

4.7 **Land Use**

Information on land use in Cork City can be obtained from the CORINE Land Cover (CLC) inventory and Ireland's Marine Atlas⁴⁵. These data sources have archives which document land use change as well as existing land use.

The CORINE database is the dominant land use database; however, some sectors have additional spatial data resources such as forestry. The Forestry Service have produced a GIS based Forest Inventory Planning System (FIPS) to act as an aid in the long-term spatial planning of national forest, and to provide guidance to forestry grants. Additional sources of further land use data include the NPWS⁴⁶.

The SEA process considered land use impacts - utilising data from sources such as:

- **CORINE Land Cover Database**
- Teagasc
- **EPA**
- **NPWS**
- **Forest Service**
- Marine Institute
- Sea Fisheries Protection Authority (SFPA)
- GSI data

4.7.1 Key Considerations relating to the Draft Strategy

The key considerations in relation to Land Use are as follows:

EV infrastructure development may influence the human environment and land use in the urban setting of Cork City.

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⁴⁵ Available at Ireland's Marine Atlas

⁴⁶ Sources such as the Lesser Horseshoe Bat Species Action Plan 2022-2026, Draft National Peatland Strategy, Draft Raised Bog SAC Management Plan, and Draft Raised Bog NHAs Review.



4.8 **Air Quality and Noise**

The Air Quality in Ireland 2022 report prepared by the EPA identifies that:

- Air quality in Ireland is generally good, however, there are concerning localised issues that are negatively impacting the air we breathe.
- Air quality monitoring results in 2022 show that the main pollutants are fine particulate matter (PM_{2.5}) from solid fuel combustion and nitrogen dioxide (NO₂) from vehicle emissions.
- People's health and the health of our environment is impacted by these pollutants.
- Ireland's ambition in the Clean Air Strategy is to move towards the World Health Organisation (WHO) Air Quality guidelines⁴⁷, this will be challenging but will have a significantly positive impact on health.

The National Clean Air Strategy (DECC, 2023) referred to the most recent projections by the EPA in 2022 and states that Ireland is on track to meet the majority of EU commitments for national emissions levels by 2030, and there was only one exceedance of EU ambient air quality limit values since 2010.

Under the Clean Air for Europe Directive [Directive 2008/50/EC], EU member states must designate "Zones" for the purpose of managing air quality. For Ireland, four zones were defined in the Air Quality Standards Regulations (2011). The Cork City conurbation is defined as 'Zone B' out of the four zones in Ireland. The current air quality in Cork City is identified by the EPA as being of Good 48 status.

The EEA⁴⁹ states that "environmental noise can be defined as unwanted or harmful outdoor sound". The EU Noise Directive (2002/49/EC) relates to the assessment and management of environmental noise⁵⁰. This Directive called for the development of strategic noise maps and action plans for major roads, railways, airports and cities. Existing noise related impacts can be seen in Figure 4-10; these were considered throughout the SEA process in the development of the Strategy.

The SEA considered Air Quality and Noise using data from the following sources:

- **EPA**
- WHO

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⁴⁷ World Health Organization. 2021.WHO global air quality guidelines: particulate matter (PM_{2.5} and PM₁₀), ozone, nitrogen dioxide, sulphur dioxide and carbon monoxide. World Health Organization. https://apps.who.int/iris/handle/10665/345329. License: CC BY-NC-SA 3.0 IGO

⁴⁸ EPA AirQuality.ie - 07/03/2024

⁴⁹ EEA. 2022. Noise Data Briefing. Available at: Noise — European Environment Agency (europa.eu).

⁵⁰ This was transposed into Irish national legislation via the Environmental Noise Regulations (S. I. No. 140 of 2006).

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4.8.1 Key Considerations relating to the Draft Strategy

Overall, the Draft Strategy is likely to have positive effects on air quality due to the nature of the Strategy; however, there are potential issues which may arise due to the implementation.

The key considerations in relation to Air Quality and Noise are as follows:

• The construction of EV infrastructure development may have a negative impact on local air quality and create noise pollution.

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4.9 Water

The EU Water Framework Directive (WFD) (2000/60/EC) establishes a framework for the protection of both surface and groundwater. Transposing legislation outlines the water protection and water management measures required in Ireland to maintain high status of waters where it exists and to prevent any deterioration in existing water status. The second cycle of the River Basin Management Plan (RBMP) ran from 2018-2021, where separate plans were devised for all eight River Basin Districts (RBDs) with the objective of achieving at least 'good' status for all waters by 2027. The third cycle of the River Basin Management Plan is currently in the process of being prepared.

