofed for SuDS / climate actions; Number of projects proofed for GI options; Number of projects proofed for active	Planned Commencement: Ongoing. Duration: until 2029.	Mitigation	Full Accountability	All SDCC Departments	LUPT; EWCC
GOV4	Ensure climate-proofing of all SDCC policies and strategies, including updates through liasion with the Climate Action Team.	Number of policies / strategies climate proofed	Planned Commencement: Ongoing. Duration: until 2029.	Mitigation	Full Accountability	All SDCC Departments	EWCC - Climate Action

INTEGRATED ENVIRONMENTAL CONSIDERATIONS

Action R3 - Note A: Ensure all reuse of C&D waste/material complies with Waste Management legislation (e.g., Article 27 or 28 requirements) and does not create unintended negative environmental effects.

Action R8 - Note B: Whilst ensuring these sites are appropriately located, designed and managed so as not to cause significant adverse environmental effects.

Action R11 - Note C: Having due regard to environmental sensitivities such as European sites and biodiversity.

COMMUNITY ENGAGEMENT

Climate Action Festival, Tymon Park, 2022

The challenges of climate change are far reaching across society and require holistic and collective responses. Simply, climate change, and our actions to mitigate and adapt to its effects, will impact us all - so as individuals and communities we should discuss and influence climate action in South Dublin. This plan places a value on community engagement and looks for opportunities to work with citizens and stakeholders to deliver effective, informed, climate action.

South Dublin County Council (SDCC) has significant experience in engaging citizens and stakeholders through their existing functions, for example, land-use planning, housing, employment, transport, environmental awareness, sports partnerships, Public Participation Networks (PPNs) and a range of other programmes and initiatives. It is vital that we leverage this experience as part of SDCC's Climate Action Plan, while also looking for new and innovative opportunities for engagement across communities in South Dublin. Community engagement opportunities should assist and empower us all to play our part in South Dublin's transition to a low carbon and climate resilient region.

SDCC'S KEY ACTION AREAS TO ENAGE WITH COMMUNITIES ON CLIMATE ACTION

COMMUNITY ENGAGEMENT

Engaging citizens on climate change: Deliver a comprehensive awareness programme to empower the citizens, businesses and organisations of South Dublin to take affirmative climate action

(Continue to) deliver a range of tools to inform the public on the issues surrounding climate change / Communicate climate change issues using a variety of communication tools

Engage with key external partners to deliver programmes and campaigns to increase knowledge of climate issues

Embed Climate Action within every department of South Dublin County Council

Support communities in South Dublin to deliver climate projects

Mainstreaming climate proofed solutions across SDCC through Governance
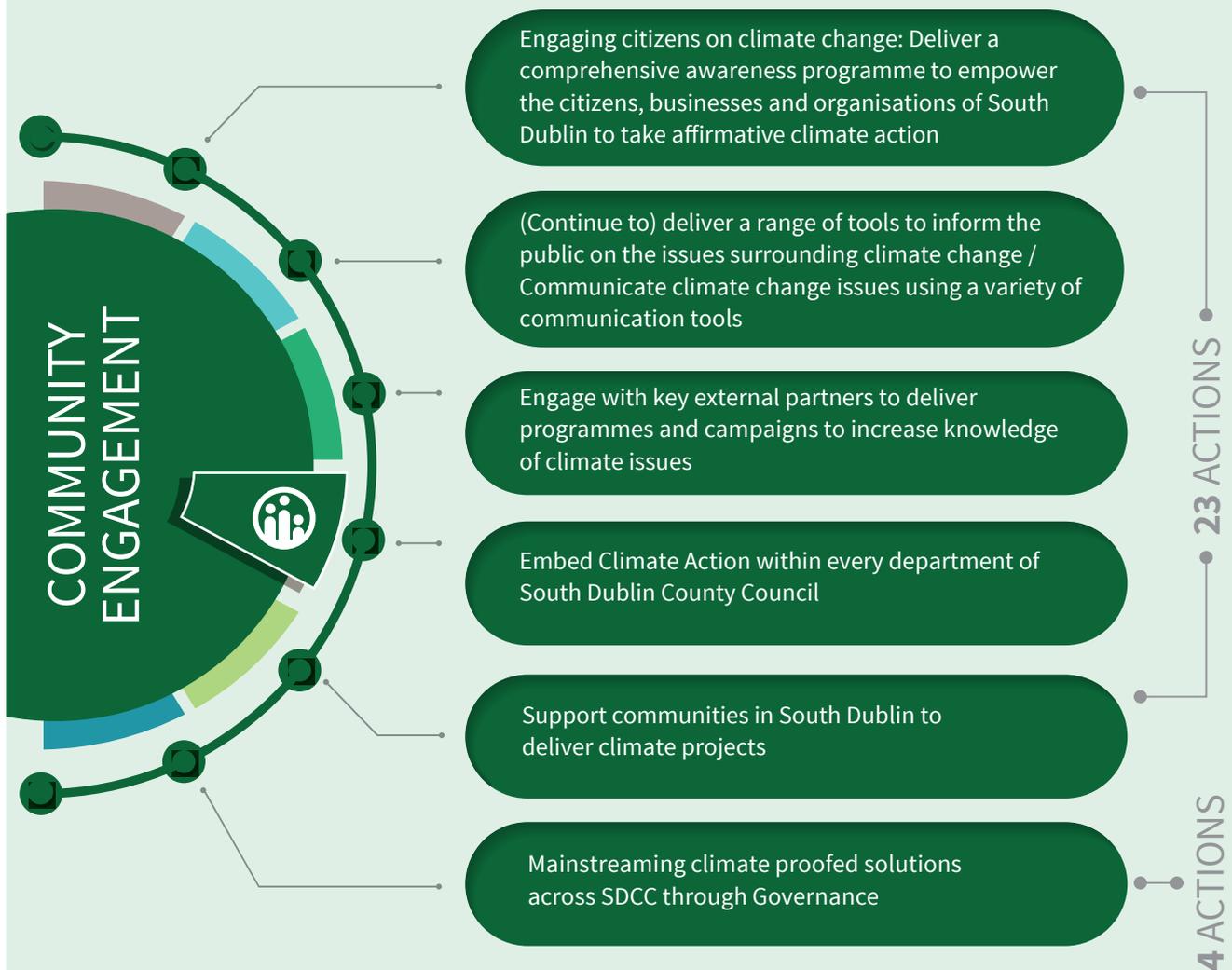
23 ACTIONS

4 ACTIONS

Figure 5.8: SDCC's Key Action Areas to engage with Communities on Climate Action

BUILDING CLIMATE AWARENESS

SDCC has an established track record in delivering awareness programmes on a variety of climate issues. From long established initiatives such as Green Schools and Eco Week, to newer ones like Dublin Climate Action Week (DCAW), we aim to inform, empower and support communities across South Dublin to take climate action.

In 2021 and 2022 the four Dublin Local Authorities, in partnership with Codema (Dublin's Energy Agency) and the Dublin Climate Action Regional Office (CARO), delivered Dublin Climate Action Week. A full schedule of public engagement events on climate action were organised across Dublin, covering the thematic areas of the Climate Change Action Plans 2019 – 2024. www.dublinclimateactionweek.ie

COMMUNICATING CLIMATE CHANGE

As a local authority, SDCC delivers a range of climate projects and actions which impact the lives of citizens across the county. The Council uses a range of communication tools, such as our Climate Change Newsletter and Climate Action Website (www.southdublinclimate.ie) to inform and educate on what we can all do to reduce our impact.

HOME ENERGY SAVING KITS

Home Energy Saving Kits are available to borrow from selected South Dublin Libraries.

The kit helps householders do a mini energy audit in their home. Each kit contains six practical tools that help householders understand how their home uses energy and ways to find possible savings.

ENGAGE WITH KEY EXTERNAL PARTNERS TO DELIVER PROGRAMMES AND CAMPAIGNS TO INCREASE KNOWLEDGE OF CLIMATE ISSUES

Delivering transformative change will require a whole of society approach. SDCC works with a variety of external partners to deliver programmes and campaigns to increase knowledge of climate issues.

One ongoing programme is the GAA Green Clubs Programme, which sees local authorities work with local clubs by offering advice and guidance in helping clubs to complete sustainability and climate action projects under the Programme.

Projects and programmes where SDCC works with the business, agricultural communities and other organisations in South Dublin are important if we are to achieve a climate neutral society by 2050.

SUPPORTING SEAI SUSTAINABLE ENERGY COMMUNITIES IN SOUTH DUBLIN

Community action is key to addressing climate change. A great way to get involved is through the Sustainable Energy Communities (SEC) programme. South Dublin County Council, in conjunction with the SEAI, is delighted to continue its work with local Sustainable Energy Communities (SEC) in the county. Each group is provided with an energy mentor to guide them through the three-step process of 'Learn-Plan-Do'. This planned approach is aimed at assisting local South Dublin groups to become more energy-efficient, to explore renewable energy and to consider smart energy solutions in their locality.
Contact **climatechange@sdublincoco.ie** for more information on setting up an SEC.

EMBEDDING CLIMATE ACTION

It is vital that all sections of South Dublin County Council are working towards achieving our targets. Climate action training, developed in partnership with the CAROs and the Local Authority Services National Training Group (LASTNG), continues to be rolled out for the entire local authority sector including elected members, to empower and upskill staff to act as leaders on climate action. On a day-to-day basis, SDCC's Climate Action team works with other SDCC departments to support the delivery of climate actions. New opportunities, particularly to utilise new technology for smarter delivery, will continue to be investigated.

SUPPORTING COMMUNITIES IN SOUTH DUBLIN

To achieve transformative change, citizen led demand for climate action is essential. SDCC aims to enable our citizens to realise the opportunities that a transition to a carbon-neutral society presents.

By supporting community initiatives, such as Tidy Towns, SDCC aims to support and reward local groups taking positive climate action. The introduction of the Community Climate Action Fund, as outlined here, offers significant financial assistance to local groups in building low carbon, sustainable communities.

COMMUNITY CLIMATE ACTION FUND

2022's Climate Conversations showed that communities across Ireland want to take more climate action and require the support to do so. In response, the Minister for the Environment, Climate and Communications launched the **Community Climate Action Programme**. Strand 1 of the programme allocates €1.07 million over three years to support and empower local groups in South Dublin to shape and build low carbon, sustainable communities in a coherent way such that they contribute to Ireland's overall climate and energy targets. The fund is critical in helping to address the greenhouse gas emissions in South Dublin not directly under the control of the Council.

SDCC have appointed a dedicated Community Climate Action Officer who will guide and support communities to develop local projects and initiatives.

To get involved, or for information and guidance, contact SDCC at **climatechange@sdublincoco.ie**

Transition Year students from Firhouse Community College at the launch of Eco-Week in March 2023.

COMMUNITY ENGAGEMENT

Ref.	Action	Tracking Measure	Timeframe	SDCC Role	Lead Department(s)	Partner(s) Identified
Engaging citizens on climate change: Deliver a comprehensive awareness programme to empower the citizens, businesses and organisations of South Dublin to take affirmative climate action						
CE1	Deliver climate education programme for primary and secondary schools, including ongoing delivery of the Green Schools programme and Eco Week.	Number of schools participating; Number of flags awarded in a year; Number of events held; Number of school children reached	Planned Commencement: Ongoing. Duration: until 2029.	Influence	Environment, Water and Climate Change (EWCC) - Environmental Awareness; Economic Enterprise and Tourism Development (EETD) - Library Services	EETD - Library Services; An Taisce; external education facilitators
CE2	Deliver Dublin Climate Action Week annually.	Number of events; Number of attendees	Planned Commencement: Ongoing. Duration: until 2029.	Full Accountability	EWCC - Climate Action	Other Dublin Local Authorities; Dublin Metropolitan Climate Action Regional Office (CARO); Codema
CE3	Engage with communities and businesses across South Dublin through workshops / presentations, to increase understanding of climate change.	Number of engagements	Planned Commencement: Ongoing. Duration: until 2029.	Influence	EWCC - Climate Action; EETD - Library Services	All SDCC Departments
CE4	Use targeted campaigns to increase knowledge of climate issues, for example, Reuse Month, National Food Waste Recycling Week, World Water Day, etc.	Number of campaigns delivered annually	Planned Commencement: Ongoing. Duration: until 2029.	Influence	EWCC - Climate Action, Environmental Awareness	EETD - Library Services; Corporate Performance and Change Management (CPCM) - Communications Unit
CE5	Monitor and develop the Home Energy Savings Kit scheme in SDCC libraries, including developing a youth friendly version, with a potential rollout in schools.	Number of kits in SDCC libraries; Borrrowing rates; Schools kit developed and Number available	Planned Commencement: Ongoing. Duration: until 2029.	Full Accountability	EWCC - Climate Action	Codema; EWCC - Climate Action
CE6	Identify opportunities to utilise libraries in South Dublin as climate hubs.	Number of climate initiatives delivered in / through libraries	Planned Commencement: 2024. Duration: until 2029.	Full Accountability	EETD - Library Services	Codema; EWCC - Climate Action
(Continue to) deliver a range of tools to inform the public on the issues surrounding climate change / Communicate climate change issues using a variety of communication tools						
CE7	Publish the SDCC Climate Change Newsletter - three newsletters per year.	Number of newsletters published annually; Number of times newsletter accessed by readers; Number of subscribers	Planned Commencement: Ongoing. Duration: until 2029.	Full Accountability	EWCC - Climate Action	
CE8	Maintain and develop the SDCC Climate Action Website.	Number of page views	Planned Commencement: Ongoing. Duration: until 2029.	Full Accountability	EWCC - Climate Action	Information and Communication Technologies (ICT)

COMMUNITY ENGAGEMENT

Ref.	Action	Tracking Measure	Timeframe	SDCC Role	Lead Department(s)	Partner(s) Identified
CE9	Use SDCC Social Media platforms to disseminate climate messages.	Number of interactions	Planned Commencement: Ongoing. Duration: until 2029.	Full Accountability	EWCC - Climate Action	Corporate Performance and Change Management (CPCM) - Communications Unit
Engage with key external partners to deliver programmes and campaigns to increase knowledge of climate issues						
CE10	Support the Sustainable Energy Authority of Ireland's (SEAI) Sustainable Energy Communities Programme in South Dublin by working with the Local Mentor. Where specific supported energy efficiency and renewable energy projects will not lead to unintended negative environmental effects in a local community.	Number of SECs participating	Planned Commencement: Ongoing. Duration: until 2029.	Influence	EWCC - Climate Action	Sustainable Energy Authority of Ireland (SEAI); Codema
CE11	Work with local clubs to implement GAA Green Clubs.	Number of clubs participating; SDCC Lead in place	Planned Commencement: Ongoing. Duration: until 2029.	Influence / advocate	EWCC - Climate Action	GAA; CARO; Regional Waste Management Office
CE12	Continue to support the Zero Together initiative through ongoing collaboration and stakeholder engagement to ensure alignment and implementation of SDCC's Climate Action Plan and the Zero Together roadmap to 2030.	Meetings attended / actions implemented in the roadmap relating to the Dublin Local Authorities	Planned Commencement: Ongoing. Duration: until 2029.	Influence	EWCC - Climate Action	Codema
CE13	Participate in the Council's Culture and Creativity Team to identify opportunities to work with local educational and arts organisations to consider climate action in their programmes.	Ongoing partcipation in Culture & Creativity Team	Planned Commencement: Ongoing. Duration: until 2029.	Influence, Advocate	EWCC - Climate Action	EETD - Arts Office
CE14	Strengthen existing networks and create new climate change links to encourage businesses to engage with climate action.	Number of engagements	Planned Commencement: Ongoing. Duration: until 2029.	Influence	EETD; EWCC	Chamber of Commerce; Local Enterprise Office (LEO)
CE15	Engage with external organisations to explore innovative opportunites or initiatives that could be progressed in South Dublin.	Number of engagements or opportunties	Planned Commencement: 2024. Duration: until 2029.	Influence	EWCC - Water Services	EWCC - Climate Action
CE16	Engage with the agricultural community to understand how SDCC can support resilience efforts and sustainable farming practices.	Record number of direct and indirect engagements with farming sector	Planned Commencement: 2024. Duration: until 2029.	Influence	EWCC - Water Services	EWCC - Climate Action

COMMUNITY ENGAGEMENT

Ref.	Action	Tracking Measure	Timeframe	SDCC Role	Lead Department(s)	Partner(s) Identified
Embed Climate Action within every department of South Dublin County Council						
CE17	Provide Climate Awareness training for all staff and elected members, and identify opportunities to embed climate awareness across all departments.	Number of staff trained; Number of councillors trained	Planned Commencement: Ongoing. Duration: until 2029.	Full Accountability	CPCM - Human Resources	EWCC - Climate Action
CE18	Develop SDCC climate action induction pack for all new staff.	Pack developed and rolled out	Planned Commencement: 2024. Duration: 2024.	Full Accountability	CPCM - Human Resources	EWCC - Climate Action
C19	Work with the IT department to identify opportunites where technology could be used to address climate issues, while also leveraging the Smart Dublin programme.	Projects identified	Planned Commencement: Ongoing. Duration: until 2029.	Full Accountability	ICT	EWCC - Climate Action
Support communities in South Dublin to deliver climate projects						
CE20	Deliver the Community Climate Action Fund.	% of the grant spent on local climate change projects	Planned Commencement: 2024. Duration: until 2026.	Coordinate and Facilitate / Advocate	EWCC - Climate Action	Department of Environment, Climate & Communications (DECC); community groups; Tidy Towns Groups
CE21	Support Tidy Towns initiatives which promote climate mitigiation or adaptation measures.	Number of initiatives supported annually	Ongoing	Influence	EWCC - Environmental Awareness	Tidy Towns groups; local groups
CE22	Community Department to identify key opportunities to engage with communities throughout the county, working with the Climate Action Team.	Number of meetings held; Number of opportunities identified	Ongoing	Full Accountability	Housing Social and Community Development (HSCD) - Community	EWCC - Climate Action
CE23	Work in collaboration with artists, and in partnership with the SDCC Climate Action Team, to develop creative art initiatives that engage the population of the county in conversations about climate action.	Number of initiatives supported	Ongoing	Full Accountability	EETD	EWCC - Climate Action
Mainstreaming climate proofed solutions across SDCC through Governance						
GOV1	Support the Elected Members and Strategic Policy Committees (SPCs) in their leadership role for climate actions.	Number of climate related briefings / events provided	Planned Commencement: Ongoing. Duration: until 2029.	Full Accountability	EWCC - Climate Action	
GOV2	Ensure Green Public Procurement (GPP) implementation in all SDCC tenders as part of the scored quality assessment, in order to source goods, services and works with a reduced climate and enviornmental impact. Provide relevant GPP training for staff.	% of Tenders including GPP; % of Tenders including GPP as a scored criterion; Number of staff to complete training	Planned Commencement: Ongoing. Duration: until 2029. Training rollout by Q4 2024.	Full Accountability	CPCM - Procurement	All SDCC Departments

COMMUNITY ENGAGEMENT

Ref.	Action	Tracking Measure	Timeframe	SDCC Role	Lead Department(s)	Partner(s) Identified
GOV3	Ensure that all new SDCC Projects are assessed for the feasiblity of incorporating climate actions and measures, with a focus on energy, greenhouse gas emissions, nature based SuDS, enhancing and retaining Green Infrastructure, biodiversity, sustainable transport and modal shift, EV charging, and environmental protection and co-benefits.	Number of projects proofed for SuDS / climate actions; Number of projects proofed for GI options; Number of projects proofed for active	Planned Commencement: Ongoing. Duration: until 2029.	Full Accountability	All SDCC Departments	LUPT; EWCC
GOV4	Ensure climate-proofing of all SDCC policies and strategies, including updates through liasion with the Climate Action Team.	Number of policies / strategies climate proofed	Planned Commencement: Ongoing. Duration: until 2029.	Full Accountability	All SDCC Departments	EWCC - Climate Action

6. DECARBONISING ZONE

Clondalkin, South Dublin

WHAT IS A DECARBONISING ZONE?

A Decarbonising Zone (DZ) is a chosen area where local authorities and communities work together to reduce the amount of carbon produced by their everyday activities. By looking within the community for ways to live and work more sustainably, these zones can find local solutions to global problems, which also benefit the local community, such as reducing greenhouse gas emissions, improving air quality, saving energy and reducing waste.

The main objective of a Decarbonising Zone is to find innovative but achievable ways to reduce greenhouse gas emissions from the area by 51% by 2030, based on the 2018 levels. Each zone's plan will be based on the characteristics of the area, what's of benefit to the community, and how these elements can work together to reduce or remove carbon and other greenhouse gases from the process.

