

Figure 3.3 Potential Habitat Sensitivity

3.7 Material Assets

Introduction

Resources that are valued and that are intrinsic to specific places are called 'material assets'.

Material Assets relevant to this SEA include:

- Built/amenity assets and infrastructure;
- Land; and
- Waste management.

Material assets other than those detailed below that are covered by this SEA include archaeological and architectural heritage (see Section 3.10) natural resources of economic value, such as water and air (see Sections 3.8 and 3.4)

Built/Amenity Assets and Infrastructure

Built/amenity assets and infrastructure which have the potential to be impacted upon by the development of transport infrastructure, if unmitigated, include public open spaces, parks and recreational areas, public buildings and services, housing and utility infrastructure (electricity, gas, telecommunications, water supply, wastewater infrastructure etc.). These resources are generally located within the immediate outskirts of urban/suburban areas.

Land

The development of transport infrastructure and services has the potential to enable the reuse and regeneration of brownfield sites thereby contributing towards sustainable mobility and reducing the need to develop greenfield lands and associated adverse environmental effects. Brownfield lands are generally located within urban/suburban areas.

Waste Management

Any construction waste arising from the development of infrastructure is required to be dealt with in compliance with relevant EU and National waste management policy, including that relating to the waste hierarchy of prevention, recycling, energy recovery and disposal.

For the purposes of waste management planning, Ireland is divided into three regions: Southern, Eastern-Midlands and Connacht-Ulster. Waste management plans for each waste management region were published in 2015.

The 2016 EPA Report "*Ireland's Environment - An Assessment 2016*" identifies that 11.91 Mt of waste was generated in Ireland during 2014. Of this total, 23% was generated by municipal sources, 28% by construction and demolition sources and 49% by other sources such as industry and agriculture. The bulk of construction and demolition waste is made up of uncontaminated soil and stones, with the remainder segregated wastes such as rubble, concrete, bricks, glass, plastic, wood, metals and mixed construction and demolition waste.

Existing Problems

No existing problems relevant to the SEA relating to material assets were identified by the assessment.

3.8 Water

Water Framework Directive

Since 2000, Water Management in the EU has been directed by the Water Framework Directive 2000/60/EC (WFD). The WFD requires that all Member States implement the necessary measures to prevent deterioration of the status of all waters - surface, ground, estuarine and coastal - and protect, enhance and restore all waters with the aim of achieving *good status*.

For the purpose of assessment, reporting and management, water is divided into groundwater, rivers, lakes, estuarine waters and coastal waters which are in turn divided into specific, clearly defined water bodies.

Status of surface and ground waters

WFD Monitoring Programmes are undertaken in Ireland by the Environmental Protection Agency and in Northern Ireland by the Department of the Environment's Northern Ireland Environmental Agency. Overviews of the status for monitored waterbodies are published and made available online. The WFD defines surface water status as the general expression of the status of a body of surface water, determined by the poorer of its ecological status and its chemical status.

The most recent EPA assessment of water quality monitoring data in Ireland was undertaken for 2013-2015²¹. The 2013-15 status information shows 57% of river water bodies, 46% of lakes, 31% of transitional waters and 79% of coastal waters achieving "good" or "high" status. For groundwater, 91% of water bodies are at "good" status. Nationally the number of monitored river water bodies and lakes at "good" or "high" status appears to have declined by 4% since 2007-2009. However, this decline also masks an underlying trend of improvement and dis-improvement across monitored river water bodies and lakes since 2009²².

For groundwater bodies, the approach to classification is different from that for surface water. For each body of groundwater, both the chemical status and the quantitative status must be determined. Both have to be classed as either *good* or *poor*. The WFD sets out a series of criteria that must be met for a body to be classed as good chemical and quantitative status. Nationally, for groundwater, 91% of water bodies are at *good* status.

Groundwater within the Greater Dublin Area is generally identified as being of *good* status however there are some areas which are identified as being of *poor* status as a result of, for example, historical mining or industrial activities.

Groundwater productivity and vulnerability

The Geological Survey of Ireland (GSI) rates groundwaters according to both their vulnerability to pollution and their productivity.

Groundwater is most at risk where the subsoils are absent or thin and, in areas of karstic limestone, where surface streams sink underground at swallow holes²³. Groundwater vulnerability varies across the Greater Dublin Area. The most of County Kildare and north-west/south-west of County Meath are underlain by "High" and "Moderate" groundwater vulnerability. The south-east parts of County Meath, northern parts of County Fingal, coastal areas of County Wicklow and some pocket areas in County Kildare and surrounding Dublin City are having "Low" groundwater vulnerability. The Wicklow Mountains and upland areas within the Greater Dublin Area are generally identified as having either "Extreme" or "Extreme (Rock near surface)" vulnerability.

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. Ireland's entire land surface is divided into nine aquifer productivity classifications that encompass various types of regionally, locally important and poor aquifers. The aquifer underlying parts of north/north-east part of County Meath and west/south-west parts of County Kildare is classified as "regionally important aquifer (karstified bedrock)" with "regionally" and "locally important gravel aquifer" overlying in places.