Water quality data is collected by the EPA⁵¹. The city is located mainly within the Lee River and Cork City Harbour catchments. The Celtic Sea lies on the west of the city's coastline. The WFD status of coastal water bodies (2016-2021) for Cork City Harbour is of moderate status and the Celtic Sea is identified as being of high status.

The EU Groundwater Directive (2006/118/EC) uses a holistic approach to groundwater by addressing the relationships between groundwater, surface water and ecological receptors. Groundwater is considered by its ecological status, which is based on two assessments: chemical and quantitative status. Both of these need to be in good condition for the overall water body to be classified as good.

The WFD groundwater status (2016-2021) underlying Cork City is generally identified as being of good status.

The WFD status of rivers and streams (2016-2021) draining Cork City ranges from good (sections of rivers and streams, including Moneygurney and Lee to moderate (sections of rivers and streams including: Curragheen) and to poor (sections of rivers and streams including: Bride and Glasheen).

Pressures on waterbodies that are failing to meet the WFD's overall objective of 'good' status will be identified by the SEA and policy responses will be recommended as necessary. The SEA will also provide information on aquifer vulnerability, aquifer productivity and entries to the WFD's Registers of Protected Areas.

Certain areas across the city are at risk of flooding from various sources including groundwater, pluvial, fluvial, estuarial and coastal. Cork City is located on the south coast of Ireland, and some of the Strategy boundary is subject to flood risk from the Celtic Sea. There are various historic and predictive indicators of flood risk in the city, including along the Lee River and at various locations along the coastline.

The OPW is the lead agency tasked with the management of flood risk in the Republic of Ireland. In 2022, the OPW reviewed their 2016 Flood Risk Management Plans (FRMP). The purpose of each FRMP is to outline the long-term strategy to manage flood risk in Ireland. A number of settlements were identified by the OPW in 2012 as requiring detailed assessment of flood risk (Areas for Further Assessment)⁵². These settlements include – Cork City, Douglas, Togher, Glanmire and Tower.

A Strategic Flood Risk Assessment, as required by 'The Planning System and Flood Risk Management Guidelines for Planning Authorities' (Department of the Environment, Heritage and Local Government and Office of Public Works, 2009) and Circular PL 2/2014 (Department of Environment, Community and Local Government), was undertaken alongside the preparation of the City Development Plan. This document provides information of relevance to provisions of EV charging infrastructure outlined in the Draft Strategy, including information on land use zoning, flood risk management policy and flood risk indicators in the city.

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⁵¹ EPA Maps. Water.

⁵² Available online at Microsoft Word - PFRA Main Report - Rev D.doc.

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The GSI rates groundwaters according to both their productivity and vulnerability to pollution. Aquifer vulnerability refers to the ease with which pollutants of various kinds can enter into groundwater. The vulnerability of aquifers underlying the city are mapped on Figure 4-15. The GSI also rates aquifers based on the hydrogeological characteristics and on the value of the groundwater resource. This is referred to as aquifer productivity and is mapped on Figure 4-16.