By creating these zones, different approaches and projects can be tested and perfected, allowing other communities to apply these ideas based on their own needs.

WHY IS THE 'DECARBONISING ZONE' PROJECT HAPPENING?

As part of Ireland's Climate Action Plan 2019, every local authority in the country is required to plan a Decarbonising Zone. In 2023, as part of the Guidelines for Local Authority Climate Action Plans [16] published by the Department of the Environment, Climate and Communication (DECC), Decarbonising Zones must now be included in all local authority Climate Action Plans.

WHY WAS CLONDALKIN CHOSEN FOR SOUTH DUBLIN?

South Dublin County Council (SDCC) has selected an area of Clondalkin in which to establish the decarbonising zone.

To qualify as Decarbonising Zones, the chosen areas need to have certain characteristics that have potential for climate action across a variety of sectors. Clondalkin was chosen as a Decarbonising Zone as it was considered; 1) to be ready to support climate action, 2) to have a strong sense of community, 3) to be the right size in terms of population (at least 5,000 people for urban decarbonising zones).

As a Decarbonising Zone, Clondalkin also has a lot of potential for developing new and existing climate projects, with opportunities for tackling a host of issues. For example, air quality could be improved by looking at increasing use of public transport, active travel, and mobility hubs. Energy sustainability could be addressed with new energy infrastructure, like electricity network upgrades and district heating, and by improving efficiency

and renewable heat in residential, public, and commercial sector buildings. There are opportunities for greening projects that support biodiversity in both public and privately held areas of land.

Additionally, the development of a Clondalkin Local Area Plan (LAP) is currently underway within South Dublin County Council. Together, the local area plan and decarbonising zone have the potential to be developed hand in hand, thereby increasing the impact, and benefits, that each plan will have.

VISION FOR THE DECARBONISING ZONE

The Council has developed a draft vision for the Clondalkin Decarbonising Zone. This vision will be further developed and explored through public engagement and consultation during the next steps as outlined at the end of this chapter.

> **The Decarbonising Zone of Clondalkin will showcase the opportunities for decarbonisation and sustainable living in our County.**

THE 'CLONDALKIN DECARBONISING ZONE' TODAY

In order to hit the target of a 51% reduction in carbon emissions by 2030, we first need to know; the current emissions in the decarbonising zone; their location; what activities are producing them; and the purpose of these activities.

It is also necessary to consider everything from the population breakdown and travel patterns to the types of buildings and heating systems within the area. This gives us a detailed overview in terms of knowing existing behaviours, activities, and infrastructure so that we can decide how best to develop solutions that are tailored to Clondalkin and everyone living and working here. Figure 6.1 below shows the location of the proposed Clondalkin DZ.

Size, Zoning and Infrastructure

Clondalkin is a town and suburb, located to the west of Dublin city, just outside the M50. The Clondalkin decarbonising zone (DZ) is shown in Figure 6.1 and Figure 6.2 below. The zone is mainly used for residential purposes, which covers 52.6% of the total area. Open space (parks, etc) with 22.8%, enterprise and employment related areas with 11.2%, areas to provide strategic development with 6.7%, town centres with 3.8%, development of local centres with 1.6% and village centres with 1.3%.

The total area of the 'Clondalkin Decarbonising Zone' is 8.11 km2, including 10,935 households, and 413 commercial and industrial buildings.
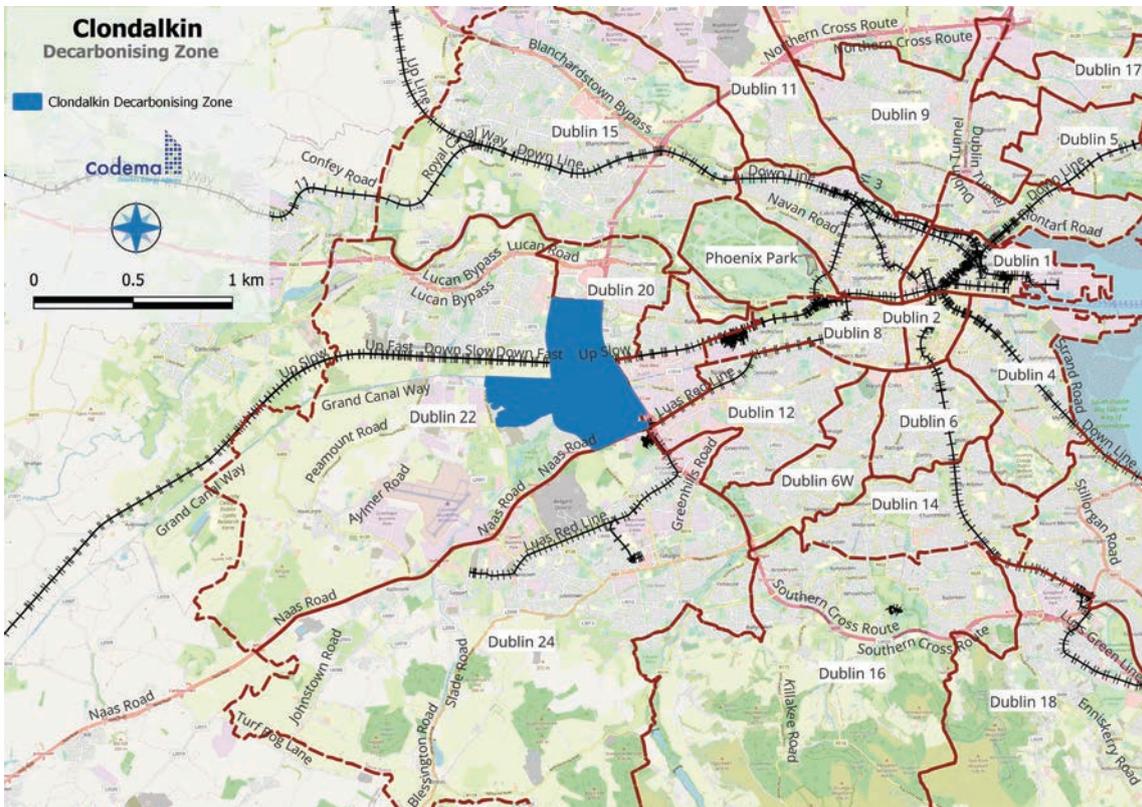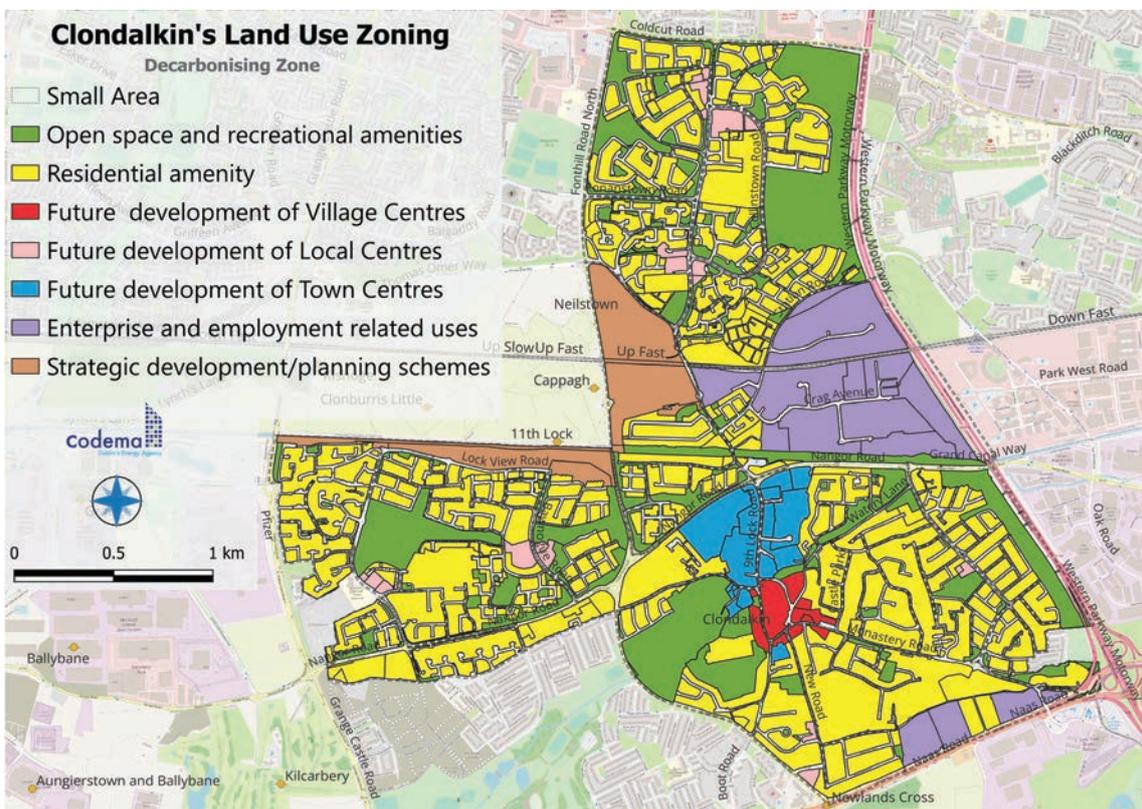
Figure 6.1: Location of Clondalkin DZ

Figure 6.2: Land use zoning in Clondalkin DZ

Population

The population of Clondalkin DZ is approximately 33,000 (15.0% of the population is older than 60 years old, 29.3% is younger than 20 years old, and the remaining 55.7% are between 20 and 60 years old).

Public Infrastructure

In addition to the town centre, residential, and open space areas, Clondalkin has important public infrastructure, as shown in Figure 6.3.
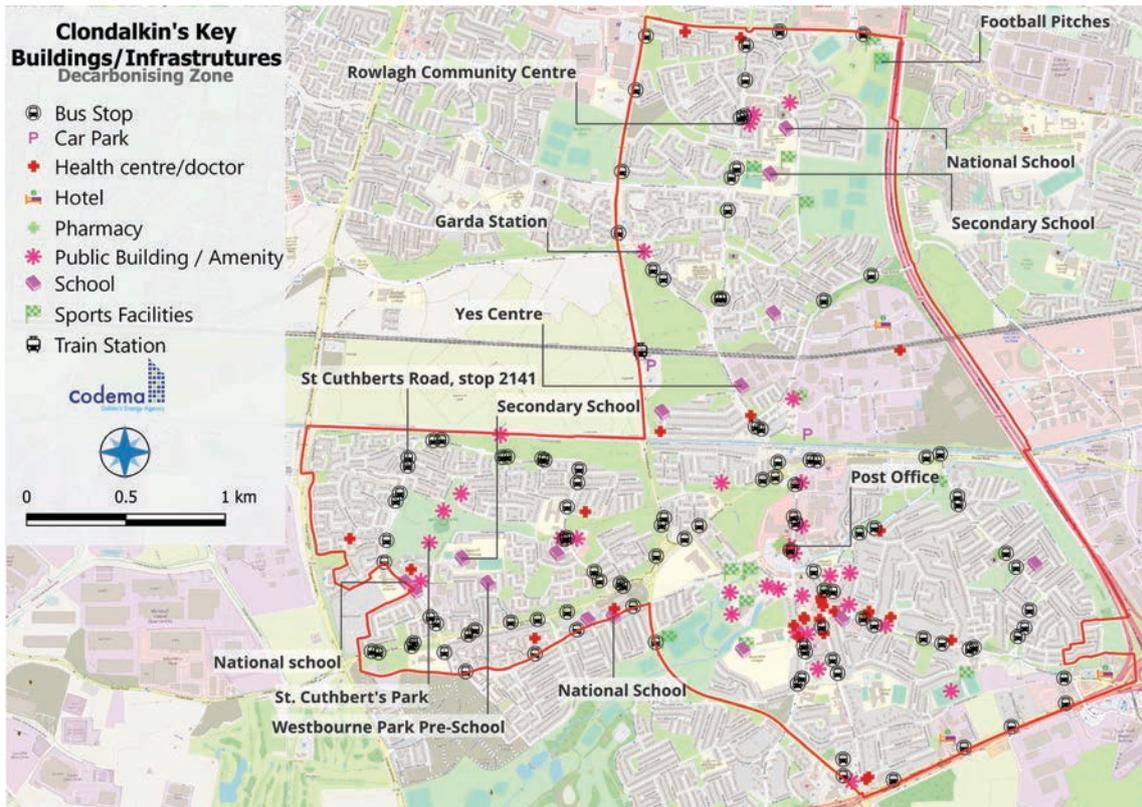
Figure 6.3: Amenities and public places in Clondalkin DZ

Transport links

Clondalkin-Fonthill train station, is the main station within the Clondalkin decarbonising zone and connects Clondalkin to Dublin City. Other key transport links that border the zone include the M50 on the east and the N7 along its southern border. Dublin bus routes 13, 51d, 68, 68a and 69 as well as the Nitelink service 69n, also serve the area.

The Red Cow Park and Ride hub, is located just outside the southeastern tip of the zone, offering significant access not only to the Luas network but also to both private and public coach and express bus services serving the city centre as well as a selection of rural and intercity routes.

EXISTING KEY CONTACTS AND STAKEHOLDERS

Stakeholder engagement is essential to the development of the Decarbonising Zone (DZ) plans. For example, the National Guidelines of the Local Authority Climate Action Plans recommends early and continued engagement of stakeholders throughout the project. Additionally, the guidance highlights that the local authority does not possess "the control or power to directly influence all of the energy and emission reductions within the boundaries of the DZ area". Therefore, it is crucial to engage a wide range of sectors and stakeholders early in the DZ process to identify actions and progress the development and implementation of the plan. [16]

To ensure a fair and just process in developing and implementing the Clondalkin DZ, SDCC plan to engage stakeholders from the local area such as community groups, educational facilities, health centres, childcare and youth groups, faith bodies, and the creative arts, amongst others. Wider public engagement with the residents and community in Clondalkin, in alignment with the development of the Clondalkin Local Area Plan, will also be important.

It will be crucial to identify and engage "key intermediaries" such as those with wide community following and influence in the area. These trusted groups and individuals can act as "connectors" between the community and the Council, leveraging existing projects, raising awareness of the DZ plans and engaging the wider community.

One example of a key intermediary group that should be engaged in the DZ process are the Sustainable Energy Communities (SECs). A sustainable energy community is a group of people who have come together to improve how energy is used and to develop a sustainable energy system for the benefit of their community. Energy communities often look at projects in homes, transport, and local business. They aim to:

- be energy-efficient
- use renewable energy
- consider smart energy solutions

An SEC can include a range of different energy users in the community such as houses, sports clubs, community centres, churches and businesses. In this way, an SEC connects sustainable energy, local economic development and public wellbeing. There is one Sustainable Energy Authority of Ireland (SEAI) Sustainable Energy Community (SEC) in the Clondalkin DZ - 'Clondalkin Energy Group SEC'.

EMISSIONS WITHIN THE CLONDALKIN DECARBONISING ZONE

A Baseline Emissions Inventory (BEI) is a way of taking a snapshot of how much greenhouse gases (GHGs) are currently being released in a specific area. It looks at sources of emissions, such as homes, cars, commercial and public activities and industry, and other activities as well as electricity usage and waste management. The Baseline Emissions Inventory helps guide the actions taken in the decarbonising zones, towards a cleaner, more sustainable way of living.

The Baseline Emissions Inventory was developed using methodologies from several Codema reports [22 & 23], national guidelines for local authority climate action plans [16] and supporting datasets. These key data sets include: 2016 Census, SEAI National BER Research Tool, National Transport Authority modelling outputs, SEAI Monitoring and Reporting system, Dublin Region Energy Masterplan modelling outputs. The series of maps outlined in the following section have been created using the same methodologies, sources and datasets.

Decarbonising Zones take their BEI from 2018 levels, as required in national climate policy. Using this baseline data, (Figure 6.3) it's possible to see where the biggest carbon savings can be made, and how best to reach the goal of 51% reduction of GHG emissions by 2030. The results show that the Clondalkin DZ produced 109,875 tonnes of Carbon Dioxide equivalent (tCO$_2$e) in 2018. Figure 6.4 outlines the key sources of GHG emission in the Clondalkin DZ in 2018. By comparing the 2030 emissions data to this 2018 baseline, it will be possible to see the progress made and measure the success of climate actions across the zone.
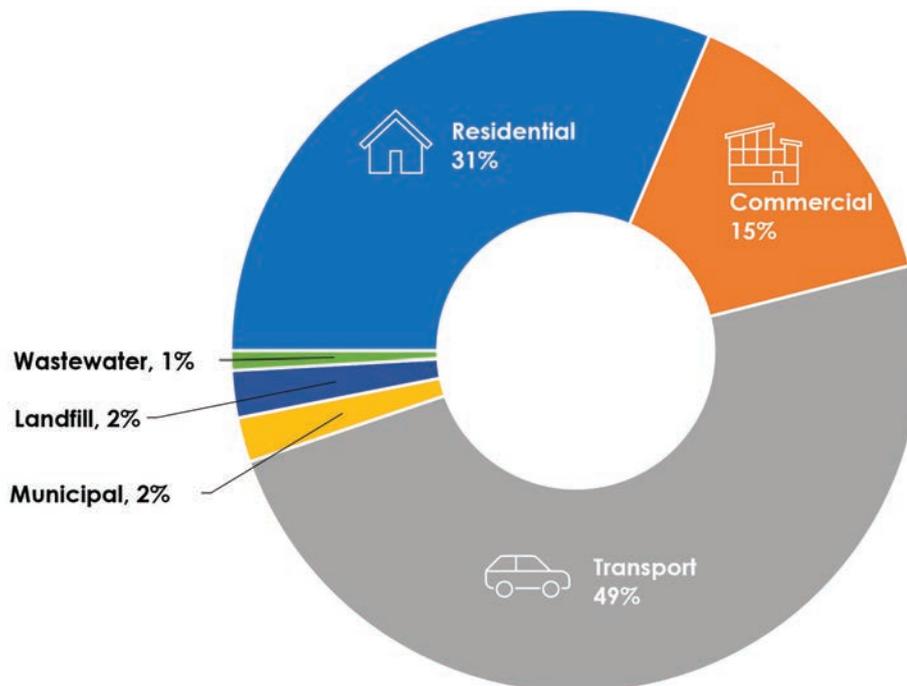
Figure 6.4: Baseline Emissions Inventory (BEI) for Clondalkin Decarbonising Zones showing key sources of GHG Emissions

Residential Emissions & Profile

The following series of maps - residential emissions, building energy rating, and heating system (Figures 6.5, 6.6, and 6.7 below) - help us to understand the type of homes and heating systems in the Clondalkin Decarbonising Zone and the areas where home energy upgrades or retrofits can have the greatest impact on emissions and air quality, as well as the type of work that will be required. An estimated 10,939 households are located in the DZ area.

The maps look at 'Small Areas within the DZ. A 'Small Area' is the smallest geographical breakdown used in Ireland for statistical purposes and each small area includes between 80 to 120 buildings. Figure 6.5 below shows the spatial breakdown of residential emissions in the Clondalkin Decarbonising Zone, per 'Small Area' highlighting the areas of highest, and lowest emissions, from the residential sector. The darker colours on the map help to show the areas where home energy upgrades can have the greatest impact on reducing emissions.

A Building Energy Rating (BER) certificate rates a home's energy performance on a scale between A and G. A-rated homes are the most energy efficient, while G-rated homes are the least energy efficient. Figure 6.6 below shows the average Building Energy Rating (BER) of the houses in each small area in the Clondalkin DZ. The BERs are largely in the mid to lower ranges with C3, D1, D2 ratings reflecting the ageing building stock in this area, and highlighting the considerable work required to meet the national aims of improving the BER of our building stock.