WFD Registers of Protected Areas

The WFD requires that Registers of Protected Areas (RPAs) are compiled for a number of water bodies or part of water bodies which must have extra controls on their quality by virtue of how their waters are used by people and by wildlife. The WFD requires that these RPAs contain: areas from which waters are taken for public or private water supply schemes; designated shellfish production

²¹ Other sources of information from the EPA that are available for use in lower tier assessments include the Geoportal and Envision websites and reports including Water Quality in Ireland (various), Integrated Water Quality Reports (various) and Quality of Estuarine and Coastal Waters (various).

²² Department of Housing, Planning and Local Government (2018) River Basin Management Plan for Ireland 2018 - 2021

²³ Source: Geological Survey of Ireland (2014) Metadata

areas; bathing waters; areas which are affected by high levels of substances most commonly found in fertilizers, animal and human wastes - these areas are considered nutrient sensitive; areas designated for the protection of habitats or species e.g. Salmonid areas; Special Areas of Conservation (SACs); and, Special Protection Areas (SPAs). Entries to the RPAs in Ireland include:

- Drinking Water Rivers and Lakes;
- Nutrient Sensitive Rivers, Lakes and Estuaries;
- Shellfish Areas;
- Salmonid Rivers;
- Bathing Areas; and
- Groundwater for Drinking Water.

Bathing Waters

For bathing waters, Mandatory and Guide Values are set out for bathing waters in the 2006 EU Bathing Water Directive and transposing Regulations. Mandatory Values are values which must be observed if the bathing area is to be deemed compliant with the Directive. Compliance with Guide Values exceeds guidance with Mandatory Values and can be regarded as quality objectives which bathing sites should endeavour to achieve.

Potential Water Sensitivity

A potential water sensitivity map has been prepared as part of the SEA process. The purpose of the map is to indicate at a regional level where the main concentrations of water sensitivities might occur within and surrounding the Greater Dublin Area. Figure 3.4 shows areas with higher water sensitivities (indicated by darker orange colours), areas with moderate water sensitivities (indicated by yellow colours) and areas with lower water sensitivities (indicated with green colours). Sensitive rivers are generally found away from upland areas, draining lowland areas of settlement and agriculture. Heightened sensitivities arising from groundwater vulnerability and poor status data are found in much of County Wicklow, North-West and East Meath, Dublin County and central Kildare. Areas of sensitivity are also found in coastal areas.

Flooding

Flooding is an environmental phenomenon which, as well as causing economic and social impacts, could in certain circumstances pose a risk to human health. The existence of flood risk across the country is illustrated by various sources of information on historical flooding events – including those available from the Office of Public Works, the lead Authority on flooding in the country, National Flood Hazard Mapping website. In addition to this historic mapping there is predictive, modelled Preliminary Flood Risk Assessment and Flood Risk and Hazard mapping available from the OPW including through the National Catchment Flood Risk Management Programme (CFRAM). These mapping sources identify flood risk from various sources, including fluvial, pluvial, coastal and groundwater.

Existing Problems

Subject to exemptions provided for by Article 4 of the WFD, based on available water data, certain surface and groundwater bodies will need improvement in order to comply with the objectives of the WFD.

There are various bathing water locations across the country that do not meet mandatory bathing water values.

There is historic and predictive evidence of flooding in locations across the country.