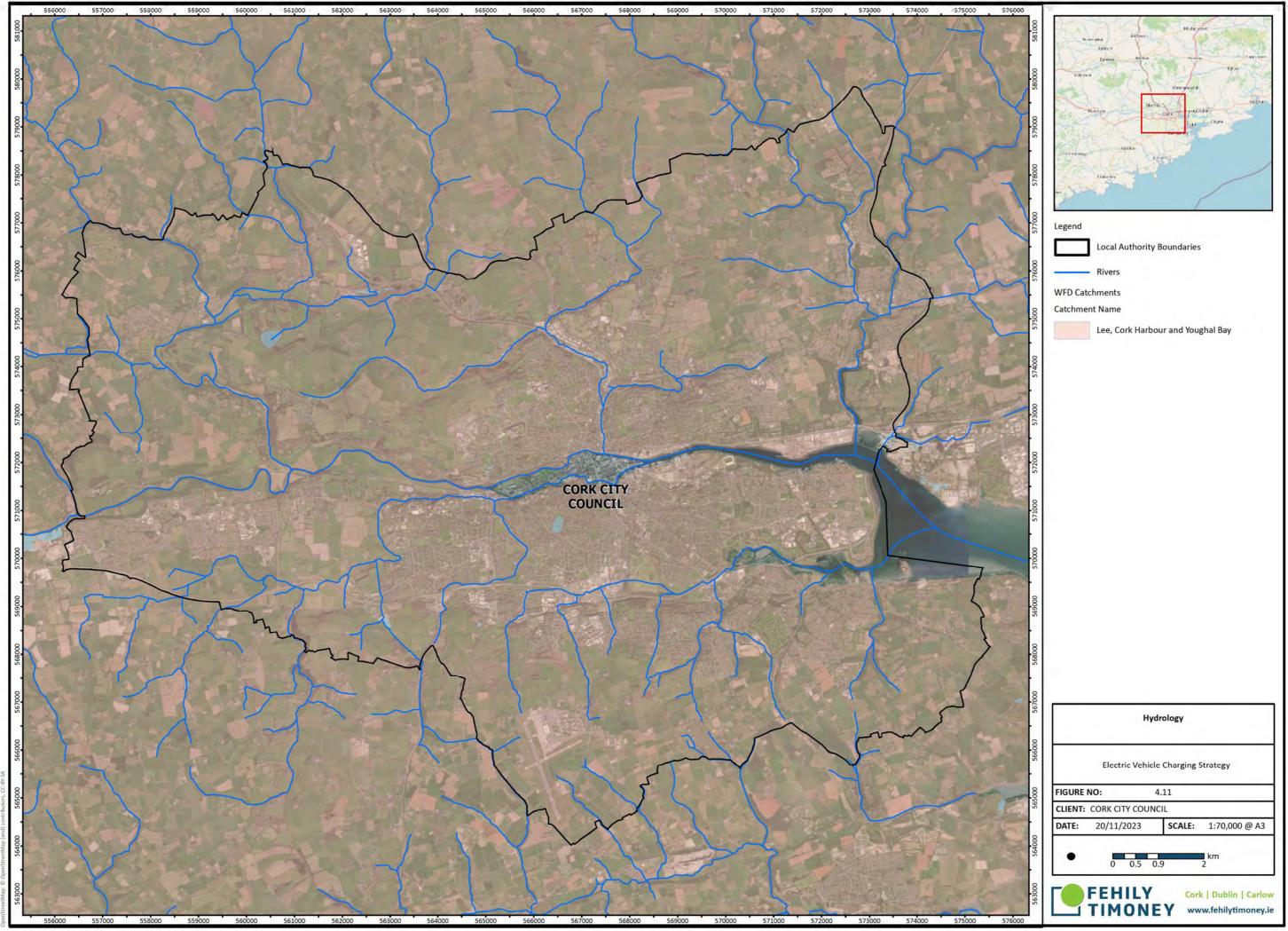
The Water assessment utilised information from the following sources:

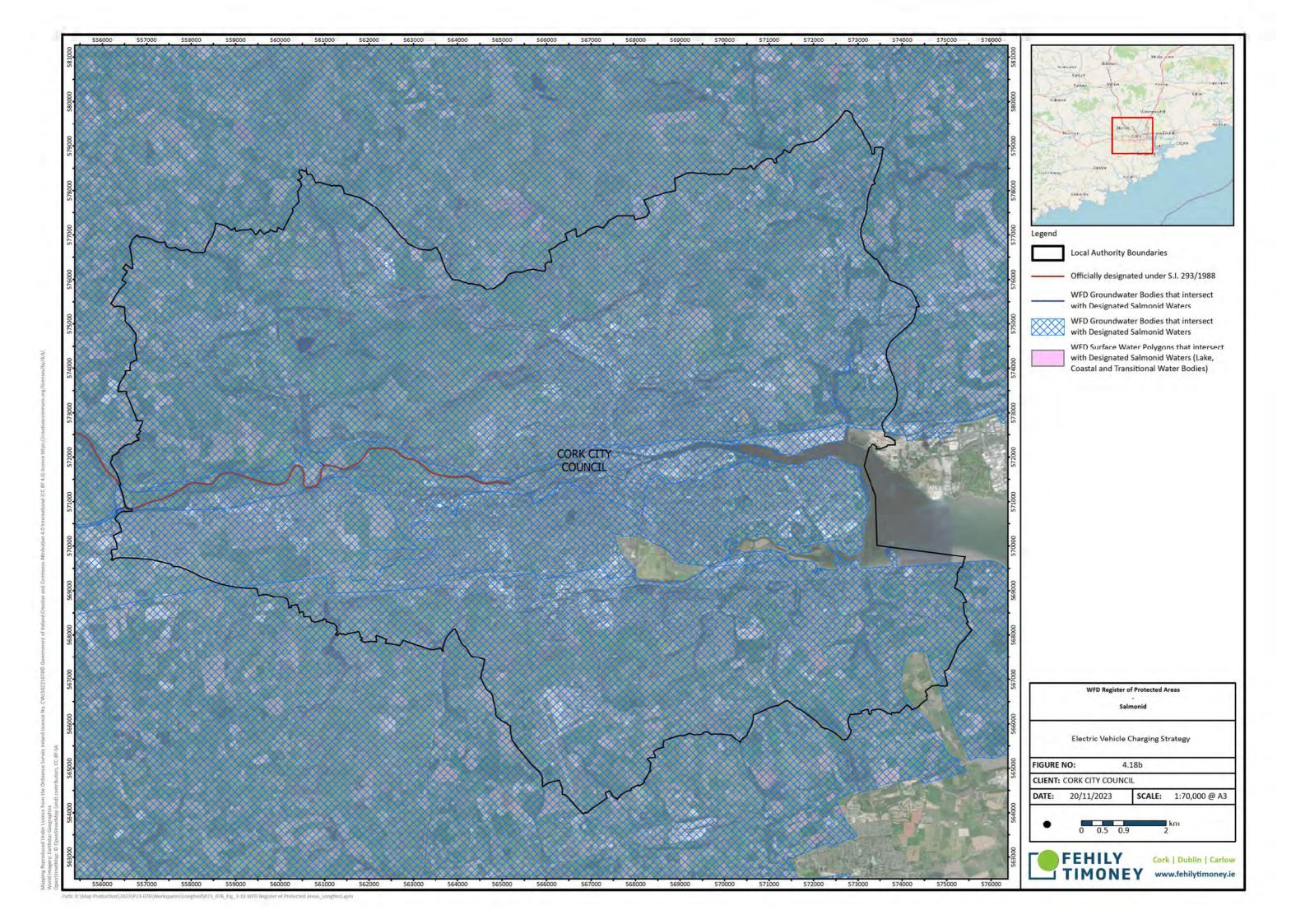
- EPA and Marine Institute WFD Data
- GSI data on groundwaters, aquifers and bedrock information
- Catchment Flood Risk Assessment and Management (CFRAM) Study and associated FRMPs (OPW, as reviewed 2022)
- Flood Risk Assessment (FRA) Mapping⁵³ (OPW)