Figure 6.7 below shows the areas where the primary heating fuels – gas, oil, and electricity are used in the decarbonising zone. Natural gas is the main fuel source for residential heating (75%), followed by oil (12%) and electricity (9%). Other fuels include coal, wood, peat, and Liquefied Petroleum Gas (LPG).
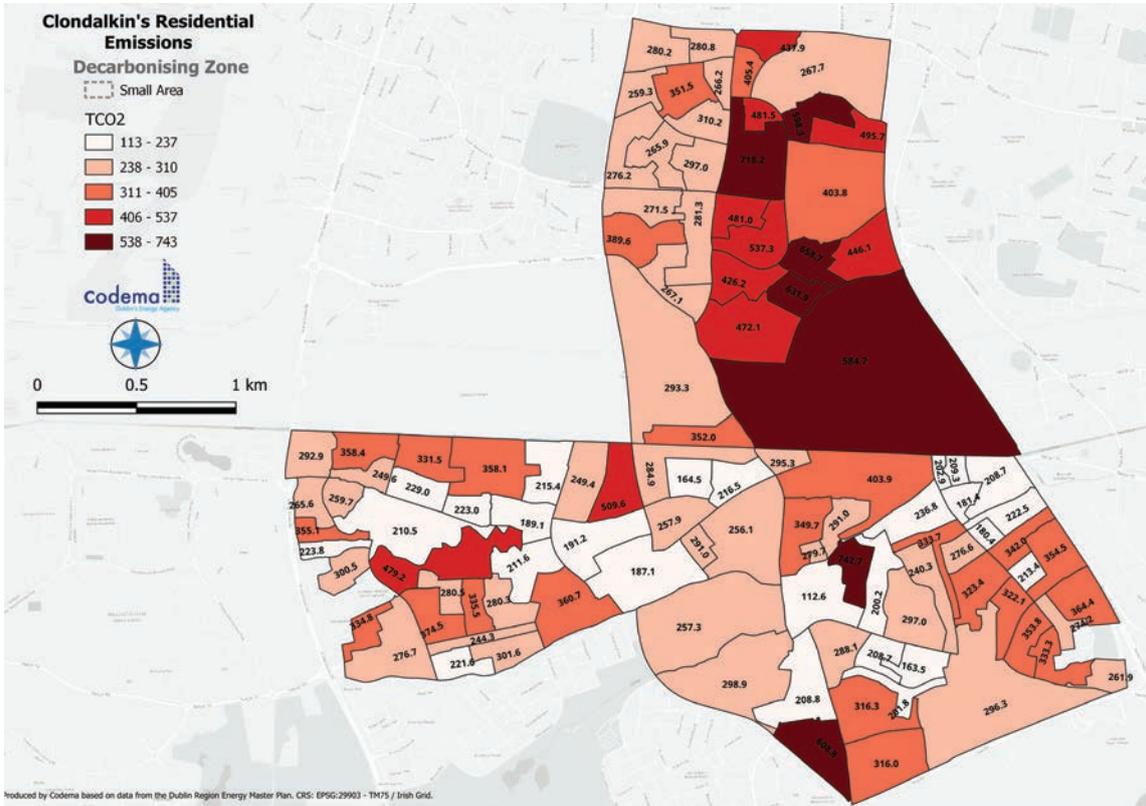
Figure 6.5: Residential emissions (tCO2) per Small Area in Clondalkin DZ
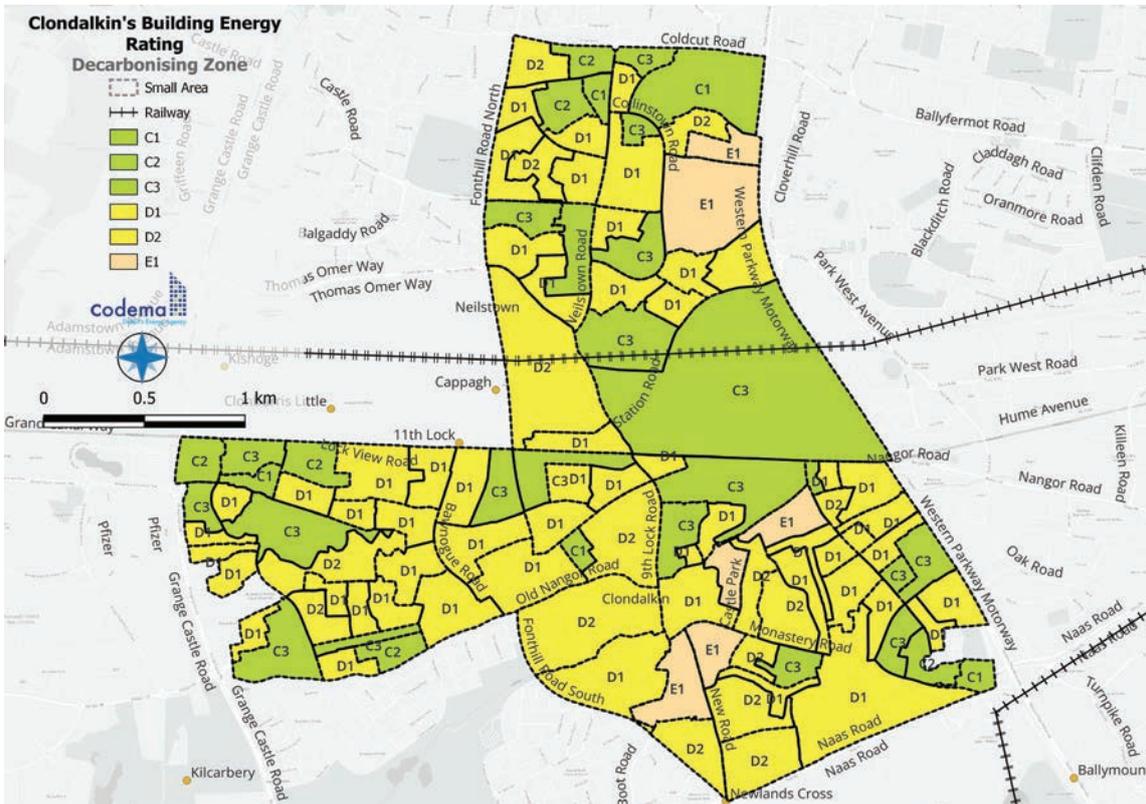
Figure 6.6: Estimated Average Building Energy Rating (BER) of the houses in each small area in the Clondalkin DZ
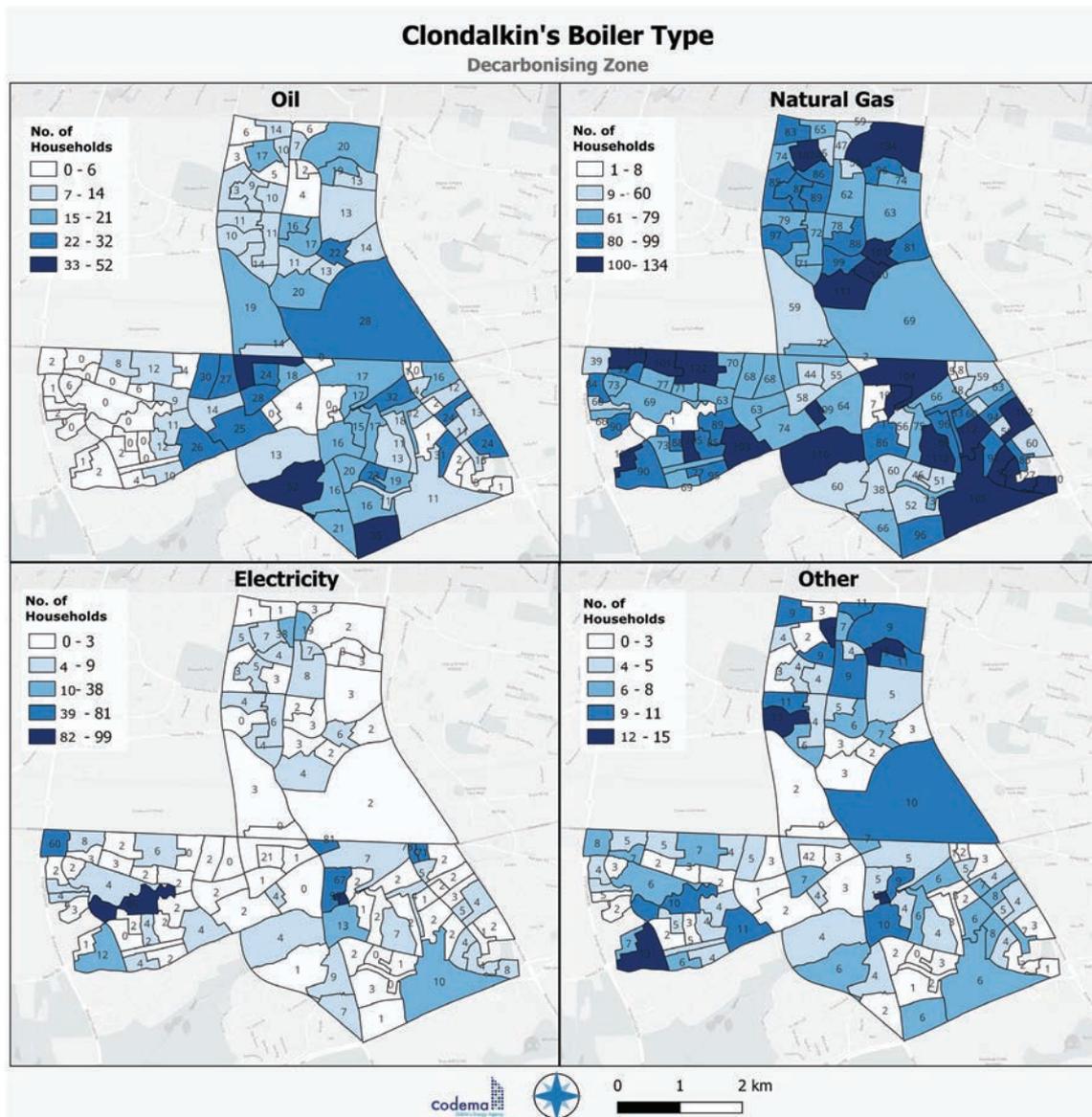
Figure 6.7: Heating fuels used per small area in Clondalkin DZ, according to 2016 census data

Commercial & Public Sector Emissions & Profile

The greenhouse gas emissions from the wider commercial sector within the Clondalkin Decarbonising Zone are reflected in Figure 6.8 below. This includes small, medium and large businesses, from high street retail shops and supermarkets to office buildings, and industrial activities. It also includes public sector buildings (local authorities and additionally all other public sector). Understanding the areas of highest and lowest emissions from this sector, helps us to understand where future emission reduction and renewable energy projects can have the greatest impact.
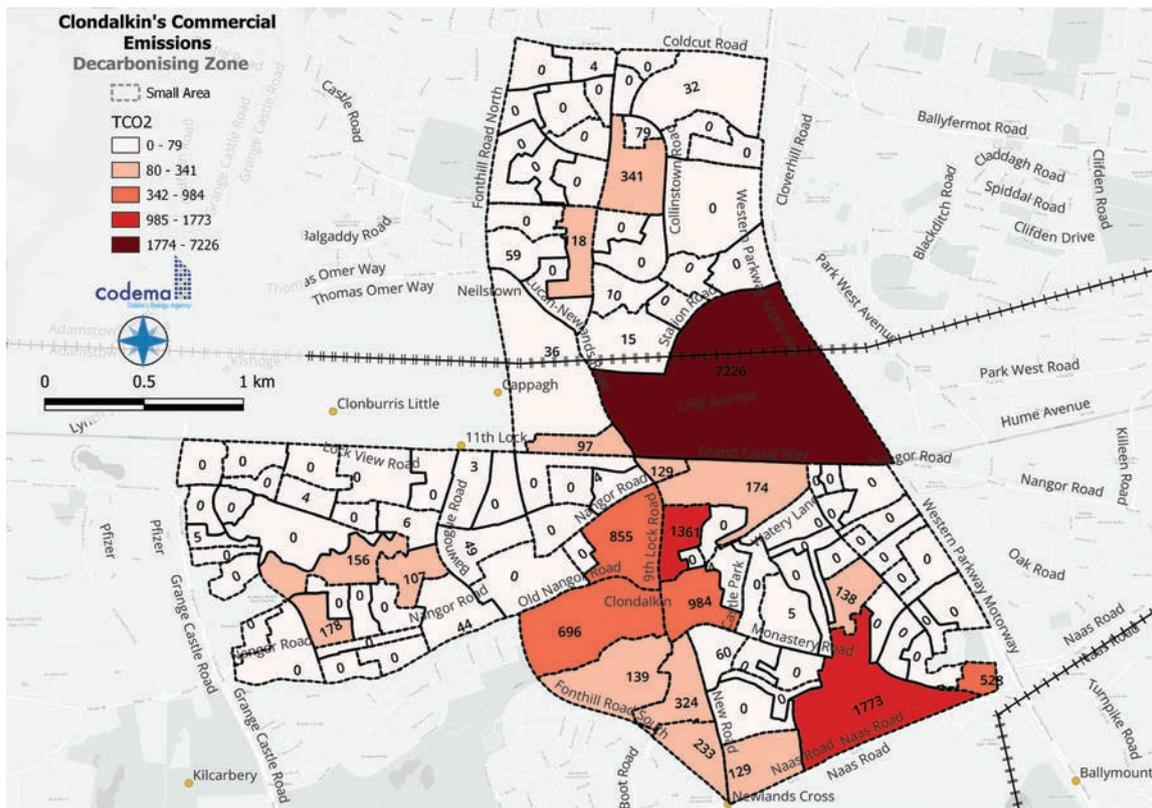
Figure 6.8: Commercial emissions (tCO2) per Small Area in Clondalkin DZ

Transport Emissions & Profile

In the Clondalkin Decarbonising Zone about 97% of transport emissions come from road trips, and 3% from rail transport. Figure 6.9 below shows the roads in the decarbonising zone that have the highest emissions associated with them and Figure 10 shows the ways that people within the decarbonising zone travel to work, school or college. To reduce emissions in transport, and improve air quality, a shift to active travel is needed in addition to electric vehicle uptake. This chart shows that there may be a large opportunity to shift people away from car journeys, as 50% of all journeys within the decarbonising zone were in a car (based on 2016 CSO data [24]). This information can be used to support new plans for more sustainable travel options within the zone.
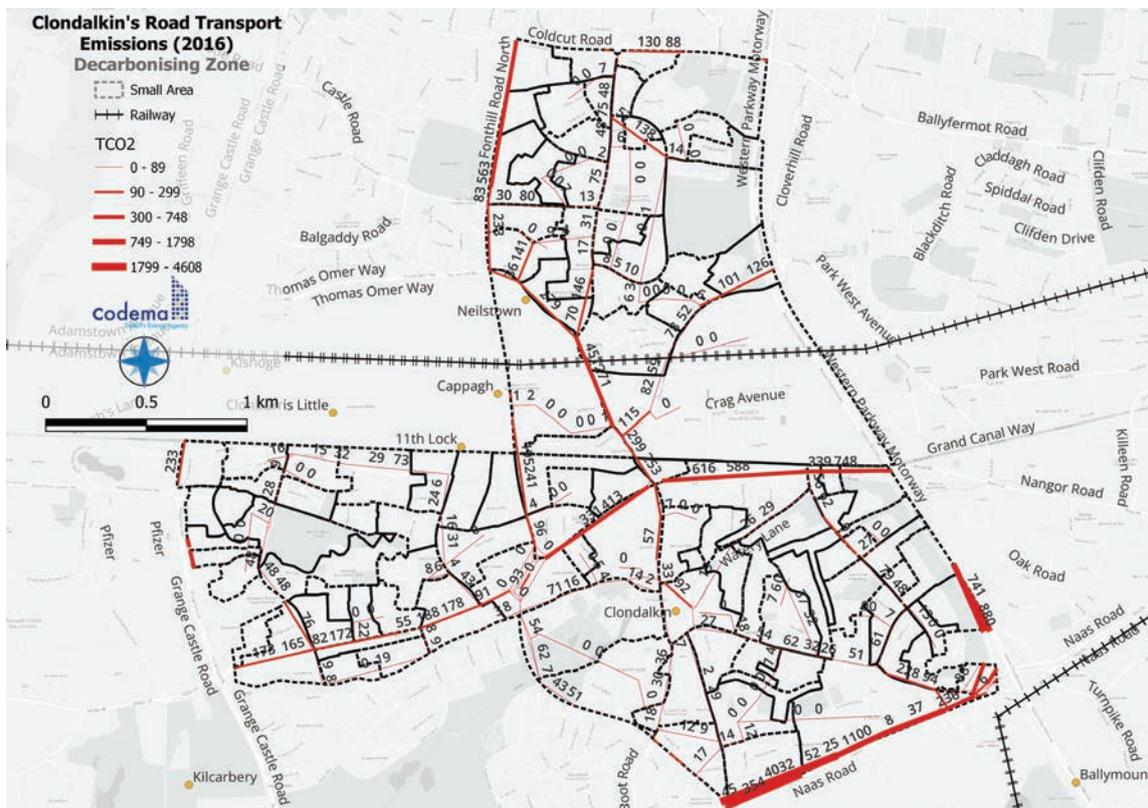
Figure 6.9: Road Emissions (tCO2) - developed based on modelling data supplied by the National Transport Authority (NTA)

Clondalkin DZ Transport mode breakdown (%)
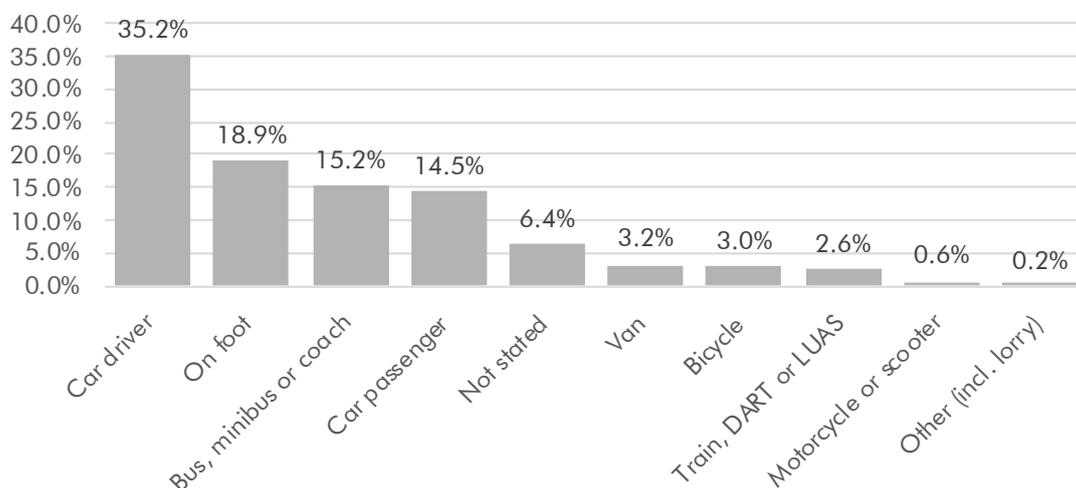
Figure 6.10: Journeys to work, school or college within the Clondalkin zone (CSO 2016 [24])

ROLE OF SOUTH DUBLIN COUNTY COUNCIL

The core role of South Dublin County Council in the Clondalkin Decarbonising Zone is as a facilitator. To support and deliver the Decarbonising Zone plan, action will be needed by South Dublin County Council, but also other public sector organisations, local business and industry, social and community groups, and the wider public.

Recognising this, South Dublin County Council will play several roles while supporting climate action in Clondalkin. These roles are:

- Direct action - delivering on climate action in areas within the local authority's direct control including own buildings, infrastructure, systems, operations, and staff.

- Facilitation - delivering on climate action by coordinating, connecting, and linking others. This can include stakeholder engagement, capacity-building, developing partnerships, funding, and policy support, among other enabling activities.

- Advocacy – communicating, influencing, and building on a shared vision of the DZ, as well as raising awareness of the DZ plan and developing recommended and new actions with a wide network of local stakeholders to achieve support from the local community.

CLIMATE PATHWAYS

Climate pathways are the different routes or strategies that could significantly reduce emissions within the Decarbonising Zone. These pathways highlight some of the directions that can be taken to reduce emissions and show how potentially effective these directions might be. The aim is to create a plan that best suits the unique circumstances and resources within the zone, while also aligning with Ireland's national climate goals (i.e., 51% reduction in emissions by 2030). By exploring these climate pathways, the zone can make significant progress in combating climate change and creating a cleaner, more sustainable future for Clondalkin.

In this section, we look at the Climate Pathways that could be explored within the residential, commercial and transport sectors.

Residential - Climate Pathway to 2030

A potential emissions pathway for the residential sector of the Clondalkin DZ is presented below in Figure 6.11. Emission reduction measures are presented in orange and are ranked in terms of cost effectiveness from left to right. These measures are: 1) Electricity Supply, 2) installation of solar PV on residential rooftops, and Home Energy Upgrades. A 5% increase in emissions is expected in a 'Business As Usual' scenario, which is based on population and economic growth scenarios developed in the Dublin Regional Energy Masterplan by Codema [23], drawn from ESRI sources.

1. **Electricity Supply**

   Electricity grid decarbonisation means using cleaner sources such as wind and solar to generate electricity that in turn powers our homes and businesses. Future electricity grid decarbonisation will reduce emissions by 28% (9,500 t CO_2) in the Clondalkin DZ (based on the SEAI's projections from the Gap to Target Model). This leaves an additional 9,700 t CO_2 for the public sector, commercial sector, industry and the general public to tackle in order to reach the target of 51% GHG emissions reduction by 2030.