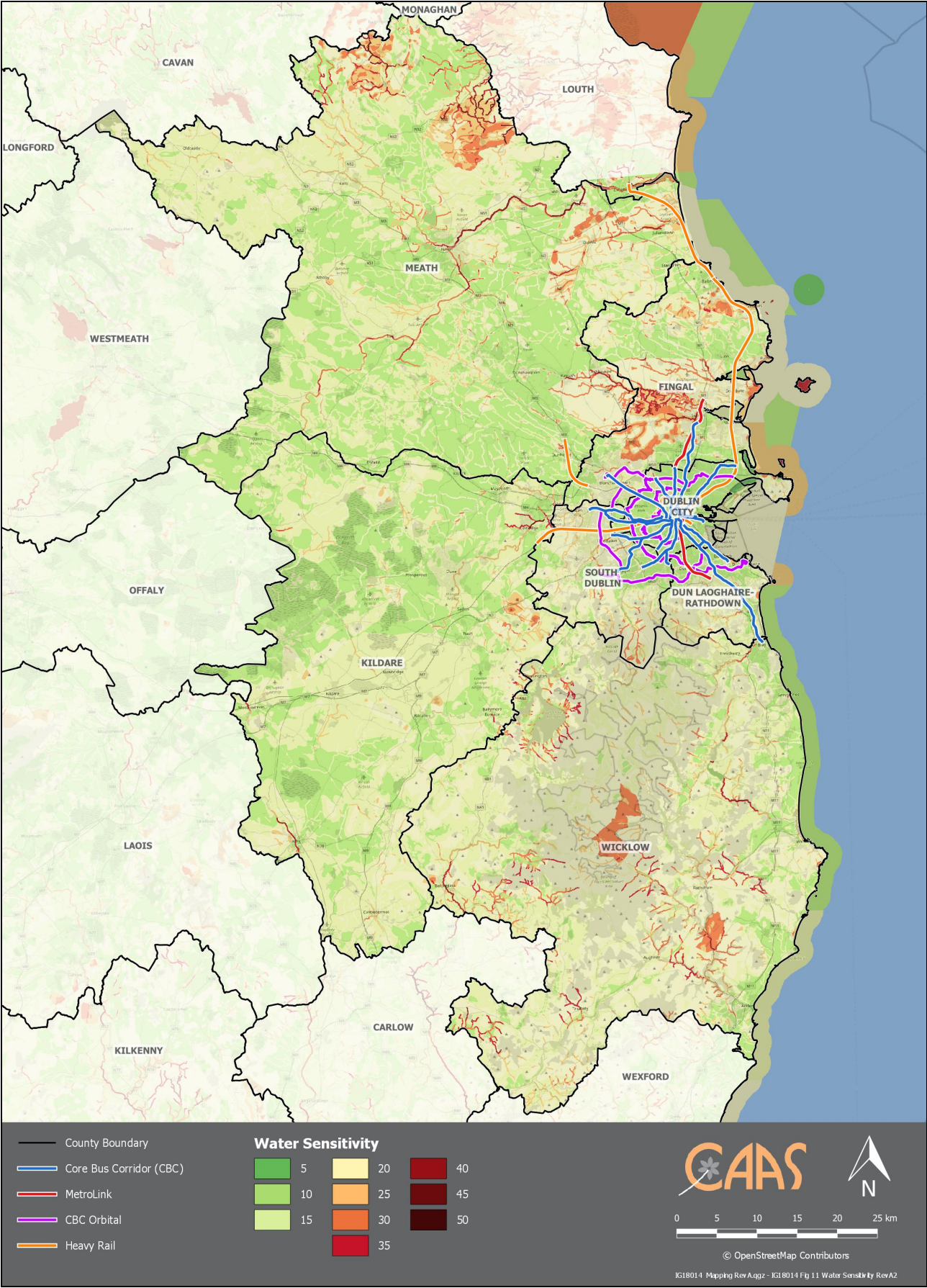


Figure 3.4 Overlay of Potential Water Sensitivity

3.9 Landscape

Landscapes are areas which are perceived by people and are made up of a number of layers: landform, which results from geological and geomorphological history; land cover, which includes vegetation, water, human settlements, and; human values which are a result of historical, cultural, religious and other understandings and interactions with landform and land cover.

Land cover is the observed physical cover, as seen from the ground or through remote sensing, including for example natural or planted vegetation, water and human constructions which cover the earth's surface.

Artificial surfaces in Ireland account for just under 2.46% of the land surface, significantly below the European Union average of 4.2% (European Environment Agency 2012 CORINE mapping).

The CORINE Land Cover map is based on interpretation of satellite images. Three categories of potential land cover sensitivity (normal, robust and sensitive) have been identified on Figure 3.5.

In the Greater Dublin Area, normal land cover is the predominant land cover type and is generally found throughout much of County Meath, County Kildare, County Wicklow and Dublin County. Robust land cover is found within and surrounding the M50 motorway and in pockets throughout the Greater Dublin Area. Sensitive land cover are most common in the Wicklow Mountain uplands/foothills, in bog areas in North-West Kildare and in coastal areas and parklands.

Existing Problems

New developments have resulted in changes to the visual appearance of lands over time however legislative objectives governing landscape and visual appearance were not identified as being conflicted with.

3.10 Cultural Heritage

Archaeological Heritage

Archaeology is the study of past societies through the material remains left by those societies and the evidence of their environment. Archaeological sites and monuments vary greatly in form and date; examples include earthworks of different types and periods, (e.g. early historic ringforts and prehistoric burial mounds), megalithic tombs from the Prehistoric period, medieval buildings, urban archaeological deposits and underwater features. Archaeological heritage is protected under the National Monuments Acts (1930-2004), Natural Cultural Institutions Act 1997 and the Planning Acts. There are thousands of known Recorded Monuments in Ireland.

Archaeological heritage designations in Northern Ireland include entries to the Northern Ireland Sites and Monuments Record and Areas of Significant Archaeological Interest and Archaeological Potential.

Clusters of monuments are indicated within already developed urban and suburban areas and in other locations.

A buffer of 250m (radius) has been applied to make these designations noticeable at the regional scale of the mapping produced. Where zones associated with the monuments have been provided by the National Monuments Service these have been used instead. National Monuments that are in State care are differentiated on the map. Monuments are concentrated within urban/suburban areas and are less common in areas which are not settled, most noticeably much of the Wicklow Mountains.

Architectural Heritage

The term architectural heritage is defined in the Architectural Heritage (National Inventory) and Historic Monuments Act 1999 as meaning all: structures and buildings together with their settings and attendant grounds, fixtures and fittings; groups of structures and buildings; and, sites which are of technical, historical, archaeological, artistic, cultural, scientific, social, or technical interest. Records of