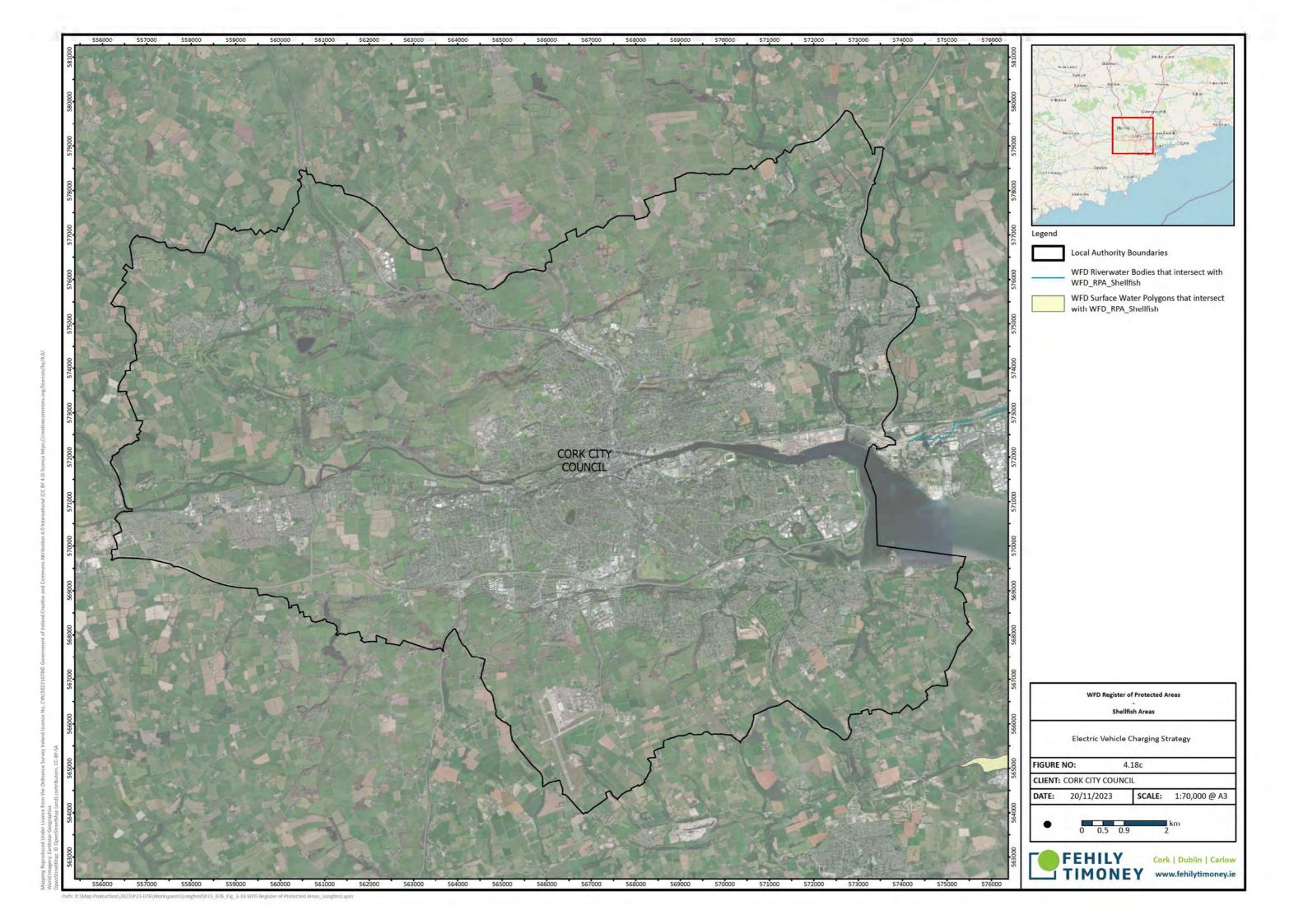
4.9.1 Key Considerations relating to the Draft Strategy