2. **Solar PV & Home Energy Upgrades**

This remaining 9,700 t CO_2 target could be reached through a combination of:

- Rooftop Solar PV panels.

- Home Energy Upgrades for about 5,460 homes with BERs between D1 and G.

- Home energy upgrades on the remaining 5,479 homes between BER C1 and D1 provide potential for reducing emissions in the zone beyond the 51% target. Home energy upgrades (or retrofits) may involve installation of renewable heating systems, attic and wall insulation, ventilation, and airtightness measures.
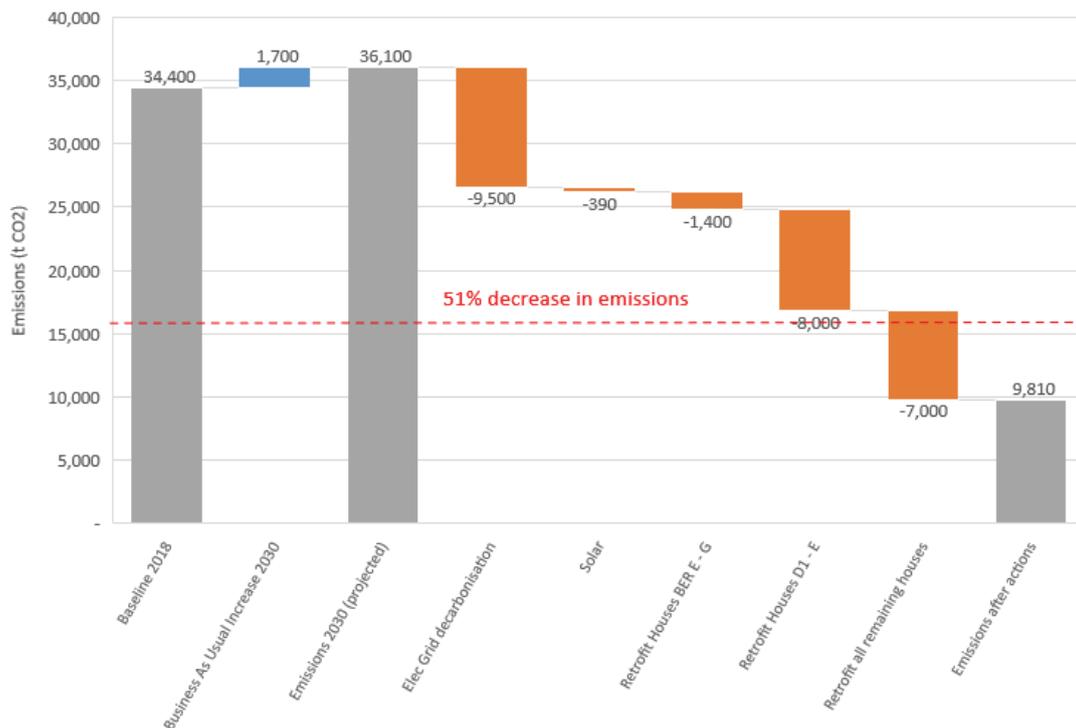
Figure 6.11: Clondalkin DZ Residential Climate Pathway

Commercial and Public Sector - Climate Pathway to 2030

A potential emissions pathway for commercial emissions within the DZ is presented in Figure 6.12 below. The measures are presented in order of cost per tonne of CO_2 saved, meaning the measures on the left of the chart are estimated to provide more value for money. The commercial sector refers to commercial buildings and public buildings (local authorities, and all other public sector). The main areas for reducing emissions in the commercial sector are: 1) Electricity Supply and 2) the Decarbonisation of Heat.

1. **Electricity Supply**

    Similar to the residential sector, the decarbonisation of the electricity grid will contribute significantly towards the 51% reduction in the commercial sector.

2. **Decarbonisation of Heat**

    In the commercial and public sector, completion of a selection of the following projects could allow the DZ to meet its targets:

    - Decarbonising the heat consumption of the top 11 commercial users, which include a recycling facility, two hotels, three warehouses, a gymnasium, a centre for asylum seekers, a department store, and two supermarkets.

    - Target the remaining top 80% of commercial heat consumption by targeting the next 79 largest commercial consumers, which includes 9 retail shops, 47 industrial sites, 7 hospitality sites, 8 offices, 3 health buildings, 2 leisure centres and 3 miscellaneous buildings.

    - Solar PV on commercial buildings with available roof space.

    - Lighting upgrades within the top 80% of commercial users.

    - Decarbonising priority SDCC buildings within the zone (DeliveREE project).

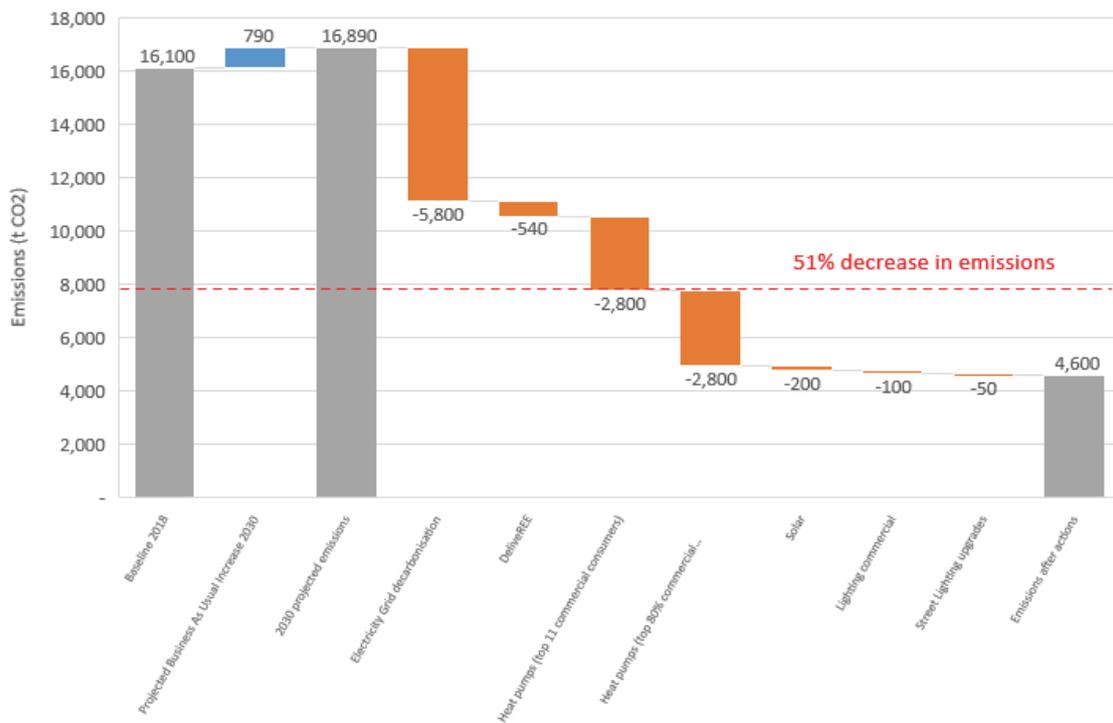   - Street lighting upgrades, based on 2023 public lighting data.

Figure 6.12: Clondalkin DZ Commercial Climate Pathway

Transport - Climate Pathway to 2030

A potential emissions pathway for transport emissions within the Clondalkin DZ is shown in Figure 6.13 below. The measures are presented from the most cost effective (€ per tonne CO2) on the left, to the most expensive (€ per tonne CO2) on the right and include 1) Bus Electrification, 2) Light Good Vehicles, 3) Heavy goods Vehicles, and 4) Car use and active travel. More detail on what is included in these measures is included below:

Business as Usual / Current Trajectory

Current modelling suggests that there may be a 3% increase in transport emissions in this zone. This is drawn from National Transport Authority (NTA) modelling, and contributing factors are a projected 65% increase in rail emissions, and a 1% decrease in road emissions. This modelling includes transport projects planned this decade including the DART expansion through South Dublin and into Kildare (non-tunnel elements), Radial Core Bus Corridors and revised routes and services under the BusConnects programme. It does not include the impacts of SDCC's Cycle South Dublin schemes, a fully completed Greater Dublin Area Cycle Network, the Lucan LUAS, or potential demand management measures on the M50.

1. **Bus Electrification**

   In relation to buses in the DZ, it will be necessary for 70% of all buses (public and private) to be electrified. It is the intention of the NTA to deliver a fully low-emission public urban bus fleet by 2030, consisting of battery electric, diesel hybrid and hydrogen fuel cell vehicles, with a fully zero-emissions fleet by 2035. This is likely to provide the greatest contribution towards the 70% target, as regional and private bus services will be more difficult to decarbonise.

2. **Light goods vehicles (LGV)**

   Vehicles considered an LGV include commercial jeeps, vans and smaller trucks (public and private). For the Clondalkin DZ to meet 2030 targets there would need to be a 5% reduction in vehicle kilometres, achievable through freight logistics planning improvements, 10% switch to e-cargo bikes and 40% switch to Electric Vehicles.

3. **Heavy Goods Vehicles (HGV)**

   Vehicles considered an HGV include large trucks and articulated trucks. For Clondalkin DZ to reduce emissions in line with national targets a reduction of 5% in vehicle kilometres will be necessary as well as a shift of 20% of HGVs to Electric Vehicles and 5% to rail freight.

4. **Car travel and active travel**

   It will be important to prioritise active travel (walking, cycling) and public transport throughout Clondalkin DZ to encourage a 39% reduction in car usage or number of kilometres travelled by car within the DZ. Furthermore, switching 38% of cars in the DZ to EVs will be necessary to meet 2030 targets.

Figure 6.13: Clondalkin DZ Transport Climate Pathway

SPATIAL PLANNING & CLIMATE PATHWAYS

Having looked at Climate Pathways for each sector, spatial planning can help inform how to prioritise projects - and crucially, where to place them. This section includes a sample of climate action measures, presented spatially, to support the pathways identified above.

Spatial planning, in the context of climate action, is a strategic approach to managing land use and development. Essentially, it means looking at the area and deciding 'what goes where' in order to reach the goal of a 51% reduction in emissions by 2030, minimise environmental impact, and promote a greener, more sustainable future for Clondalkin.

Where could Solar PV be installed?

An initial analysis in Figure 6.14 below highlights the potential rooftop solar electricity opportunity in the Clondalkin Decarbonising Zone, showing that, at a high-level, many buildings have the potential to consider solar panels for electricity. This map is an initial indicator of the potential of solar panels, estimated using land classifications from the European Environment Agency Urban Atlas.[25] Further building-specific consideration is needed to determine the true potential for solar panels. Additional factors for consideration include: shading, roof pitch, and access.

Figure 6.14: Potential Rooftop solar electricity opportunity in Clondalkin DZ

Where could Heat Pumps be installed?

A heat pump provides heat to a building, by capturing heat from outside and moving it inside. It uses electricity to do this, however the quantity of heat delivered into your home is about three times greater than the quantity of electricity used to power the system. Heat pumps are recognised as an important way to increase renewable energy in heating.

About 1700 homes in the Clondalkin Decarbonising Zone may be suitable for heat pumps without further insulation and energy efficiency measures. The remaining 9,200 homes are likely to require further insulation and energy efficiency measures before they are suitable for heat pump installations. Figure 6.15 below shows the percentage of houses potentially suitable for heat pumps in each Small Area - the darker colours on the map help to show the areas where greater numbers of suitable houses are located.

Figure 6.15: Heat pump suitability potential in Clondalkin DZ

Where could District heating be used?

District heating is a tried and tested system made up of a network of underground pipes, serving an entire community or beyond. Instead of each building having its own separate heating system, they all connect to a shared heat network, much like the electrical grid.

The first step in creating a district heating system is to look within the area and identify existing and potential sources of heat. This heat could come from many sources: waste heat from sources such as data centres, power plants and waste incineration; environmental sources like river and sea water; geothermal energy, and also large heat pumps, amongst others.

The hot water is then pumped through a network of well-insulated underground pipes that run beneath the streets. These pipes carry the heat throughout the area to each individual building. Although relatively new to Ireland, these systems have been in use in Europe for decades. District heating is recognised in Ireland and by the EU as an important way to increase renewable energy in heating.

The map below in Figure 6.16, from Codema's Dublin Region Energy Masterplan [23], compares the cost (€/tonne CO_2) of heat pumps and district heating in the decarbonising zone. This analysis includes savings from both CO_2 emissions and CO_2 equivalent emissions and costs included in this analysis include capital expenditure, replacement expenditure, and maintenance costs. The areas coloured blue are considered to be the most suited to heat pumps and the areas coloured red are considered to be the most suited to district heating.

This indicates that district heating may potentially be a viable option in the Clondalkin Decarbonising Zone in the long term, and that this heating solution merits further consideration. Additionally, SEAI's National Heat Study [26] has identified the Clondalkin area as an important 'candidate area' for district heating.
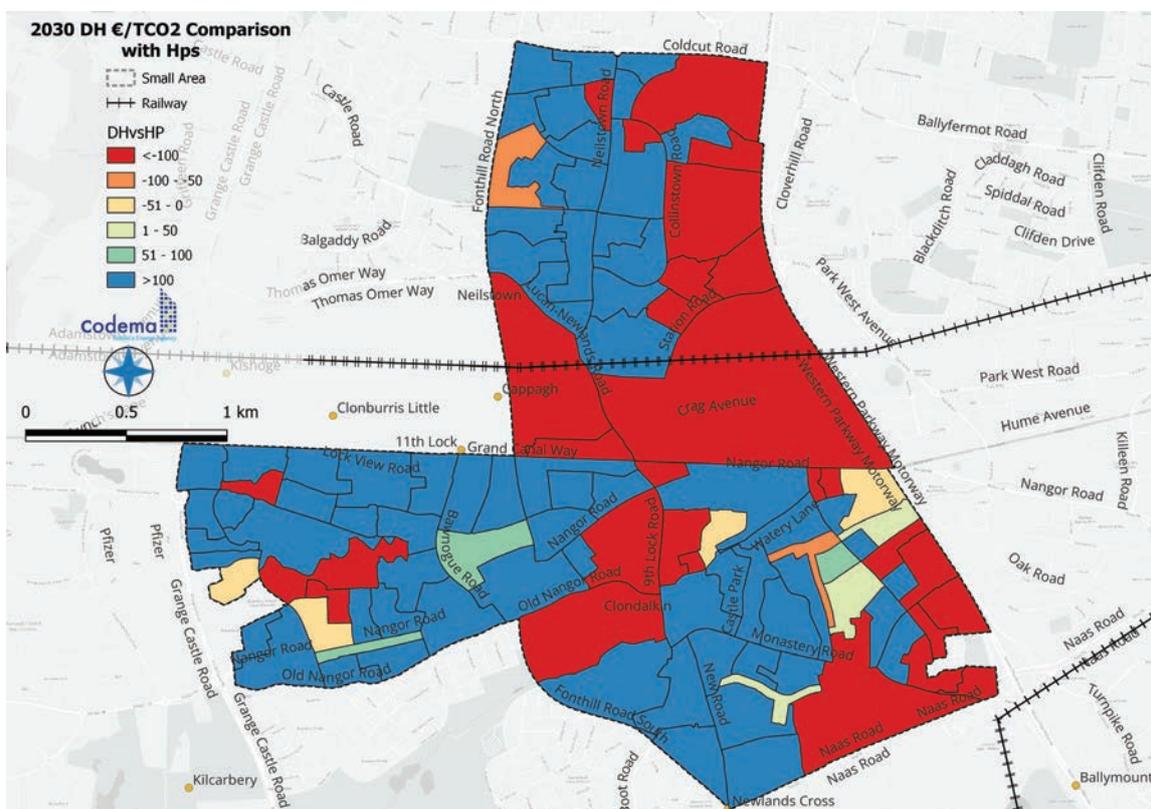

Figure 6.16: Heat pumps and district heating in Clondalkin DZ

District heating has many benefits, including;

- Climate-friendly - modern district heat networks run on renewable energy reducing emissions and improving air quality.

- Energy Efficiency - district heating is typically more efficient than individual heating systems.

- Less Maintenance - district heating means the responsibility for maintaining the heating system is on the centralised facility operators, saving residents from the burden of maintaining their own heating equipment.

- Future proof - there's no need to change technology in homes in the future as this happens at the district heating energy centre.

- Energy storage - District heating can provide 'grid services' to the electricity grid. It can help increase the amount of renewable energy in the electricity grid by providing flexibility of heat use. For example, the district heating system could use additional renewable energy when it's available and store it in hot water tanks for later use in the district heat network.

OPPORTUNITIES FOR CLIMATE ACTION IN CLONDALKIN

Opportunity types

Building on the climate pathways discussed above, this section catalogues climate action opportunities within the Clondalkin Decarbonising Zone in more detail. Many types of action are needed to work together in a complementary way to deliver the vision for the Clondalkin Decarbonising Zone. These actions need to span scientific analysis, project delivery, engagement, social and community realms, and governance structures to achieve the systems change needed for a thriving, and climate friendly Clondalkin.

The climate pathways for Residential, Commercial and Public Sector, and Transport have the potential to deliver large scale emission reductions. However, opportunities for effective, targeted climate action, can be enhanced by actions in relation to biodiversity, circular economy, waste management and nature-based solutions.

Table 6.1 below outlines a range of potential climate action opportunities to be considered as part of the Clondalkin Decarbonising Zone. It identifies the potential role of South Dublin County Council in terms of 'Direct Action', 'Facilitation', or 'Advocacy', as outlined previously in this section. Also detailed are potential 'co-benefits' that could be realised through progressing the Opportunity. Co-benefits are additional positive effects of climate action that can be realised beyond direct emission reductions; such as cleaner air, reductions in energy poverty, health and well-being improvements, increased employment, biodiversity, water quality, ecosystem health, energy security, reduced noise levels, embodied carbon, reduction in pollution/littering/dumping, inclusivity, and public participation/community growth.

Register of Opportunities

Table 6.1: Register of Opportunities for Clondalkin Decarbonising Zone

Strategic area	Opportunity	LA Role(s)	Co-benefits
Residential Emissions	Upgrade of residential building stock for energy efficiency & renewable heat systems.	Direct action, Facilitation, Advocacy	Clean air, energy poverty, health, employment, energy security
Residential Emissions	Upgrade of social housing stock for energy efficiency & renewable heat systems.	Direct action, Facilitation, Advocacy	Clean air, energy poverty, health, employment, energy security
Residential Emissions	Residential rooftop solar PV.	Direct action, Facilitation, Advocacy	Clean air, energy poverty, health, employment, energy security
Residential Emissions	District heating for residential building stock.	Direct action, Facilitation	Clean air, energy poverty, health, employment, energy security
Residential Emissions	Support development of group or neighbourhood approaches for residential retrofit, renewable heating, and solar installation.	Facilitation	Clean air, energy poverty, health, employment, energy security
Residential Emissions	Tackling the split incentive - raise awareness of tax incentives for retrofit of rented properties, and future requirements for minimum BER for rented properties.	Advocacy	Clean air, energy poverty, health, employment, energy security
Commercial & Public Emissions	Energy upgrade of priority South Dublin County Council buildings in the decarbonising zone.	Direct action	Clean air, health, employment, energy security
Commercial & Public Emissions	Public lighting upgrades within the decarbonising zone.	Direct action	Clean air, health, employment, energy security
Commercial & Public Emissions	Upgrade of commercial and public building stock for energy efficiency & renewable heat systems.	Direct action, Facilitation, Advocacy	Clean air, health, employment, energy security
Commercial & Public Emissions	Commercial rooftop solar PV.	Direct action, Facilitation, Advocacy	Clean air, health, employment, energy security
Commercial & Public Emissions	Lighting upgrades for commercial buildings.	Direct action, Facilitation, Advocacy	Employment, energy security
Commercial & Public Emissions	District heating for commercial & public sectors.	Direct action, Facilitation	Clean air, energy poverty, health, employment, energy security
Commercial & Public Emissions	Explore opportunities for waste heat recovery and utilisation.	Direct Action, Facilitation, Advocacy	Clean air, energy security, circular economy
Commercial & Public Emissions	Explore opportunities for engagement with commercial sector - improving efficiency of building energy management systems.	Facilitation	Clean air, employment, energy security

Strategic area	Opportunity	LA Role(s)	Co-benefits
Commercial & Public Emissions	Engage with local 'significant energy users' to explore opportunities for collaboration and synergies on decarbonisation projects.	Facilitation	Clean air, employment, energy security
Commercial & Public Emissions	Explore use of electric-only tools by SDCC Public Realm Department for maintenance of green spaces within the decarbonising zone.	Direct action	Clean air, health
Commercial & Public Emissions	Explore opportunities for enhanced green procurement for local authority and public sector bodies within the decarbonising zone.	Direct Action, Facilitation, Advocacy	Embodied carbon
Transport Emissions	Transition to electric vehicles – private car, LGV, HGV.	Direct action, Facilitation, Advocacy	Clean air, health, energy security, noise
Transport Emissions	Explore opportunities for expansion of electric car-sharing schemes within the decarbonising zone.	Facilitation, Advocacy	Clean air
Transport Emissions	Electrification of buses and supporting development of charging opportunities.	Facilitation, Advocacy	Clean air, health, energy security, noise
Transport Emissions	Supporting increase in use of public transport.	Facilitation, Advocacy	Clean air, health, energy security, noise
Transport Emissions	Explore opportunities for new public transport and active travel linkages to nearby rail services.	Facilitation	Clean air, health
Transport Emissions	Active travel - programmes for schools such as walking bus, school streets, green schools, local air quality monitors	Facilitation	Clean air, health, inclusivity, public participation
Transport Emissions	Active travel - explore opportunities for 'bike libraries' or 'try-a-bike' schemes.	Direct action	Clean air, health, inclusivity, public participation
Transport Emissions	Explore opportunities for areas for use as 'last mile' delivery hubs.	Facilitation	Clean air
Transport Emissions	Review opportunities to reallocate public parking spaces to alternative public amenity uses.	Direct action	Clean air, health
Transport Emissions	Explore opportunities to collaborate with the 'Cycle Right' programme within the decarbonising zone, and opportunities to expand this to forms of e-mobility.	Facilitation	Clean air, health

Strategic area	Opportunity	LA Role(s)	Co-benefits
Transport Emissions	Explore opportunities for SDCC fleet operating within the decarbonising zone to be prioritised for upgrade to electric vehicles.	Direct action	Clean air, health, energy security
Transport Emissions	Deliver Bawnogue district enhancement scheme, enhancing pedestrian and cycle opportunities.	Direct action	Clean air, health
Transport Emissions	Explore opportunities for secure bike storage (bike bunkers).	Direct action	Clean air, health
Transport Emissions	Explore potential for Council road/footpath projects within the decarbonising zone to trial lower embodied carbon materials	Direct action	Embodied carbon
Transport Emissions	Examine options for increasing permeability in the area, with active travel schemes and potential for pedestrian areas.	Direct action	Clean air, health
Transport Emissions	Deliver the 'Cycle South Dublin' safe cycle network elements within the DZ	Direct action	Clean air, health
Electricity Sector	Facilitating new electricity network infrastructure where required by electricity network operators.	Facilitation, Advocacy	Clean air, health, employment, energy security
Electricity Sector	Engage with demand response companies and key stakeholders within the decarbonising zone, to support the development of demand response and energy storage in residential, commercial and public sectors.	Direct Action, Facilitation, Advocacy	Clean air, employment, energy security
Engagement	Develop a local community and public engagement plan for the decarbonising zone.	Direct action	Inclusivity, public participation
Engagement	Engage with SEAI Sustainable Energy Community (SEC) programme and mentors to support development of SECs, engagement and project delivery within the decarbonising zone	Direct action	Clean air, energy poverty, health, employment, energy security, inclusivity
Engagement	Establish a 'transition team' for the DZ comprising representatives from the local community, business, transport, energy sector, and others to co-create an action plan.	Direct action	Inclusivity, public participation

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Strategic area	Opportunity	LA Role(s)	Co-benefits
Engagement	Engage with public sector bodies located in the decarbonising zone to understand their decarbonisation plans and find synergies and opportunities.	Direct action	Clean air, health, employment, energy security
Engagement	Create a regular drop-in 'energy clinic' where the public can receive advice on how they can take climate action. Explore possible links with Sustainable Energy Communities mentors.	Direct action	Inclusivity, public participation
Engagement	Create information supports or a 'toolkit' for local businesses on how they can reduce their emissions, encompassing existing programmes and support in Ireland and guidance on Scope 1, 2, and 3 emissions.	Direct action	Inclusivity, public participation
Engagement	Explore potential to use local authority buildings as community spaces for groups participating in decarbonising zone projects.	Direct action	Inclusivity, public participation
Engagement	Engage with local credit unions and banks to determine the opportunities available for low interest loans for residential sector climate action projects.	Facilitation	Clean air, energy poverty, health, employment, energy security
Engagement	Explore opportunities for collaboration with 'Green Schools' programme, and wider engagement with schools about the decarbonising zone projects.	Facilitation	Clean air, health, employment, energy security, inclusivity, public participation, water quality, biodiversity, ecosystem health, circular economy
Engagement	Explore opportunities for enhanced roll-out and engagement programme for 'Home Energy Savings Kits', including piloting the development of 'Home Energy Savings Kits' aimed at children, to roll out in schools for them to take home.	Direct action	Clean air, energy poverty, health, employment, inclusivity, public participation
Engagement	Explore opportunities to collaborate with a Sláintecare Officer in Clondalkin.	Direct action	Clean air, energy poverty, health, employment, energy security
Governance & System Support	Develop a governance framework and implementation plan for the decarbonising zone.	Direct action	Inclusivity, public participation

Strategic area	Opportunity	LA Role(s)	Co-benefits
Governance & System Support	Develop a DZ data gathering & monitoring project to explore additional and complementary ways to track emissions and communicate progress.	Direct action	Inclusivity
Governance & System Support	Set up 'Clondalkin decarbonising zone' project website.	Direct action	Inclusivity, public participation
Governance & System Support	Engage with data providers to explore access to transport analytics to inform data gathering and monitoring for the project. Engage with data providers to explore activity metrics for retail zones to evaluate the impact of transport measures.	Direct action	-
Governance & System Support	Explore opportunities for enhanced modal shift monitoring on key routes.	Direct action	-
Governance & System Support	Carry out transport and active travel survey within the decarbonising zone, building on the previous 'Sustainable Movement Studies' and working with the Clondalkin local area plan process and associated local transport plan.	Direct action	-
Governance & System Support	Explore smart gully monitoring to support flood resilience.	Direct action	Ecosystem health
Governance & System Support	Explore development of a tool to help public assess impact of different climate measures.	Direct action	Inclusivity, public participation
Governance & System Support	Explore opportunities to align the planned Clondalkin Local Area Plan and the DZ to ensure policy provision maximises decarbonisation opportunities and access to funding mechanisms.	Direct action	-
Biodiversity, Circular, Economy, & Nature Based Solutions	Explore opportunities for enhancing biodiversity in the decarbonising zone.	Direct action, Facilitation, Advocacy	Clean air, water quality, biodiversity, ecosystem health, circular economy
Biodiversity, Circular, Economy, & Nature Based Solutions	Explore opportunities for nature-based solutions in the decarbonising zone.	Direct action, Facilitation, Advocacy	Clean air, water quality, biodiversity, ecosystem health, circular economy
Biodiversity, Circular, Economy, & Nature Based Solutions	Explore opportunities for promoting circular economy in the decarbonising zone.	Direct action, Facilitation, Advocacy	Clean air, water quality, biodiversity, ecosystem health, circular economy

Strategic area	Opportunity	LA Role(s)	Co-benefits
Biodiversity, Circular, Economy, & Nature Based Solutions	Explore opportunities for enhanced planting initiatives in the public realm.	Direct action	Clean air, water quality, biodiversity, ecosystem health, circular economy
Biodiversity, Circular, Economy, & Nature Based Solutions	Explore opportunities for rain gardens, garden ponds, green and blue roofs on private lands.	Facilitation	Clean air, water quality, biodiversity, ecosystem health, circular economy
Biodiversity, Circular, Economy, & Nature Based Solutions	Advocate and support reduction in food waste - awareness of existing programmes and apps.	Advocacy	Circular economy
Biodiversity, Circular, Economy, & Nature Based Solutions	Explore water quality improvement opportunities or 'de-culverting' opportunities.	Direct action	Water quality, ecosystem health
Biodiversity, Circular, Economy, & Nature Based Solutions	Explore opportunities to pilot recycling bins in public spaces.	Direct action	Circular economy
Biodiversity, Circular, Economy, & Nature Based Solutions	Explore options to develop a 'library of things' (e.g., DIY tools and useful household items) to promote a sharing economy.	Direct action, Facilitation	Circular economy
Just Transition	Explore and develop just transition opportunities in the DZ such as skills training, and energy poverty reduction measures.	Direct action, Facilitation	Inclusivity, Public participation

NEXT STEPS

The next step for the Clondalkin Decarbonising Zone, is to co-create a decarbonising zone implementation plan, in consultation with the local community, and local stakeholders. This includes:

- Developing a local community and public engagement plan.

- Establishing a local stakeholder group made up of representatives from the local community, business, transport, energy sector, and others.

- Public engagement with the residents and community in Clondalkin, in alignment with the development of, and engagement for, the Clondalkin Local Area Plan.

- Co-creating a list of prioritised actions, expanding on the strategic interventions and register of opportunities outlined in this chapter.

- Developing a governance framework for the decarbonising zone.

- Supporting the delivery of the implementation plan to achieve the decarbonising zone vision for 2030.

INTEGRATED ENVIRONMENTAL CONSIDERATIONS

A Register of Opportunities has been prepared for the Decarbonising zone. These opportunities are broad, high-level and non-specific in nature and define potential strategic interventions to be investigated to achieve GHG emissions reductions within the Decarbonising zone. Following a period of stakeholder engagement these opportunities will be developed into a set of specific, implementable actions under a plan for the Decarbonising zone which will be subject to its own SEA and AA processes.

The opportunities progressed shall accord with the following integrated environmental protection and enhancement considerations:

- The opportunities progressed, and any associated activities and development, such as energy, heating or active travel related development, shall have due regard to the need to protect sensitive aspects of the receiving environment, including local human receptors; European sites and biodiversity; heritage features, protected structures and the context in which such features sit; and the receiving water, soils and local air quality environment.

- Any opportunities progressed that result in the development of renewable energy development, such as wind turbine development or solar panel development, shall specifically have due regard to the need to protect sensitive aspects of the environment from the typical effects of such development, including avifauna effects or landscape and visual related effects, including glint and glare.

- South Dublin County Council will advocate and exert influence to ensure that opportunities progressed that lead to the development of additional electricity network infrastructure, including linear cable infrastructure development, by electricity network operators, does not contravene relevant planning and environmental protection criteria or cause significant negative environmental effects.

- Any opportunities progressed that support the upgrade of public lighting, shall have due regard to the need to ensure the lumen levels and spectral range of such lighting are maintained or reduced/controlled to avoid effects on biodiversity.

7. IMPLEMENTATION AND REPORTING

PLANNING FOR IMPLEMENTATION

The Climate Action Plan (CAP) will be implemented by all departments of South Dublin County Council (SDCC), with ownership of the Plan held within the Environment, Water, and Climate Change (EWCC) Directorate.

Within the EWCC Directorate, SDCC has an established Climate Action Team which includes a Climate Action Coordinator, a Climate Action Officer, and a Community Climate Action Officer, with support from a Climate Awareness Officer. The role of this team is to mainstream climate action into the activities of the Council, deliver specific actions, support and monitor the implementation of the actions across SDCC, and coordinate the reporting and evaluation of the Plan, following its approval by the Elected Members.

The Climate Action Team is supported by six Action Teams established to manage and deliver the Council's ongoing climate actions. These teams mirror the Action Areas in the Plan and comprise of representatives from the relevant departments and 'Action Owners'. Additionally, a new seventh Action Team will be established to facilitate the implementation of the Clondalkin Decarbonising Zone Plan.

SDCC's Action Teams:

1. **Energy and Buildings**
2. **Transport**
3. **Flood Resilience**
4. **Nature-Based Solutions**
5. **Circular Economy and Resource Management**
6. **Community Engagement**
7. **Clondalkin Decarbonising Zone (to be established)**

Climate change is a transboundary challenge; it does not stop at political and geographical borders. SDCC will continue to work collaboratively and in partnership with a range of key stakeholders to support the delivery of this plan, including neighbouring local authorities, the Dublin Metropolitan Climate Action Regional Office (CARO), Codema (Dublin's Energy Agency), regional partners, and local organisations. In particular, a Dublin regional approach has been agreed by the four Dublin Local Authorities, whereby they can collaborate closely in the implementation of their respective Climate Action Plans. These partnerships can provide opportunities for collaboration on projects, shared learnings, technical support and leveraging of funding opportunities during the Plan's implementation.

SDCC, along with the other Dublin Local Authorities, will continue to actively pursue projects eligible for funding from the national Climate Action Fund, European funds and other sources. Codema and CARO will continue to research potential funding opportunities and partnerships with third-level institutions. Private sector partnerships are also important to realise low carbon solutions for the sector and this will be encouraged and facilitated where possible.

During the development of this Climate Action Plan, work has begun on preparing implementation strategies for the actions, including establishing key timelines, dependencies and Action Owners. Following approval of the Plan, an Implementation Strategy will be further developed to detail the delivery plan for each action.

TRACKING PROGRESS THROUGH KEY PERFORMANCE INDICATORS (KPIs)

Strengthened climate action policy at national level inspired a determined response and commitment by local government, as a sector. This commitment is set out in the County and City Management Association (CCMA) published strategy on behalf of local government entitled 'Delivering Effective Climate Action 2030' (DECA 2021).

A key consideration for the local government sector concerning this strengthened role on climate action is accountability, and in particular the ability to track, measure and report on progress in delivering effective climate action at both local authority and sectoral levels. In this regard, KPIs will continue to play a significant role.

Performance by SDCC on the delivery of emissions reduction and energy efficiency improvements relating to the Council's infrastructure and assets will continue to be tracked through the Monitoring and Reporting (M&R) system managed by the Sustainable Authority of Ireland (SEAI). For actions outside of the M&R system, such as business travel data, the Council will continue to report annually to the SEAI, as required.

The CAROs, along with the Local Government Management Agency (LGMA), collect data on an annual basis relating to a range of themes including:

- Climate action resources
- Climate action training for local authority staff and elected members
- Actions delivered
- Enterprise support
- Energy efficiency
- Emissions reduction
- Active travel measures
- Severe weather response

KPIs will continue to be added as necessary by the sector and SDCC will contribute relevant information as required, to assist in highlighting the progress of the local government sector on climate action.

Within the Council, the Climate Action Team reports monthly on two KPIs, which are communicated in the Chief Executive's Report.

REPORTING REQUIREMENTS AND ARRANGEMENTS

Climate action is mandated for local authorities as part of broader concerted efforts and response measures nationally to meet the 2030 targets and to strive towards a climate resilient and net zero society by 2050. Strengthened reporting and monitoring frameworks are now part of the mechanism to account for how local authorities are achieving and supporting local level climate action in the context of delivering on the national climate objective. To communicate progress on the delivery of actions in this Climate Action Plan, the Council will engage with the following reporting avenues.
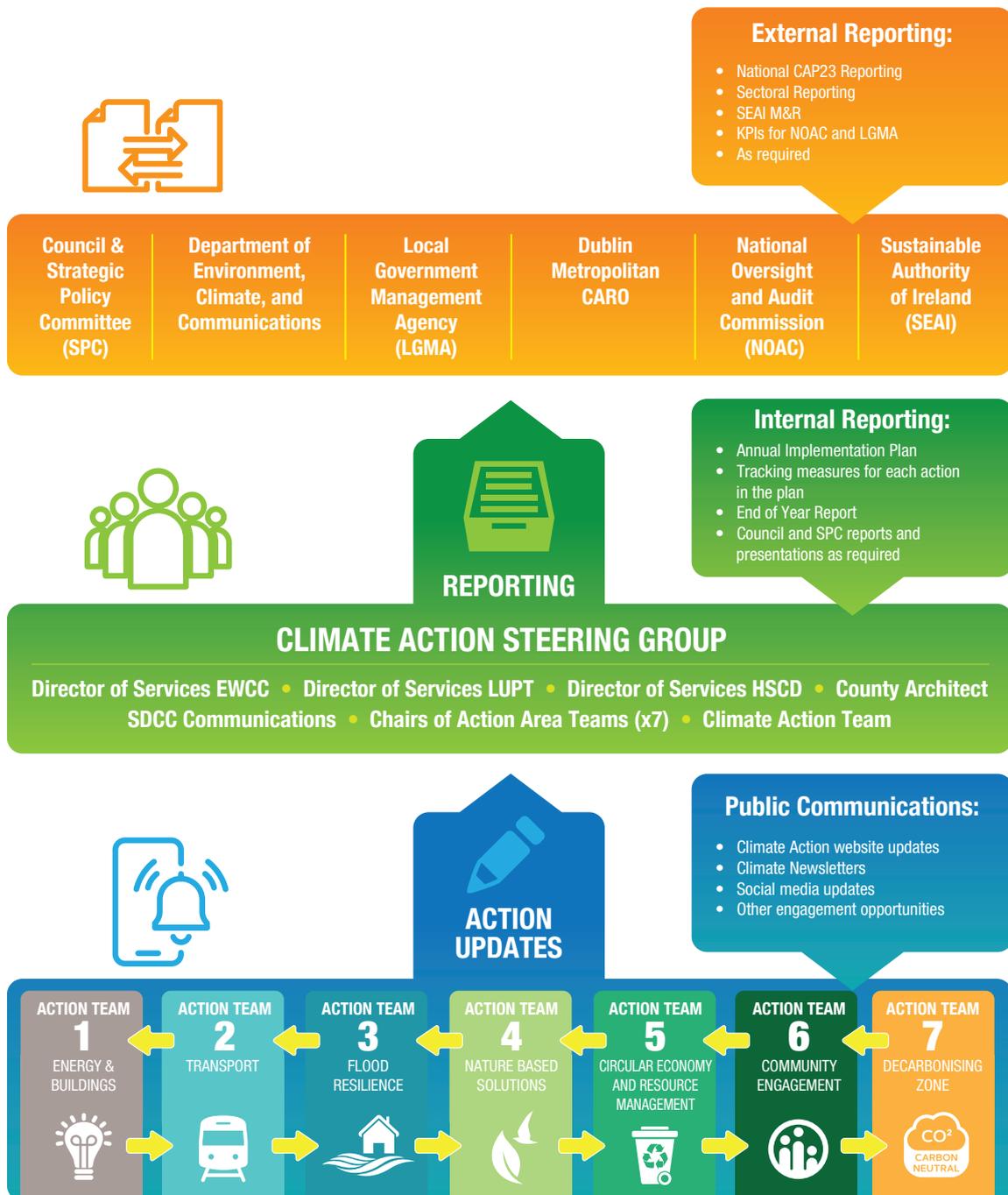
External Reporting:
- National CAP23 Reporting
- Sectoral Reporting
- SEAI M&R
- KPIs for NOAC and LGMA
- As required

Council & Strategic Policy Committee (SPC)	Department of Environment, Climate, and Communications	Local Government Management Agency (LGMA)	Dublin Metropolitan CARO	National Oversight and Audit Commission (NOAC)	Sustainable Authority of Ireland (SEAI)

REPORTING

Internal Reporting:
- Annual Implementation Plan
- Tracking measures for each action in the plan
- End of Year Report
- Council and SPC reports and presentations as required

CLIMATE ACTION STEERING GROUP

Director of Services EWCC • Director of Services LUPT • Director of Services HSCD • County Architect
SDCC Communications • Chairs of Action Area Teams (x7) • Climate Action Team

ACTION UPDATES

Public Communications:
- Climate Action website updates
- Climate Newsletters
- Social media updates
- Other engagement opportunities

ACTION TEAM 1 ENERGY & BUILDINGS	ACTION TEAM 2 TRANSPORT	ACTION TEAM 3 FLOOD RESILIENCE	ACTION TEAM 4 NATURE BASED SOLUTIONS	ACTION TEAM 5 CIRCULAR ECONOMY AND RESOURCE MANAGEMENT	ACTION TEAM 6 COMMUNITY ENGAGEMENT	ACTION TEAM 7 DECARBONISING ZONE

Figure 7.1: South Dublin County Council's Reporting Structure for Climate Action

Internal Reporting

The Council will update and report progress on the implementation of the actions across all Action Areas of the Climate Action Plan. This will be through its relevant governance and reporting structures and communication channels, as shown in the figure above.

The Climate Action Steering Group has been in operation in SDCC since 2019. The role of the steering group is multifunctional, including but not limited to, ensuring alignment with legislation, mainstreaming climate action across SDCC, and ensuring the climate reporting and evaluation requirements of the local authority are met. The Chairs of each of the seven action teams (including the forthcoming Clondalkin Decarbonising Zone sub-group) will report progress on actions, against the established tracking measures, to the Climate Action Steering Group.