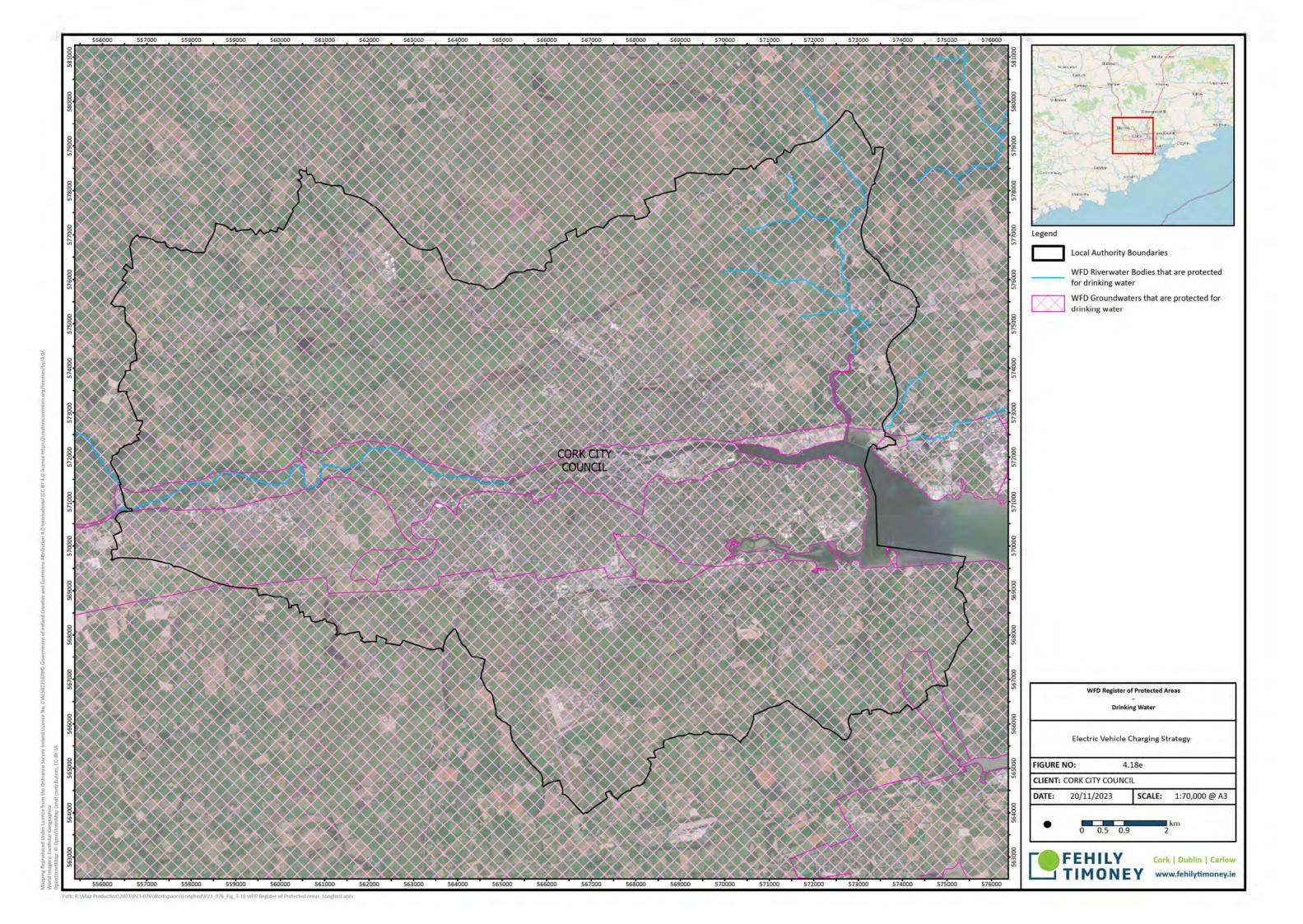
It is not envisaged the Draft Strategy will have any significant effect on the receiving water environment - having regard to the predicted limited scale and magnitude of EV charging point development works supported by the Draft Strategy and anticipated drainage arrangements for EV development works.