We will report to the Environment, Public Realm and Climate Action Strategic Policy Committee (SPC) and Council Meetings at least biannually, or as required, and an end of year report will be made available annually.

Progress in implementing climate actions under this plan will also be communicated via our Climate Action Website (www.southdublinclimate.ie).

National Climate Action Plan

SDCC will, in accordance with part 3(w) of the Local Authority Climate Action Charter, report to the Department of the Environment, Climate, and Communications on progress on climate action at local level as part of the delivery of the national climate objective. Progress on all actions will be reported via a reporting tool developed by CARO.

National Oversight and Audit Commission (NOAC)

SDCC report to the National Oversight and Audit Commission (NOAC), who as part of their statutory functions scrutinise the performance of local government bodies against relevant indicators. The Council reports on a number of indicators in relation to the area of climate action and the results are included in the Annual Performance Indicator Report.

Sectoral Performance

SDCC will report annually on their performance on climate action by way of KPIs to inform the performance of the local government sector on climate action, as part of the local government 'Delivering Effective Climate Action (DECA) 2030 Strategy.

Monitoring and Reporting System (M&R)

SDCC will continue to report on their emissions target and energy performance annually to the Sustainable Authority of Ireland (SEAI) through the Monitoring and Reporting (M&R) system.

Covenant of Mayors

The Council will liaise where possible with the Covenant of Mayors for Climate and Energy and other established networks of European cities and associations, so that international best practice can be incorporated into relevant actions.

Sustainable Development Goals

The actions and objectives set out in this Climate Action Plan also contribute to the progression of Ireland's commitment to achieving the 2030 Agenda for Sustainable Development which is a "plan of action for people, planet and prosperity" and provides an internationally agreed framework made up of 17 Sustainable Development Goals (SDGs) to balance the economic, social and environmental aspects of sustainable development.

Ireland's Second National Implementation Plan for the Sustainable Development Goals 2022-2024, intends to build on the role of local government in Ireland and incorporates specific actions to do so which include:

i. Showcasing, sharing and building on existing initiatives

ii. Capacity building and awareness raising

iii. Embedding the SDGs in governance and reporting frameworks

iv. Incorporating the SDGs within local planning frameworks

v. Community engagement

Furthermore, local authorities are recognised as one of Agenda 2030's nine "Major Groups", which play a crucial role in sustainable development and Agenda 2030 also highlights the particular role of local authorities and communities in sustainable urban development.

In fulfilment of SDG target 17.14, to achieve greater Policy Coherence for Sustainable Development, each action in this Climate Action Plan has been aligned with SDGs. This alignment is demonstrated in more detail in the Appendices to this plan.

ENVIRONMENTAL GOVERNANCE

The intention of the draft Climate Action Plan is to promote, develop and implement climate actions through process improvements, community engagement, progressive development and integrated learning processes; which will be refined throughout the lifetime of the plan. It is important to note that it is an integral part of the draft Climate Action Plan to facilitate co-benefits for climate and other environmental factors.

In order to be realised, projects included in or supported by the draft Climate Action Plan will have to comply, as relevant, with various legislation, policies, plans and programmes (including requirements for lower-tier Appropriate Assessment, Environmental Impact Assessment and other licencing requirements as appropriate) that form the statutory decision-making and consent-granting framework, of which the Plan is not part and does not contribute towards.

These considerations include the Water Framework Directive, a European Union framework that sets standards for water protection and management. River basin management plans are instrumental in implementing the Water Framework Directive's goals, as they provide detailed strategies for achieving good water status and preventing pollution across an entire river basin. These plans help coordinate efforts among various stakeholders, such as governments, communities, and industries, to achieve integrated water management and environmental protection, thereby ensuring compliance with the Directive's objectives.

An integrated approach identifying sustainable land use practices, improved water management, and ecosystem preservation, the plan seeks to mitigate climate change's impact on water resources, safeguarding both the environment and public health. This integrated approach demonstrates Ireland's commitment to achieving climate goals while concurrently promoting a healthier and more resilient natural environment.

As well as the climate focused measures detailed throughout the plan with environmental co-benefits and environmental notes to provide the context within which the action will be progressed, there are several environmental governance principles which will steer future works (see below).

EG1	Promote climate action projects that support and maximise environmental co benefits, such as biodiversity protection and enhancement; improved air, water or soil quality; or enhanced recreation, amenity and cultural heritage value, to ensure win-win benefits are gained.
EG2	Support or facilitate climate action related projects and initiatives which seek to make improvements in soil structure, management and health by increasing soil organic carbon which will create the environmental co- benefits of improving flood resilience by enhancing water holding capacity of soils and increasing the level of GHG sequestration associated with land use functions.
EG3	Ensure all development underpinned or supported by climate action is planned and implemented in a manner that appropriately considers the potential for environmental co- benefits, potential environmental impacts and environmental protection requirements. No climate action related development project that is likely to have a significant negative effects on the receiving environment shall be supported.
EG4	Flood and coastal defense projects, or related maintenance works, shall be carried out in a manner that promotes climate action biodiversity related co-benefits, and shall have due regard for the protection and enhancement of rare, protected or important habitats and species.
EG5	Ensure climate action related projects are carried out in a manner that promotes climate action cultural heritage co-benefits, and do not result in unauthorized physical damage to cultural, archaeological or architectural features, or unauthorized or inappropriate alteration of the context of sensitive cultural heritage features.
EG6	Ensure climate action related projects are carried out in a manner that promotes climate action water quality co-benefits and aligns with the provisions of the Water Framework Directive and relevant River Basin Management Plan.

Table 7.1: Environmental governance principles to be integrated into actions/activities which result due to the implementation of the draft Climate Action Plan

To stay up to date with climate action in South Dublin, check out South Dublin County Council's dedicated Climate Action Website at **www.southdublinclimate.ie**

IMPLEMENTATION AND REPORTING

APPENDICES

APPENDIX I: SUSTAINABLE DEVELOPMENT GOALS

This section sets out, in the following tables, how each of the actions in this plan align with the UN Sustainable Development Goals

ENERGY & BUILDINGS

Ref.	Action	Tracking Measure	Sustainble Development Goals
Organisational Energy Management and Innovation			
E1	Embed an organisational energy/building management system in SDCC, ensuring compliance with relevant standards, obligations, and reporting requirements, with the aim to achieve ISO50,001.	Number of Energy Committee Meetings held	SDG 7: Affordable and Clean Energy SDG 9: Industry, Innovation and Infrastructure SDG 11: Sustainable Cities and Communities SDG 12: Responsible Consumption and Production SDG 13: Climate Action
E2	As part of SDCCs Energy Management, work with the Significant Energy Users and each Department, to make SDCC as energy efficient as possible.	Energy consumption for each Significant Energy User	SDG 7: Affordable and Clean Energy SDG 9: Industry, Innovation and Infrastructure SDG 11: Sustainable Cities and Communities SDG 12: Responsible Consumption and Production SDG 13: Climate Action SDG 17: Partnership for Goals
E3	Complete the Public Lighting SOX Upgrade Programme, for the replacement of all SOX (low pressure sodium lamps) with energy efficient LEDs.	Number of SOX lights upgraded; % of LED lights in total stock	SDG 7: Affordable and Clean Energy SDG 9: Industry, Innovation and Infrastructure SDG11: Sustainable Cities and Communities SDG 12: Responsible Consumption and Production SDG 13: Climate Action
E4	Complete the Public Lighting SON Upgrade Programme, for the replacement of all SON (high pressure sodium lamps) with energy efficient LEDs.	Number of SON lights upgraded; % of LED lights in total stock	SDG 11: Sustainable Cities and Communities
E5	Develop a method, process, or tool, for SDCC to assess the whole Lifecycle Analysis (LCA) of buildings and infrastructure to understand the overall impact during its life cycle.	Rollout of tool; Number of projects utilising tool	SDG 12: Responsible Consumption and Production
E6	Develop, or procure, a tool to be used for high level assessments of embodied carbon in SDCC projects at design stage.	Rollout of Tool; Number of projects utilising tool	SDG 7: Affordable and Clean Energy SDG 9: Industry, Innovation and Infrastructure SDG11: Sustainable Cities and Communities SDG 12: Responsible Consumption and Production SDG 13: Climate Action
E7	Decarbonise, where feasible, plant and hand held tools.	% or Number of plant decarbonised; Tonnes of CO_2 emissions reduced	SDG 11: Sustainable Cities and Communities SDG 13: Climate Action
Improve Energy Efficiency and reduce Carbon Emissions in SDCC Buildings			
E8	Progress Energy Performance Contracts (EPC) to deliver energy efficiency targets for SDCC owned buildings with significant energy usage, including the Leisure Centres, County Hall and Library, and Clondalkin Civic Offices.	EPC awarded; Measurement and verification of savings	SDG 7: Affordable and Clean Energy SDG 9: Industry, Innovation and Infrastructure SDG 11: Sustainable Cities and Communities SDG 12: Responsible Consumption and Production SDG 13: Climate Action SDG 17: Partnership for Goals
E9	Progress energy efficiency works, including retrofits, in Council owned and operated buildings, such as Libraries and Community Centres, that fall outside of a potential EPC contract.	Number of retrofit / improvement projects	SDG 7: Affordable and Clean Energy SDG 9: Industry, Innovation and Infrastructure SDG 11: Sustainable Cities and Communities SDG 12: Responsible Consumption and Production SDG 13: Climate Action
E10	Retrofits of the Council's housing stock, prioritising energy efficiency upgrades in areas that have been identified in the Dublin Region Energy Masterplan as being energy poor.	% of overall housing stock upgraded; Number of housing units upgraded to meet a mimum B2 BER Rating; Number of heat pumps installed	SDG 7: Affordable and Clean Energy SDG 9: Industry, Innovation and Infrastructure SDG 11: Sustainable Cities and Communities SDG 12: Responsible Consumption and Production SDG 13: Climate Action SDG 17: Partnership for Goals
E11	Develop tenant energy awareness toolkit to provide climate / energy awareness and training for the operation of the new energy systems installed.	Toolkit developed; Number of tenants provided with energy saving tips	SDG 7: Affordable and Clean Energy SDG 9: Industry, Innovation and Infrastructure SDG 11: Sustainable Cities and Communities SDG 12: Responsible Consumption and Production SDG 13: Climate Action

ENERGY & BUILDINGS

Ref.	Action	Tracking Measure	Sustainble Development Goals
E12	Develop the sensitive retrofit of historic / protected structures across South Dublin with the aim of improving energy efficiency and building climate resilience.	Number of sites retrofitted as part of any upgrades to Council owned Protected Structures	SDG 7: Affordable and Clean Energy SDG 9: Industry, Innovation and Infrastructure SDG11: Sustainable Cities and Communities SDG 12: Responsible Consumption and Production SDG 13: Climate Action
E13	Identify and progress opportunities to improve energy efficiencies in Tallaght Stadium and SDCC sports grounds with external floodlights.	Reduction in energy consumption	SDG 7: Affordable and Clean Energy SDG 9: Industry, Innovation and Infrastructure SDG 11: Sustainable Cities and Communities SDG 12: Responsible Consumption and Production SDG 13: Climate Action
Alternative Energy Sources; Increase SDCC's renewable energy generation capacity			
E14	Install Solar PV on suitable SDCC owned buildings, focusing on Community Centres and Libraries, and examine the potential for installation on other assets.	Number of buildings with solar pv installed; kWh of electricty generated	SDG 7: Affordable and Clean Energy SDG 9: Industry, Innovation and Infrastructure SDG 11: Sustainable Cities and Communities SDG 12: Responsible Consumption and Production SDG 13: Climate Action SDG 17: Partnership for Goals
E15	Investigate opportunities to install solar panels at Depots (roofs / solar car port etc), with the aim of supplying renewable energy to offset the expected increase in consumption due to the planned fleet decarbonisation and associated EV charging.	Number of buildings with Solar PV installed; kWh of electricity generated	SDG 7: Affordable and Clean Energy SDG 9: Industry, Innovation and Infrastructure SDG 11: Sustainable Cities and Communities SDG 12: Responsible Consumption and Production SDG 13: Climate Action SDG 17: Partnership for Goals
E16	Maintain the operation and monitoring of the Tallaght District Heating Scheme, and progress the further expansion of the Tallaght District Heating Scheme.	Tonnes CO_2 saved; Thermal energy exported from District Heating Scheme	SDG 7: Affordable and Clean Energy SDG 9: Industry, Innovation and Infrastructure SDG 11: Sustainable Cities and Communities SDG 12: Responsible Consumption and Production SDG 13: Climate Action SDG 17: Partnership for Goals
E17	Develop proposals for futher district heating schemes, including Clonburris and Grange Castle.	Proposals developed; Implementation plan developed	SDG 7: Affordable and Clean Energy SDG 9: Industry, Innovation and Infrastructure SDG 11: Sustainable Cities and Communities SDG 12: Responsible Consumption and Production SDG 13: Climate Action SDG 17: Partnership for Goals
E18	Deliver Arthurstown Landfill Solar PV Project to generate renewable energy for consumption on site.	Delivery of Project; Reduction in carbon emissions % of total energy consumed that was renewable energy	SDG 7: Affordable and Clean Energy SDG 9: Industry, Innovation and Infrastructure SDG 11: Sustainable Cities and Communities SDG 12: Responsible Consumption and Production SDG 13: Climate Action SDG 17: Partnership for Goals
E19	Investigate the feasibility of developing a commerical scale Solar PV plant at Arthurstown Landfill site and look to progress any feasible recommendations.	Delivery of Study; Recommendations progressed	SDG 7: Affordable and Clean Energy SDG 9: Industry, Innovation and Infrastructure SDG 11: Sustainable Cities and Communities SDG 12: Responsible Consumption and Production SDG 13: Climate Action
E20	Identify sites or opportunties for trialling renewable energy projects.	Initial feasibility Study delivered and follow-up delivered every 2 years	SDG 7: Affordable and Clean Energy SDG 9: Industry, Innovation and Infrastructure SDG 11: Sustainable Cities and Communities SDG 13: Climate Action

ENERGY & BUILDINGS

Ref.	Action	Tracking Measure	Sustainble Development Goals
Mainstreaming climate proofed solutions across SDCC through Governance			
GOV1	Support the Elected Members and Strategic Policy Committees (SPCs) in their leadership role for climate actions. Incorporate notes from Transport	Number of climate related briefings/ events provided	SDG 13: Climate Action SDG 17: Partnership for Goals
GOV2	Ensure Green Public Procurement (GPP) implementation in all SDCC tenders as part of the scored quality assessment, in order to source goods, services and works with a reduced climate and envionmental impact. Provide relevant GPP training for staff.	Number of climate related briefings / events provided	SDG 9: Industry, Innovation and Infrastructure SDG 11: Sustainable Cities and Communities SDG 12: Responsible Consumption and Production SDG 13: Climate Action SDG 17: Partnership for Goals
GOV3	Ensure that all new SDCC Projects are assessed for the feasibility of incorporating climate actions and measures, with a focus on energy, greenhouse gas emissions, nature based SuDS, enhancing and retaining Green Infrastructure, biodiversity, sustainable transport and modal shift, EV charging, and environmental protection and co-benefits.	Number of projects proofed for SuDS / climate actions; Number of projects proofed for GI options; Number of projects proofed for active travel	SDG 7: Affordable and Clean Energy SDG 9: Industry, Innovation and Infrastructure SDG 11: Sustainable Cities and Communities SDG 13: Climate Action SDG 15: Life on Land SDG 17: Partnership for Goals
GOV4	Ensure climate-proofing of all SDCC policies and strategies, including updates through liasion with the Climate Action Team	Number of policies / strategies climate proofed	SDG 13: Climate Action SDG 17: Partnership for Goals

TRANSPORT

Ref.	Action	Tracking Measure	Sustainble Development Goals
Public Transport in South Dublin			
T1	Facilitate, support and guide national agencies in delivering major improvements to the public transport network, in particular Bus Connects, DART+, Luas capacity and new and enhanced rail stations.	Number of schemes engaged on	SDG 3: Good Health and Well-Being SDG 11: Sustainable Cities and Communities SDG 13: Climate Action SDG 17: Partnership for Goals
T2	Work with the NTA and TII to generate information on modal share changes with a focus on modal shift to public transport and active travel, and effectively communicate this information to the public.	Percentage modal share of Public Transport: Active Travel: Motorised Journeys generated in our County	SDG 3: Good Health and Well-Being SDG 11: Sustainable Cities and Communities SDG 13: Climate Action
T3	To facilitate the provision of Park and Ride facilities in appropriate locations at transport nodes and along strategic transport corridors in accordance with the NTA Strategy, and encourage the inclusion of EV charge points and bike parking.	Number of schemes engaged on	SDG 7: Affordable and Clean Energy SDG 9: Industry, Innovation and Infrastructure SDG 11: Sustainable Cities and Communities SDG 13: Climate Action
Promoting Active Travel in South Dublin			
T4	Deliver a safe active travel network for people of all ages and abilities through the implementation of the Cycle South Dublin programme, including on-road, off-road, and greenway routes.	Number of linear meters added	SDG 3: Good Health and Well-Being SDG 11: Sustainable Cities and Communities SDG 13: Climate Action
T5	Continue to promote active travel, for a wide range of ages, abilities and journey types, utilising SDCC's active travel website, social media and events such as an active travel promotional ePlatform.	Number of regular updates of our active travel website through SDCC social media	SDG 3: Good Health and Well-Being SDG 11: Sustainable Cities and Communities SDG 13: Climate Action
T6	Maintain a high standard of active travel routes by ensuring regular cleaning and annual maintenance to encourage ongoing use.	Number of meters cleaned; Number of meters maintained	SDG 11: Sustainable Cities and Communities SDG 13: Climate Action
T7	Working with the four Dublin Authorities, identify opportunities for the implementation of public bike sharing schemes, and powered personal transportation, in South Dublin supporting private operators.	Number of public bikes installed	SDG 9: Industry, Innovation and Infrastructure SDG 11: Sustainable Cities and Communities SDG 13: Climate Action SDG 17: Partnership for the Goals
T8	Deliver a network of secure, public bicycle and powered personal transportation parking, to accommodate a variety of bike types across the County, including at schools, parks, playgrounds, towns, and villages.	Number of new parking stands installed	SDG 3: Good Health and Well-Being SDG 9: Industry, Innovation and Infrastructure SDG 10: Reduced Inequalities SDG 11: Sustainable Cities and Communities SDG 13: Climate Action
T8	Deliver a network of secure, public bicycle and powered personal transportation parking, to accommodate a variety of bike types across the County, including at schools, parks, playgrounds, towns, and villages.	Number of new parking stands installed	SDG 3: Good Health and Well-Being SDG 9: Industry, Innovation and Infrastructure SDG 10: Reduced Inequalities SDG 11: Sustainable Cities and Communities SDG 13: Climate Action SDG 17: Partnership for Goals
T9	Continue the development of pedestrian improvements, aligning with any Pedestrian Enhancement Plans developed for the Dublin Metropolitan area.	Number of improvements implemented	SDG 3: Good Health and Well-Being SDG 9: Industry, Innovation and Infrastructure SDG 10: Reduced Inequalities SDG 11: Sustainable Cities and Communities SDG 13: Climate Action SDG 17: Partnership for Goals
Embedding Modal Shift in our Communities, and Safety & Accessibility			
T10	Identify roads and streets suitable for road space reallocation and progress appropriate schemes.	Number of road space reallocations identified; Number of road space reallocations completed	SDG 11: Sustainable Cities and Communities SDG 13: Climate Action

TRANSPORT

Ref.	Action	Tracking Measure	Sustainble Development Goals
T11	Implement the Safe Routes To School Programme and implement the School Streets Initiative.	Number of Safe Routes to School / school zones; Number of schools participating in School Streets Initiative	SDG 11: Sustainable Cities and Communities SDG 13: Climate Action
T12	Deliver the primary school cycle training programme.	Number of schools participating; Number of children participating	SDG 3: Good Health and Well-Being SDG 11: Sustainable Cities and Communities SDG 13: Climate Action
T13	Ensure active travel schemes and initiatives make walking, and cycling more accessbile for all users, including those with reduced mobility, disabilities and the elderly, to further opportunities for increasing a sustainable modal shifit. For example Cycling Without Age.	Number of schemes risk assessed; Number of initiatives; Number of Cycling Without Age bookings / Number of passengers carried / Number of km travelled	SDG 3: Good Health and Well-Being SDG 10: Reduced Inequalities SDG 11: Sustainable Cities and Communities SDG 13: Climate Action
T14	Engage with car sharing scheme operators to increase the number of shared vehicles available in the County, with a focus on the provision of electric vehicles.	Number of locations	SDG 7: Affordable and Clean Energy SDG 9: Industry, Innovation and Infrastructure SDG 11: Sustainable Cities and Communities SDG 13: Climate Action SDG 17: Partnership for the Goals
T15	Carry out trials of traffic movements including street closures, one way systems, diversions and low traffic neighbourhoods to reduce traffic movement in certain areas.	Number of trials proposed; Number of trials progressed	SDG 11: Sustainable Cities and Communities SDG 13: Climate Action
SDCC Fleet and Staff Mobility to, from, and during work			
T16	Implement the Council's Fleet Transition Strategy to identify efficiencies and rationalise the need for SDCC vehicles, and to decarbonise SDCC vehicles - guided by the Avoid-Shift-Improve approach.	Number of internal combustion engine (ICE) vehicles replaced by electric vehicles with the associated CO_2e reduction	SDG 7: Affordable and Clean Energy SDG 9: Industry, Innovation and Infrastructure SDG 11: Sustainable Cities and Communities SDG 13: Climate Action
T17	Investigate the potential for alternative fuels for use in larger vehicles, before year 5 of the Fleet Transition Strategy, having appropriate regard to the lifecycle impacts and sustainability of alternative fuel options.	Report on options	SDG 7: Affordable and Clean Energy SDG 9: Industry, Innovation and Infrastructure SDG 11: Sustainable Cities and Communities SDG 13: Climate Action
T18	Deliver an ongoing driver education programme to staff to promote efficient driving behaviours.	% of relevant staff that have completed the training	SDG 11: Sustainable Cities and Communities
T19	Aim to reduce kilometres travelled by private ICE vehicles within work hours and incentivise modes such as cycling, electric vehicles.	Number of km reduced	SDG 11: Sustainable Cities and Communities SDG 13: Climate Action
T20	Establish an SDCC Mobility Hub for staff with decarbonised vehicle options to reduce the use of ICE vehicles.	Mobility hub established	SDG 7: Affordable and Clean Energy SDG 9: Industry, Innovation and Infrastructure SDG 11: Sustainable Cities and Communities SDG 12: Responsible Consumption and Production SDG 13: Climate Action
T21	Assess staff commuting patterns and identify opportunities to promote sustainable and active travel to, and from, work.	Staff survey undertaken and register of opportunities developed	SDG 3: Good Health and Well-Being SDG 9: Industry, Innovation and Infrastructure SDG 11: Sustainable Cities and Communities SDG 12: Responsible Consumption and Production SDG 13: Climate Action

TRANSPORT

Ref.	Action	Tracking Measure	Sustainble Development Goals
Electric Vehicle (EV) Charging			
T22	Implement the Dublin Local Authority Electric Vehicle Charging Strategy, (aligning with the National EV Charging Infrastructure Strategy 2022-2025).	Number of public charge points installed	SDG 7: Affordable and Clean Energy SDG 9: Industry, Innovation and Infrastructure SDG 11: Sustainable Cities and Communities SDG 13: Climate Action SDG 17: Partnership for Goals
T23	For privately owned EV charge points, create an SDCC Policy & Standards Guidance for the installation of electric vehicle charge points in the public realm.	Guidance produced; Number of applications assessed	SDG 7: Affordable and Clean Energy SDG 9: Industry, Innovation and Infrastructure SDG 11: Sustainable Cities and Communities SDG 13: Climate Action
Roads Construction, Maintenance, & Infrastructure			
T24	In road construction projects, minimise the use of virgin materials and promote the use of reclaimed asphalt pavement (RAP) or low carbon alterneratives.	Tonnes of virgin material replaced; % of material replaced	SDG 11: Sustainable Cities and Communities SDG 12: Responsible Consumption and Production SDG 13: Climate Action
T25	Review Roads Maintenance Process and materials for potential carbon reduction impact.	Annual update	SDG 11: Sustainable Cities and Communities SDG 12: Responsible Consumption and Production SDG 13: Climate Action
T26	Maximise use of renewable energy for road infrastructure including lights, signs and street furniture.	Number of units provided	SDG 9: Industry, Innovation and Infrastructure SDG 11: Sustainable Cities and Communities SDG 12: Responsible Consumption and Production SDG 13: Climate Action
T27	Promote the use of alternative systems for the treatment of roads during cold weather.	Tonnes of carbon	SDG 9: Industry, Innovation and Infrastructure SDG 11: Sustainable Cities and Communities SDG 12: Responsible Consumption and Production SDG 13: Climate Action
T28	Introduce process efficiencies/flexibility in the treatment of roads during cold weather to reduce number of call outs required.	Reduction in km travelled	SDG 9: Industry, Innovation and Infrastructure SDG 11: Sustainable Cities and Communities SDG 12: Responsible Consumption and Production SDG 13: Climate Action
T29	When surveying existing road infrastructure, include for identification of climate vulnerabilities, such as flooding and urban heat island effect.	Number of issues identified	SDG 11: Sustainable Cities and Communities SDG 13: Climate Action

FLOOD RESILIENCE

Ref.	Action	Tracking Measure	Sustainble Development Goals
Adaptation to increased Flood Events (Flood Defence, Monitoring, Flood Response)			
F1	Review and update Major Emergency Managment Response plans, SDCC policies or relevant Standard Operating Procedures (SOPs), with national Legislation and regulation on Climate Change adaptation and flood management, as required / annually.	Plans up to date	SDG 9: Industry, Innovation and Infrastructure SDG 11: Sustainable Cities and Communities SDG 13: Climate Action
F2	Ensure recording of flood events (fluvial and pluvial) and major climate events, utilising a GIS based system, to consistently capture locations, impacts, response resources, costs etc., to facilitate the development of climate adaptation measures.	Full role out of WIRE APP to all SDCC Engineers, Inspectors and other staff members interested; Number of users; Number of Reports	SDG 9: Industry, Innovation and Infrastructure SDG 11: Sustainable Cities and Communities SDG 13: Climate Action SDG 15: Life on Land
F3	Ensure annual update of the specific risks to service provision in each SDCC Department that may be impacted by Climate Change, building on the Climate Change Risk Assessment developed for the Climate Action Plan.	Annual risk review	SDG 11: Sustainable Cities and Communities SDG 13: Climate Action
F4	Engage regularly with neighbouring Local Authorities and other relevant organisations, on regional flood management issues, and support the ongoing implementation of flood forecasting systems.	Number of Relevant Meetings	SDG 9: Industry, Innovation and Infrastructure SDG 11: Sustainable Cities and Communities SDG 13: Climate Action SDG 17: Partnership for Goals
F5	Progress Flood Alleviation Schemes (FAS) in conjunction with the OPW - including the River Poddle FAS, the River Camac FAS and the Whitechurch Stream FAS.	Number of properties protected; Programme progress / completion	SDG 11: Sustainable Cities and Communities SDG 13: Climate Action SDG 15: Life on Land SDG 17: Partnership for Goals
F6	Identify and progress minor works schemes to resolve recurring flood issues, where possible, ensuring the schemes are designed and implemented to include Sustainable Drainage Systems (SUDS) / nature-based solutions / protection of biodiversity and avoidance of habitat fragmentation.	Number of schemes progressed	SDG 11: Sustainable Cities and Communities SDG 12: Responsible Consumption and Production SDG 13: Climate Action SDG 15: Life on Land
F7	Develop, protect and conserve riparian corridors, in line with County Development Plan and Greater Dublin Strategic Drainage Study (GDSDS), increasing riparian corridor connectivity where possible, and similarly for floodplains around rivers and watercourses subject to flooding.	Number of planning applications permitted in flood zone A and flood zone B; Number of planning applications permitted in the riparian corridors; Linear meters of riparian corridors enhanced with native planting; Number of developments allowed to encroach within the 15m buffer zone given by GDSDS	SDG 11: Sustainable Cities and Communities SDG 13: Climate Action SDG 15: Life on Land SDG 17: Partnership for Goals
Implementation of Sustainable Drainage Systems (SuDS) / Surface Water Management in South Dublin			
F8	Drive the implementation of SuDS in SDCC Capital projects, including new builds, retrofits etc, and monitor the level of implementation.	Number of projects; Square meters of permeable paving; % of area of hard surfaces retrofitted	SDG 9: Industry, Innovation and Infrastructure SDG 11: Sustainable Cities and Communities SDG 13: Climate Action SDG 17: Partnership for Goals
F9	Promote and encourage community involvement in the retrofit of SuDS or development of natural flood management measures, in existing housing / developments / local areas.	No of engagement events (social media posts, articles, events) per year	SDG 11: Sustainable Cities and Communities SDG 13: Climate Action SDG 17: Partnership for Goals

FLOOD RESILIENCE

Ref.	Action	Tracking Measure	Sustainble Development Goals
F10	Identify 4 No Demonstration Sites or Pilot schemes to monitor different SuDs projects, demonstrating how to combine SuDS/ flood attenuation systems with exsisting land uses.	Sites Identified and each monitored for a minimum of 1 year	SDG 11: Sustainable Cities and Communities SDG 13: Climate Action SDG 17: Partnership for Goals
F11	Promote and encourage the implementation of SuDS to external Developers - ensure implementation of SuDS in Planning applications in line with SDCC SuDS Guidance.	Number of Green Space Factor implementations that have included SuDS, as a %	SDG 11: Sustainable Cities and Communities SDG 13: Climate Action SDG 17: Partnership for Goals
Improved Maintenance of SuDS and the Stormwater, Surface Water, and Road Gully Networks			
F12	Improve the general maintenance plan for the stormwater and surface water network, with the aim to link to flood event forecasting and incorporate data of locations with known issues.	Length of network cleaned/Desilted per year; Number of screens cleaned per year	SDG 9: Industry, Innovation and Infrastru cture SDG 11: Sustainable Cities and Communities SDG 13: Climate Action
F13	Review gully maintenance plan and operations for improvements, considering areas with recurring issues and smart technology oppportunities.	Number of gullies cleaned per year	SDG 9: Industry, Innovation and Infrastructure SDG 11: Sustainable Cities and Communities SDG 13: Climate Action SDG 17: Partnership for Goals
F14	Develop an improved maintenance plan for SuDS assets that are taken in charge by SDCC, ensuring their continued operation.	Plan developed	SDG 9: Industry, Innovation and Infrastructure SDG 11: Sustainable Cities and Communities SDG 13: Climate Action SDG 17: Partnership for Goals
F15	Maintenance of lakes and wetlands to increase storage capacity during severe weather events, where necessary.	Volume of material removed	SDG 11: Sustainable Cities and Communities SDG 13: Climate Action SDG 15: Life on Land SDG 17: Partnership for Goals

NATURE BASED SOLUTIONS

Ref.	Action	Tracking Measure	Sustainble Development Goals
Sequestering Carbon			
N1	Manage our tree mapping data and ensure the maintenance of our tree management system to evaluate carbon sequestration data associated with trees in South Dublin, and investigate further opportunities for carbon sequestration where possible.	Estimate of carbon sequestration potential based on tree mapping data	SDG 11: Sustainable Cities and Communities SDG 13: Climate Action SDG 15: Life on Land SDG 17: Partnership for Goals
Supporting Green Infrastructure			
N2	Look to maintain and increase natural meadows, where appropriate, across the county.	Number of hectares added as natural meadow to baseline; Measurement of different types of meadow habitat	SDG 11: Sustainable Cities and Communities SDG 13: Climate Action SDG 15: Life on Land SDG 17: Partnership for Goals
N3	Increase native tree planting across the county. Retain existing native trees in South Dublin, in so far as possible.	Number of trees increased over annual baseline / set a yearly target; % increase in County's tree canopy cover; Number of trees per km of road versus the target set by Design Manual for Urban Roads and Streets (a minimum of 50 Number per km)	SDG 11: Sustainable Cities and Communities SDG 13: Climate Action SDG 15: Life on Land SDG 17: Partnership for Goals
N4	Increase and maintain native hedgerow planting across the county.	Linear meters of new hedgerow	SDG 11: Sustainable Cities and Communities SDG 13: Climate Action SDG 15: Life on Land SDG 17: Partnership for Goals
N5	Support / develop small urban 'Miyawaki' native mini-woodlands.	Number of new mini woodlands, a minimum of 100sqm in size	SDG 11: Sustainable Cities and Communities SDG 13: Climate Action SDG 15: Life on Land SDG 17: Partnership for Goals
N6	Develop an Urban Woodland and Hedgerow Management Strategy and implement plans for the County to enhance, maintain and improve existing woodlands throughout our Parks.	Urban woodland management strategy and action plan complete; Measurement of the carbon impact of the County's trees; Number of woodland management plans in place and operating	SDG 6: Clean Water and Sanitation SDG 11: Sustainable Cities and Communities SDG 13: Climate Action SDG 15: Life on Land SDG 17: Partnership for Goals
N7	Implement a programme of enhancement and expansion of ponds and wetland habitats, to expand areas of water storage capacity and increase sequestration.	Number of new wetlands / ponds; Number enhanced	SDG 6: Clean Water and Sanitation SDG 11: Sustainable Cities and Communities SDG 13: Climate Action SDG 15: Life on Land SDG 17: Partnership for Goals
N8	Continue to implement Dublin Mountains Makeover with Coillte Nature and the Dublin Mountains Partnership exploring opportunities for native tree planting projects to manage surface water run off from mountainous areas to reduce flooding downstream.	Meters squared of planting / trees planted	SDG 11: Sustainable Cities and Communities SDG 13: Climate Action SDG 15: Life on Land SDG 17: Partnership for Goals

NATURE BASED SOLUTIONS

Ref.	Action	Tracking Measure	Sustainble Development Goals
N9	Expand and refine the evidence base for the County Habitat Map to identify key habitats / locations for nature based solutions, and use the data to develop management and mitigation plans for these nature based adaptation projects into the future.	Number of habitat and species surveys undertaken; Number of key project locations identified; Number of habitat / species management plans prepared	SDG 11: Sustainable Cities and Communities SDG 13: Climate Action SDG 15: Life on Land SDG 17: Partnership for Goals
N10	Pilot and co-design a biodiversity inclusive design for a social housing estate.	Pilot project designed and delivered with results published	SDG 6: Clean Water and Sanitation SDG 9: Industry, Innovation and Infrastructure SDG 11: Sustainable Cities and Communities SDG 13: Climate Action SDG 15: Life on Land SDG 17: Partnership for Goals
Addressing Biodiversity Loss			
N11	Support the Biodiversity Action Plan 2020-2026.	Number of actions delivered	SDG 13: Climate Action SDG 15: Life on Land SDG 17: Partnership for Goals
N12	Implement a countywide reduction of the usage of chemicals, such as glyphosate, across all council departments.	Reduction in litres purchased	SDG 12: Responsible Consumption and Production SDG 13: Climate Action SDG 17: Partnership for Goals
N13	Identify opportunities to remove culverts to restore urban watercourses.	Metres of culvert removed	SDG 6: Clean Water and Sanitation SDG 13: Climate Action SDG 15: Life on Land SDG 17: Partnership for Goals
Increased Temperatures and Urban Heat Island Effect			
N14	Identify areas in South Dublin that are vulnerable to the impacts of increased heat effects due to climate change.	Study completed	SDG 11: Sustainable Cities and Communities SDG 13: Climate Action SDG 15: Life on Land"
N15	Implement measures to mitigate the Urban Heat Island Effect in identified vulnerable areas, including the management of existing street trees and future planting to reduce impacts.	Number of schemes delivered	SDG 11: Sustainable Cities and Communities SDG 13: Climate Action SDG 15: Life on Land
N16	Investigate the potential for nature based solutions to address the risk of wildfire management, coordinating with the Dublin Fire Brigade.	Plan produced	SDG 11: Sustainable Cities and Communities SDG 13: Climate Action SDG 15: Life on Land
N17	Increase data gathering on the effects of climate change on natural water quality in the county.	Number of monitoring locations and parametric values gathered	SDG 6: Clean Water and Sanitation SDG 11: Sustainable Cities and Communities SDG 13: Climate Action SDG 15: Life on Land SDG 17: Partnership for Goals

CIRCULAR ECONOMY & RESOURCE MANAGEMENT ∞

Ref.	Action	Tracking Measure	Sustainble Development Goals
Managing Waste in SDCC			
R1	Monitor and improve internal waste and water management systems in all SDCC buildings.	"% reduction of individual waste streams across SDCC; 0% growth in waste generated over the life of the Waste Management Plan for a Circular Economy; Cubic meters of water saved	SDG 11: Sustainable Cities and Communities SDG 12: Responsible Consumption and Production SDG 13: Climate Action SDG 17: Partnership for Goals"
R2	Work with corporate services and contractors to reduce waste and improve energy efficiency in SDCC canteen.	Annual tonnages of food waste; Energy used; Introduce reuseable containers	SDG 7: Affordable and Clean Energy SDG 11: Sustainable Cities and Communities SDG 12: Responsible Consumption and Production SDG 13: Climate Action SDG 17: Partnership for Goals
R3	Identify opportunities to reduce Construction & Demolition (C&D) waste generated by SDCC, and liase with relevant organisations collaboratively.	Annual tonnage of Construction & Demolition (C&D) waste sent for reuse	SDG 11: Sustainable Cities and Communities SDG 12: Responsible Consumption and Production SDG 13: Climate Action SDG 17: Partnership for Goals
R4	Investigate sustainable solutions to the management of grass cuttings. Deliver appropriate solutions identified.	Initial Feasibility Study delivered and follow-up delivered every 2 years	SDG 11: Sustainable Cities and Communities SDG 13: Climate Action SDG 17: Partnership for Goals
R5	Promote the use of sustainable / natural alternative materials in new and upgraded playspaces, teenspaces and in the infill of synthetic grass pitches.	m2 of rubber surfacing used in playspaces and teenspaces; Number synthetic grass pitches with rubber infill versus natural infill	SDG 11: Sustainable Cities and Communities SDG 12: Responsible Consumption and Production SDG 13: Climate Action
R6	Introduce recycled or eco friendly paper for use in all SDCC printers.	Recycled / eco friendly paper introduced	SDG 11: Sustainable Cities and Communities SDG 12: Responsible Consumption and Production SDG 13: Climate Action
Adopting a Circular Economy			
R7	Support and promote the implementation of the targets of the National Waste Management Plan for a Circular Economy 2023-2029.	0% waste growth over the life of the plan; Establish a baseline and reduce food waste by half by 2030; Identify opportunities to eliminate waste and maximise the use of resources as outlined in the plan	SDG 11: Sustainable Cities and Communities SDG 12: Responsible Consumption and Production SDG 13: Climate Action SDG 17: Partnership for Goals
R8	To provide for, and maintain, a network of bring banks in the County to facilitate recycling of materials.	Tonnes of glass collected; Tonnes of textiles collected at bring banks; Numberof bring bank locations across the county	SDG 11: Sustainable Cities and Communities SDG 12: Responsible Consumption and Production SDG 13: Climate Action SDG 17: Partnership for Goals

∞ CIRCULAR ECONOMY & RESOURCE MANAGEMENT

Ref.	Action	Tracking Measure	Sustainble Development Goals
R9	Provide opportunities for reuse of materials brought for disposal to SDCC Civic Amenity Facility.	Number of reuse schemes established; Measurement of material diverted to reuse, as appropriate	SDG 11: Sustainable Cities and Communities SDG 12: Responsible Consumption and Production SDG 13: Climate Action SDG 17: Partnership for Goals
R10	Develop sustainability guidelines and terms and conditions for any events supported, facilitated, or organised by SDCC.	Guidelines developed	SDG 11: Sustainable Cities and Communities SDG 12: Responsible Consumption and Production SDG 13: Climate Action SDG 17: Partnership for Goals
R11	Identify outdoor locations for recycling bin trial site(s) in South Dublin, and deliver a pilot project.	Pilot project delivered; Tonnages reported	SDG 11: Sustainable Cities and Communities SDG 12: Responsible Consumption and Production SDG 13: Climate Action SDG 17: Partnership for Goals"
R12	Identify further areas for the installation of drinking water fountains.	Number of locations; Litres of water used compared to estimated plastic bottles saved	SDG 6: Clean Water and Sanitation SDG 17: Partnership for Goals
Protecting the Environment			
R13	Monitor and enforce waste regulation in South Dublin.	Environmental Performance Assessment from the Environmental Protection Agency (EPA)	SDG 11: Sustainable Cities and Communities SDG 12: Responsible Consumption and Production SDG 13: Climate Action