⁵³ OPW (2022) Flood risk maps and data platform - Available at https://www.floodinfo.ie/map/floodmaps/









4.10 Material Assets

Other level material assets include transport infrastructure, power generation plants and supply networks, water supply, wastewater treatment infrastructure and waste disposal sites among others. Potential opportunities and conflicts associated with these assets were considered in the SEA. Other material assets covered by the SEA included archaeological and architectural heritage (see Section 4.5) and natural resources of economic value, such as soil⁵⁴, air and water (see Sections 4.6, 4.8 and 4.9).

4.10.1 Water Services

4.10.1.1 Wastewater

Wastewater demand and capacity information at settlements of relevant to SEA generally, includes⁵⁵:

- Population served.
- Loading.
- Capacity.
- Level of treatment.
- Spare capacity or shortfall.
- Compliance with the Urban Waste Water Treatment Directive.
- Wastewater infrastructure investment needs.
- Planned wastewater infrastructure

The EPA produces annual reports on the treatment of urban wastewater from cities, towns and urban communities. The latest EPA 2023 report⁵⁶ 'Urban Waste Water Treatment in 2022' identifies the priority areas where resources must be targeted, in order to protect the environment from the harmful effects of waste water and deliver environmental improvements where they are most needed. Based on the EPA's assessment of monitoring information provided by Uisce Éireann and the enforcement activities carried out by the EPA, this report identifies urban areas with the most important environmental issues that must be addressed. Cork City is listed as a priority area.

4.10.1.2 Surface Water Drainage

Sustainable Urban Drainage Systems (SUDS) can minimise the quantity and increase the quality of surface water runoff as well as mitigating adverse impacts of climate change. SUDS can also provide amenity and biodiversity benefits.

⁵⁴ Soil and geological resources will be considered under this topic including with respect to mineral locations and aggregate potential.

⁵⁵ Detailed water services information will inform the preparation of the SEA Environmental Report.

⁵⁶ Available at Monitoring & Assessment: Wastewater | Environmental Protection Agency (epa.ie)

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4.10.2 Waste Management

The Waste Management Act 1996 requires Local Authorities to make a waste management plan either individually or collectively for their functional areas. In 2015, Cork City was guided by the Southern Waste Management Plan 2015-2021 which provided the framework for solid waste management in the region. Post 2021, waste management in Ireland is guided by the first National Waste Management Plan for a Circular Economy, which replaces the existing regional plans. This Plan sets out a framework for the prevention and management of waste in Ireland for the period 2023 to 2029.

The most recent Circular Economy and Miscellaneous Provisions Act 2022 provides a legal basis to support the circular transition by: 1) incentivising the use of reusable and recyclable alternatives to a range of wasteful single-use disposable packaging and other items, 2) re-designating Ireland's existing Environment Fund as a Circular Economy Fund, 3) requiring mandatory segregation and incentivised charging for commercial waste, similarly to the system that already exists for the household market, and 4) improving our national regulatory processes, to encourage the safe and sustainable re-use of materials instead of treating them as wastes.

4.10.3 Transport

Cork City is traversed by a number of major roads – the M8/N8, N22, N20, N27, N28, N40 and the N71. The City is served by the intercity commuter train services and local connections to metropolitan commuter towns. Further to this, Bus Eireann and a number of other private operators provide local and intercity bus services to the City.

4.10.4 Public Assets and Infrastructure

Public assets and infrastructure that have the potential to be impacted upon by the Strategy, if unmitigated, include settlements; resources such as public open spaces, parks and recreational areas; public buildings and services; transport and utility infrastructure (electricity, gas, telecommunications, water supply, waste water infrastructure etc.); forestry; and natural resources that are covered under other topics such as water and soil.