COMMUNITY ENGAGEMENT

Ref.	Action	Tracking Measure	Sustainble Development Goals
Building Climate Awareness			
CE1	Deliver climate education programme for primary and secondary schools, including ongoing delivery of the Green Schools programme and Eco Week.	Number of schools participating; Number of flags awarded in a year; Number of events held; Number of school children reached	SDG 4: Quality Education SDG 13: Climate Action SDG 17: Partnership for Goals
CE2	Deliver Dublin Climate Action Week annually.	Number of events; Number of attendees	SDG 13: Climate Action SDG 17: Partnership for Goals
CE3	Engage with communities and businesses across South Dublin through workshops / presentations, to increase understanding of climate change.	Number of engagements	SDG 13: Climate Action SDG 17: Partnership for Goals
CE4	Use targeted campaigns to increase knowledge of climate issues, for example, Reuse Month, National Food Waste Recycling Week, World Water Day, etc.	Number of campaigns delivered annually	SDG 13: Climate Action SDG 17: Partnership for Goals
CE5	Monitor and develop the Home Energy Savings Kit scheme in SDCC libraries, including developing a youth friendly version, with a potential rollout in schools.	Number of kits in SDCC libraries; Borrrowing rates; Schools kit developed and Number available	SDG 7: Affordable and Clean Energy SDG 9: Industry, Innovation and Infrastructure SDG 11: Sustainable Cities and Communities SDG 12: Responsible Consumption and Production SDG 13: Climate Action SDG 17: Partnership for Goals
CE6	Identify opportunities to utilise libraries in South Dublin as climate hubs.	Number of climate initiatives delivered in / through libraries	SDG 13: Climate Action SDG 17: Partnership for Goals
Communicating Climate Change			
CE7	Publish the SDCC Climate Change Newsletter - three newsletters per year.	Number of newsletters published annually; Number of times newsletter accessed by readers; Number of subscribers	SDG 13: Climate Action
CE8	Maintain and develop the SDCC Climate Action Website.	Number of page views	SDG 13: Climate Action
CE9	Use SDCC Social Media platforms to disseminate climate messages.	Number of interactions	SDG 13: Climate Action
Engage with key external partners to deliver programmes and campaigns to increase knowledge of climate issues			
CE10	Support the Sustainable Energy Authority of Ireland's (SEAI) Sustainable Energy Communities Programme in South Dublin by working with the Local Mentor. Where specific supported energy efficiency and renewable energy projects will not lead to unintended negative environmental effects in a local community.	Number of SECs participating	SDG 13: Climate Action SDG 17: Partnership for Goals
CE11	Work with local clubs to implement GAA Green Clubs.	Number of clubs participating; SDCC Lead in place	"SDG 13: Climate Action SDG 17: Partnership for Goals
CE12	Continue to support the Zero Together initiative through ongoing collaboration and stakeholder engagement to ensure alignment and implementation of SDCC's Climate Action Plan and the Zero Together roadmap to 2030.	Meetings attended / actions implemented in the roadmap relating to the Dublin Local Authorities	SDG 7: Affordable and Clean Energy SDG 11: Sustainable Cities and Communities SDG 13: Climate Action SDG 17: Partnership for Goals
CE13	Participate in the Council's Culture and Creativity Team to identify opportunities to work with local educational and arts organisations to consider climate action in their programmes.	Ongoing partcipation in Culture & Creativity Team	SDG 13: Climate Action
CE14	Strengthen existing networks and create new climate change links to encourage businesses to engage with climate action.	Number of engagements	SDG 13: Climate Action

COMMUNITY ENGAGEMENT

Ref.	Action	Tracking Measure	Sustainble Development Goals
CE15	Engage with external organisations to explore innovative opportunites or initiatives that could be progressed in South Dublin.	Number of engagements or opportunties	SDG 13: Climate Action
CE16	Engage with the agricultural community to understand how SDCC can support resilience efforts and sustainable farming practices.	Record number of direct and indirect engagements with farming sector	SDG 17: Partnership for Goals
CE17	Provide Climate Awareness training for all staff and elected members, and identify opportunities to embed climate awareness across all departments.	Number of staff trained; Number of councillors trained	SDG 13: Climate Action
Embed Climate Action within every department of South Dublin County Council			
CE18	Develop SDCC climate action induction pack for all new staff.	Pack developed and rolled out	SDG 13: Climate Action
C19	Work with the IT department to identify opportunites where technology could be used to address climate issues, while also leveraging the Smart Dublin programme.	Projects identified	SDG 9: Industry, Innovation and Infrastructure SDG 13: Climate Action SDG 17: Partnership for Goals
Support communities in South Dublin to deliver climate projects			
CE20	Deliver the Community Climate Action Fund.	% of the grant spent on local climate change projects	SDG 13: Climate Action SDG 17: Partnership for Goals
CE21	Support Tidy Towns initiatives which promote climate mitigiation or adaptation measures.	Number of initiatives supported annually	SDG 13: Climate Action SDG 17: Partnership for Goals
CE22	Community Department to identify key opportunities to engage with communities throughout the county, working with the Climate Action Team.	Number of meetings held; Number of opportunities identified	SDG 13: Climate Action
CE23	Work in collaboration with artists, and in partnership with the SDCC Climate Action Team, to develop creative art initiatives that engage the population of the county in conversations about climate action.	Number of initiatives supported	SDG 13: Climate Action

Appendix II: References

1. **Intergovernmental Panel on Climate Change (IPCC) Working Group I.** Sixth Assessment Report (2021). Available from: https://www.ipcc.ch/assessment-report/ar6/

2. **Met Éireann (2023). 'Provisionally Ireland's Warmest Year on Record'.** Available from: https://www.met.ie/2022-provisionally-irelands-warmest-year-on-record

3. **Government of Ireland (2020).** Climate Status Report for Ireland 2020. Available from: https://www.epa.ie/publications/research/climate-change/Research_Report_386.pdf

4. **United Nations.** Framework Convention on Climate Change- website. Available from: https://unfccc.int/

5. **United Nations (2015).** Paris Agreement 2015. Available from: https://unfccc.int/files/essential_background/convention/application/pdf/english_paris_agreement.pdf

6. **United Nations (2015).** Transforming Our World: the 2030 Agenda for Sustainable Development. Available from: https://sdgs.un.org/2030agenda

7. **European Commission (2020).** The European Green Deal. Available from: https://commission.europa.eu/strategy-and-policy/priorities-2019-2024/european-green-deal_en

8. **European Commission (2021).** European Climate Law. Available from: https://climate.ec.europa.eu/eu-action/european-climate-law_en

9. **Government of Ireland (2021).** Climate Action and Low Carbon Development (Amendment) Act 2021. Available from: https://www.irishstatutebook.ie/eli/2021/act/32/enacted/en/html

10. **Government of Ireland (2023).** Climate Action Plan 2023. Available from: https://www.gov.ie/en/publication/7bd8c-climate-action-plan-2023/

11. **Department of the Environment, Climate and Communications (2018).** National Adaptation Framework. Available from: https://www.gov.ie/en/publication/fbe331-national-adaptation-framework/

12. **Government of Ireland (2023).** Long Term Strategy on Greenhouse Gas Emissions Reduction. Available from: https://www.gov.ie/en/publication/e4e81-long-term-strategy-on-greenhouse-gas-emissions-reductions/

13. **Government of Ireland (2020).** Sectoral Adaptation Plans. Available from: https://www.gov.ie/en/collection/51df3-sectoral-adaptation-planning/

14. **Government of Ireland.** The Local Authority Climate Action Charter. 2019. Available from: https://www.gov.ie/en/publication/d914a-local-authority-climate-action-charter/

15. **County and City Management Association (2021).** Delivering Effective Climate Action 2030. Available from: https://www.lgma.ie/en/publications/local-authority-sector-reports/delivering-effective-climate-action-2030.pdf

16. **Government of Ireland (2023).** 'Local Authority Climate Action Plan Guidelines'. Available from: https://www.gov.ie/en/publication/f5d51-guidelines-for-local-authority-climate-action-plans

17. **OurWorldInData (2022).** 'Primary, secondary, final, and useful energy: Why are there different ways of measuring energy?' Available from: https://ourworldindata.org/energy-definitions

18. **Government of Ireland (2020).** Programme for Government: Our Shared Future. Available from: https://www.gov.ie/en/publication/7e05d-programme-for-government-our-shared-future/

19. **Nolan, P. & Flanagan, J. (2020).** 'High-resolution Climate Projections for Ireland – A Multi-model Ensemble Approach'. EPA. Available from: https://www.epa.ie/publications/research/climate-change/research-339-high-resolution-climate-projections-for-ireland-.php (Accessed: 19 July 2023).

20. **MaREI, the SFI Research Centre for Energy, Climate and Marine (2023).** Climate Ireland. Available from: https://www.climateireland.ie/#!/. (Accessed: 19 July 2023).

21. **Oireachtas, Library & Research Service (2022).** Energy Poverty in Ireland. Available from: https://data.oireachtas.ie/ie/oireachtas/libraryResearch/2022/2022-03-04_l-rs-note-energy-poverty-in-ireland_en.pdf

22. **Codema (2017). Developing CO2 Baselines.** Available from: https://www.codema.ie/images/uploads/docs/Developing_CO2_Baseline_-_A_Step-by-Step_Guide_for_your_Local_Authority.pdf

23. **Codema (2021). Dublin Region Energy Master Plan.** Available from: https://www.codema.ie/projects/local-projects/dublin-region-energy-master-plan/

24. **Central Statistics Office (CSO) (2016).** Census 2016 Reports. Available from: https://www.cso.ie/en/census/census2016reports/

25. **European Environment Agency (2017).** Urban Atlas. Available from: https://data.europa.eu/euodp/en/data/dataset/data_urban-atlas

26. **Sustainable Energy Authority Ireland (2022).** The National Heat Study. Available from: https://www.seai.ie/data-and-insights/national-heat-study/

27. **Department of Housing, Local Government and Heritage (2006).** A Framework for Major Emergency Management. Available from: https://www.gov.ie/en/collection/ca182-a-framework-for-major-emergency-management/

28. **Central Statistics Office (CSO) (2022).** Census 2022. Available from: https://www.cso.ie/en/statistics/population/censusofpopulation2022/

29. **National Transport Authority (2022).** Greater Dublin Area Transport Strategy 2022-2042. Available from: http://www.nationaltransport.ie

30. **Department of Transport. National Electric Vehicle Charging Infrastructure Strategy 2022-2025.** Available from: https://www.gov.ie/en/publication/3faf6-electric-vehicles-charging-infrastructure-strategy-2022-2025/

31. **South Dublin County Council.** South Dublin County Council (2022). Dublin Local Authority Electric Vehicle Charging Strategy. Available from: https://www.sdcc.ie/en/climate-action/image-library-pdfs/pdf-folder/dublin_local-authority_ev_charging_strategy.pdf

32. **South Dublin County Council (2020).** Cycle South Dublin Programme Available from: https://www.sdcc.ie/en/active-travel/cysd-programme/

33. **National Transport Authority.** National Transport Authority (2021). Dublin Metropolitan Area Walking and Cycling Index 2021. Available from: https://www.nationaltransport.ie/wp-content/uploads/2022/05/220504-WACI22_DublinMetropolitanArea_v35_DIGITAL_v2.pdf

34. **European Commission (2007).** Floods Directive- 2007/60/EC. Available from: https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex:32007L0060

35. **European Commission (2000).** Water Framework Directive- 2000/60/EC. Available from: https://environment.ec.europa.eu/topics/water/water-framework-directive_en

36. **South Dublin County Council (2022).** County Development Plan 2022-2028. Available from: https://www.sdcc.ie/en/devplan2022/adopted-plan/

37. **South Dublin County Council (2022).** Sustainable Drainage Explanatory Design & Evaluation Guide. Available from: https://www.sdcc.ie/en/services/environment/environmental-health/water-services/sustainable-drainage-systems/

38. **South Dublin County Council (2022).** A Householders Guide to Sustainable Drainage (SuDS). Available from: https://www.sdcc.ie/en/services/environment/environmental-health/water-services/sustainable-drainage-systems/

39. **European Commission.** European Research Executive Agency – Nature Based Solutions. Available from https://rea.ec.europa.eu/funding-and-grants/horizon-europe-cluster-6-food-bioeconomy-natural-resources-agriculture-and-environment/nature-based-solutions_en

40. **South Dublin County Council (2020).** Connecting with Nature- Biodiversity Action Plan for South Dublin County 2020-2026. Available from: https://consult.sdublincoco.ie/en/consultation/draft-biodiversity-action-plan-south-dublin-county-connecting-nature-2020-2026

41. **South Dublin County Council.** South Dublin County Council (2021). Living with Trees', South Dublin County Council Tree Management Policy 2021-2026. Available from: https://www.sdcc.ie/en/climate-action/image-library-pdfs/pdf-folder/living-with-trees-south-dublin-county-council-tree-management-policy-2021-2026.pdf

42. **Intergovernmental Panel on Climate Change (2021).** Regional fact sheet –Urban Areas. In: Climate Change 2021: The Physical Science Basis. Contribution of Working Group I to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change [Masson-Delmotte, V., P. Zhai, A. Pirani, S.L. Connors, C. Péan, S. Berger, N. Caud, Y. Chen, L. Goldfarb, M.I. Gomis, M. Huang,K. Leitzell, E. Lonnoy, J.B.R. Matthews, T.K. Maycock, T. Waterfield, O. Yelekçi, R. Yu, and B. Zhou (eds.)]. Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA. Available at: Fact Sheets (Accessed: 19 July 2023).

43. **Paranunzio, R., Dwyer, E., Fitton, J.M., Alexander, P.J., & O'Dwyer B. Assessing current and future heat risk in Dublin city, Ireland, Urban Climate. 2021.** Available from: https://www.researchgate.net/publication/355058805_Assessing_current_and_future_heat_risk_in_Dublin_city_Ireland

44. **Department of Housing, Local Government and Heritage (2022).** River Basin Management Plan 2022-2027 (Draft). Available from: https://www.gov.ie/en/consultation/2bda0-public-consultation-on-the-draft-river-basin-management-plan-for-ireland-2022-2027/

45. **Government of Ireland (2020).** Waste Action Plan for a Circular Economy 2020–2025. Available from: https://www.gov.ie/en/publication/4221c-waste-action-plan-for-a-circular-economy/

46. **Government of Ireland (2022).** Whole of Government Circular Economy Strategy 2022-2023. Available from: https://www.gov.ie/en/publication/b542d-whole-of-government-circular-economy-strategy-2022-2023-living-more-using-less/

47. **Department of Housing, Local Government and Heritage.** A Framework for Major Emergency Management. 2006. Available from: https://www.gov.ie/en/collection/ca182-a-framework-for-major-emergency-management/

48. **Intergovernmental Panel on Climate Change.** Climate Change 2021: The Physical Science Basis. 2021. Available from: https://report.ipcc.ch/ar6/wg1/IPCC_AR6_WGI_FullReport.pdf

49. **Environmental Protection Agency.** 2023. https://www.epa.ie/take-action/in-the-home/climate-change/adaptation--mitigation/

50. **Department of Housing, Local Government, and Heritage.** Project Ireland 2040: National Planning Framework', Department of Housing, Local Government, and Heritage. Available at: HYPERLINK "https://www.gov.ie/pdf/?file=https://assets.gov.ie/246231/39baaa8c-48dc-4f24-83bd-84bbcf8ff328.pdf"Project Ireland 2040: National Planning Framework

Appendix III: List of Figures

Appendix IIII: List of Tables

USEFUL WEBSITES

South Dublin County Council's Climate Action Website:
www.southdublinclimate.ie
https://www.sdcc.ie/en/climate-action/resources/south-dublin-county-council-publications/

South Dublin County Council's Active Travel Website:
https://www.sdcc.ie/en/active-travel/

Dublin City Council and South Dublin County Council's City Edge Project Website:
https://cityedge.ie/

Whitechurch Flood Alleviation Scheme – Project Website:
www.whitechurchfas.ie

River Poddle Flood Alleviation Scheme – Project Website:
http://www.poddlefas.ie/

South Dublin County Council. Dublin Urban Rivers LIFE (DURL) Project Website:
https://www.sdcc.ie/en/services/environment/dublin-urban-rivers-life/

Dublin Climate Action Week Website:
www.dublinclimateactionweek.ie

Appendix IV: Abbreviations

AA	Appropriate Assessment		**FCC**	Fingal County Council
AAMP	Ambient Air Quality Monitoring Programme		**GAA**	Gaelic Athletic Association
AD	Anaerobic Digestor		**GDA**	Greater Dublin Area
AEP	Annual Event/Exceedance Probability		**GHG**	Greenhouse Gases
BEI	Baseline Emissions Inventory		**GI**	Green Infrastructure
BER	Building Energy Rating		**GIS**	Geographical Information System
CAF	Community Climate Action Fund		**GSF**	Green Space Factor
CAP	Climate Action Plan		**GTT**	Gap To Target
CARO	Climate Action Regional Office		**ICW**	Integrated Constructed Wetland
CCAC	Climate Change Advisory Committee		**IPCC**	Intergovernmental Panel on Climate Change
CCAP	Climate Change Action Plan		**KM**	kilometer
CCC	Conscious Cup Campaign		**LAS**	Local Authorities
CCMA	County & City Management Association		**LAP**	Local Area Plan
CCRA	Climate Change Risk Assessment		**LASNTG**	Local Authority Services National Training Group
C&D	Construction and Demolition		**LECP**	Local Economic and Community Plan
CDP	County Development Plan		**LEO**	Local Enterprise Office
CFRAMS	Catchment Flood Risk Assessment & Management		**LGMA**	Local Government Management Agency
CO	Carbon Monoxide		**LIFE**	L'Instrument Financier pour l'Environnement
CO2	Carbon Dioxide		**LUPT**	Land Use, Planning and Transportation
CO2E	Carbon Dioxide equivalent		**M&R**	Monitoring and Reporting (SEAI)
CODEMA	City of Dublin Energy Management Agency		**MEM**	Major Emergency Management
COM	Covenant of Mayors		**MWH**	Megawatt hour
COP	Conference of Parties		**NAF**	National Adaptation Framework
CSO	Central Statistics Office		**NBS**	Nature Based Solutions
CYSD	Cycle South Dublin		**NOAC**	National Oversight and Audit Commission
DAFM	Department of Agriculture, Food & Marine		**NSG**	National Steering Group
DCAW	Dublin Climate Action Week		**NPWS**	National Parks & Wildlife Services
DCC	Dublin City Council		**NTA**	National Transport Authority
DEC	Display Energy Certificates		**NZEB**	Nearly Zero Energy Building
DECC	Department of the Environment, Climate & Communications		**OPR**	Office of Planning Regulator
DHLGH	Department of Housing, Local Government & Heritage		**OPW**	Office of Public Works
DLAS	Dublin Local Authorities		**PPN**	Public Participation Network
DMURS	Design Manual for Urban Roads and Streets		**PV**	Photovoltaic
DLR	Dún Laoghaire-Rathdown County Council		**RCP**	Representative Concentration Pathway
DREM	Dublin Region Energy Masterplan		**RSA**	Road Safety Authority
DURL	Dublin Urban Rivers LIFE Project		**SDCC**	South Dublin County Council
DZ	Decarbonising Zone		**SDGS**	Sustainable Development Goals
E-BIKE	Electric Bicycle		**SDZ**	Strategic Development Zone
EIA	Environmental Impact Assessment		**SEA**	Strategic Environmental Assessment
EMP	Energy Masterplan		**SEAI**	Sustainable Energy Authority of Ireland
EMRA	Eastern and Midlands Regional Authority		**SEC**	Sustainable Energy Community
EMWR	Eastern & Midlands Waste Region		**SEU**	Significant Energy User
EPA	Environmental Protection Agency		**SFRA**	Strategic Flood Risk Assessment
EPC	Energy Performance Contract		**SPC**	Strategic Policy Committee
ESB	Electricity Supply Board		**SUDS**	Sustainable Drainage Systems
ESRI	Economic & Social Research Institute		**TPER**	Total Primary Energy Requirement
EU	European Union		**TII**	Transport Infrastructure Ireland
EV	Electric Vehicle		**TUD**	Technological University of Dublin
EWCC	Environment, Water and Climate Change		**TCO2**	Tonnes of carbon dioxide
FAS	Flood Alleviation Scheme		**UCD**	University College Dublin
			WFD	Water Framework Directive
			ZEVI	Zero Emission Vehicles Ireland

Comhairle Contae
Átha Cliath Theas
South Dublin County Council

South Dublin County Council

**DRAFT CLIMATE
ACTION PLAN**

**2024
2029**

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