4.10.5 Renewable Energy Potential

Under EU Directive 2001/77/EC Renewable Energy, renewable energy sources are defined as renewable non-fossil energy sources such as, but not limited to wind, solar, geothermal, wave, tidal, hydropower, biomass, landfill gas, sewage treatment plant gas, biogases and biochar (i.e., the thermal treatment of natural organic materials in an oxygen-limited environment). Available information on renewable energy potential within and adjacent to the city – and any associated Strategy provisions – was considered by the SEA.

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4.10.5.1 Energy Related Material Assets and Infrastructure

SEAI (2020⁵⁷) published the kilotonnes of oil equivalent (ktoe) data which showed that 86% of Ireland's energy came from fossil fuels at that time. Transportation and residential represented the highest resource demand. The generation of renewable energy has been increasing over the past ten years, with a growth in the number of wind farms (from 5.8% of gross final energy consumption in 2010 to 13.5 of GFC in 2020⁵⁸). All traditional power plants are in a process of transition to renewable/sustainable sources to align with the targets in the Climate Action Plan 2023.

The SEA of Material Assets utilised information from the following sources:

- Department of Defence
- Department of Housing, Local Government, and Heritage (DHLGH)⁵⁹
- EPA marine disposal sites
- Electricity Supply Board (ESB)
- Iarnród Éireann
- Irish Bioenergy Association (IrBEA)
- Irish Solar Energy Association (ISEA)
- Irish Wind Energy Association (IWEA)
- SEAI
- SFPA
- Transport Infrastructure Ireland (TII)
- Uisce Éireann
- Waterways Ireland
- ZEVI

4.10.6 Key Considerations relating to the Draft Strategy

It is not likely that the Draft Strategy will result in significant effects to wastewater treatment or water services in general, given the nature of the Draft Strategy.

The key considerations in relation to Material Assets are as follows:

- Economic growth and development of EV infrastructure has the potential to increase energy demand within the city above energy grid capacity levels.
- Development of EV infrastructure is likely to necessitate ancillary infrastructural upgrades and grid connections.
- Effects of construction on current infrastructure such as road networks/parking demand.
- Potential for EV infrastructure provided affecting traffic dynamics.

⁵⁷ SEAI. 2020. SEI01 - Energy Balance data resource; Available at SEI01 - Energy Balance (ktoe) - Datasets - data.gov.ie

⁵⁸ SEAI. 2020. Overall renewable energy share - available at Renewables | Energy Statistics In Ireland | SEAI

⁵⁹ Energy Offshore Renewable - Datasets - data.gov.ie



 Construction and excavation works associated with EV infrastructure and ancillary infrastructure development may impinge on the gas, water or wastewater networks in the context of a built urban environment, including planned infrastructure

4.11 Tourism and Recreation

Tourism and recreation are influenced by a range of factors in Ireland. International tourism has increased in recent years. Failte Ireland has recently published their four brand strategies⁶⁰ which will define the spatial scope and spread of future tourism developments within Ireland. Cork City hosts 'Wild Atlantic Way' and the success of the brand strategy will result in infrastructure demands to previously less trafficked areas. Cork City Council has developed the Visit Cork Sustainability Strategy (2023-2030). Cultural Heritage sites also support heritage-related tourism and recreation, see Section 4.5. Landscape is also an important aspect in terms of Tourism, see Section 4.4.

The SEA of Tourism and Recreation utilised the following information sources:

- Department of Transport, Tourism and Sport
- Central Statistics Office (CSO)
- Recreational sailing groups and ferry operators
- Fáilte Ireland
- National Trails Office

4.11.1 Key Considerations relating to the Draft Strategy

The key considerations in relation to Tourism and Recreation are as follows:

 Unintended environmental impacts associated with EV Charging Infrastructure development may indirectly impact on tourism, recreation and amenity in the city, including on cultural heritage assets that provide recreation and amenity value.

4.12 Climate Change

The recent Climate Action and Low Carbon Development (Amendment) Act 2021 was established to provide for the approval of plans by the Government in relation to climate change. This aims at pursuing the transition to a climate resilient, biodiversity rich and climate neutral economy by no later than the end of the year 2050. Ireland's Climate Action Plan 2023 sets out Ireland's national and sectoral targets in this regard.

⁶⁰ Wild Atlantic Way, Dublin's a Breath of Fresh Air, Ireland's Ancient East and Ireland's Hidden Heartlands



Future changes in climate and associated impacts on sea level, rainfall patterns/intensity and river flow will influence flooding frequency and extent in the future. Local Authorities in compliance with the Regional Planning Guidelines are attempting to adopt sustainable flood risk strategies in areas likely to be at risk of flooding in the future in the context of climate change and changing weather patterns. Changes to climate could lead to an increase in flooding events in Ireland. The OPW has undertaken a number of Flood Risk Management Studies for different River Basin Districts (RBDs) in Ireland. These studies have identified the areas which are most at risk and future management plans have been advised; these are adopted by the OPW. In some cases, mitigation measures will involve the construction of physical flood defences. The SEA has considered data related to climate from the following sources:

- CFRAM Studies⁶¹
- Department of the Environment, Climate and Communications
- EPA

4.12.1 Key Considerations relating to the Draft Strategy

The key considerations in relation to Climate Change are as follows:

 The Draft Strategy will contribute to the targets, set out in the Climate Action Plan 2023. SEA processes can be utilised to maximise positive climate effects associated with the Strategy.

4.13 Constraints and Opportunities

The environmental baseline data was overlaid in raster form and ranked accordingly to produce an overall constraints and opportunities map for the Council's administrative boundary (Figure 4-19). The map was prepared using Geographical Information System (GIS) software that allowed for a weighting system to be applied with differentiation in certain layers as follows:

Vector Layer	Weighting	Rationale
SAC	1	Protected
SPA	1	Protected
NHA	1	Protected
pNHA	0.5	Not fully protected
Archaeological Heritage	1	Protected
WFD High	0.5	High quality most sensitive to perturbation
Wells and Springs	1	Protected
Groundwater High	1	High vulnerability most sensitive to perturbation
Salmonid Water	1	Protected

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⁶¹ Office of Public Works (2021) Catchment-based Flood Risk Assessment and Management (CFRAM) Programme gov.ie - <u>CFRAM Programme (www.gov.ie)</u>

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Where the mapping shows a concentration of environmental sensitivities there is an increased likelihood that development or activities supported by Strategy proposals will conflict with these sensitivities and cause environmental deterioration. However, the occurrence of environmental sensitivities does not preclude development or activities; rather it flags at a strategic level that the mitigation measures - which have been integrated into the Draft Strategy - will need to be complied with in order to ensure that the implementation of the Draft Strategy contributes towards environmental protection.

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4.14 Evolution of the Baseline Environment Without the Implementation of the Strategy

The SEA Directive requires that consideration is given to the likely evolution of the baseline environment in the event the Draft Strategy is not progressed and implemented. In the event the Draft Strategy was not implemented; the baseline environment in Cork City would primarily evolve in line with local plans and policies currently being implemented for the area (e.g., the Cork City Development Plan 2022-2028, the Cork City Local Authority Climate Action Plan 2024 - 2029, the Cork City Heritage and Biodiversity Plan).

These local plans and policies are predicted to align with high-level policy defined in the national plans such as the National Planning Framework or the national Climate Action Plan (CAP24), and regional policy defined in the Southern Regional Spatial & Economic Strategy, for example. These higher order plans are predicted strongly influence the land use planning framework and environmental conditions in Cork City. These plans will support the transition to a low-carbon and climate-resilient society generally, including the transition to alternative fuel vehicles in particular, active travel development, compact growth and transport sector decarbonisation.

Traffic and transport conditions in Cork City will evolve in line with the Cork Metropolitan Area Transport Strategy 2040 which aims to deliver an accessible, integrated transport network in the Cork Metropolitan Area. This Draft Strategy supports a variety of sustainable transport and travel initiatives such as the development of transport mobility hubs and strategic park and ride facilities.

Not progressing the more focussed and community specific set of EV charging infrastructure development proposals defined in the Draft Strategy would present several significant lost opportunities. The Draft Strategy provides a greater degree of focus and specificity in relation to the development of EV charging infrastructure in Cork City. A variety of likely positive environmental effects associated with the Draft Strategy implementation would not come to fruition (e.g., the better facilitation of a reduction in Internal Combustion Engine (ICE) based vehicle greenhouse gas (GHG) emissions, improvements in local air quality conditions). A number of potential adverse effects associated with the existing baseline scenario are more likely to continue to occur (existing ICE based vehicle emissions may be maintained or reduced more gradually in the context of Cork City - resulting in ongoing impacts on climate and local air quality). The likelihood of exceedances of ambient air quality standards in the City due to vehicle emissions in congested areas would be greater as a result.

In the event none of the proposals defined in the Draft Strategy are implemented, the expansion of the EV network in the city will have less express policy support. Promoting and facilitating a shift from ICE-based vehicle use to the use of electric vehicles in Cork City will have less express policy support.

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