

Section 3 The Environmental Baseline

3.1 Introduction

The environmental baseline, or the existing environment, in Dún Laoghaire-Rathdown is described in this section. This baseline together with the Strategic Environmental Objectives, which are identified in Section 3.13, is used in order to identify, describe and evaluate the likely significant environmental effects of implementing the Plan and in order to determine appropriate monitoring measures. The environmental baseline is described in line with the legislative requirements encompassing the following components – biodiversity, flora and fauna, population, human health, soil, water, air and climatic factors, material assets, cultural heritage, landscape and the interrelationship between these components. The lack of a centralised data source that could make all environmental baseline data for the Plan area both readily available and in a consistent format posed a challenge to the SEA process. This difficulty is one which has been encountered while undertaking SEAs at local authorities across the Country and was overcome by investing time in the collection of data from various sources and through the use of Geographical Information Systems.

3.2 Likely Evolution of the Environment in the Absence of the Plan

In the absence of a new Plan it is uncertain how permission for new development would be applied for and evaluated.

The 2010 County Development Plan has contributed towards environmental protection within Dún Laoghaire-Rathdown.

If the 2010 County Development Plan was to expire and not be replaced by a new Plan, this would result in a deterioration of the County's planning and environmental protection framework. Although higher level environmental protection objectives – such as those of various EU Directives and transposing Irish Regulations – would still apply, the deterioration of this framework would mean that new development would be less coordinated and controlled. Such development could result in an increase in the occurrence of adverse effects on all environmental components, especially those arising cumulatively. Cumulative effects occur as a result of the addition of many small impacts to create one larger, more significant, impact.

Such adverse effects could include:

- Loss of biodiversity in designated and non-designated sites
- Spatially concentrated deterioration in human health;
- Damage to the hydrogeological and ecological function of soil;
- Adverse impacts upon water bodies, including bathing waters;
- Increase in the risk of flooding;
- Failure to provide adequate and appropriate waste water treatment;
- Failure to comply with drinking water regulations and serve new development with adequate drinking water;
- Increases in waste levels;
- Failure to contribute towards sustainable transport and associated impacts;
- Effects on archaeological heritage;
- Effects on architectural heritage; and
- Occurrence of adverse visual impacts.

3.3 Biodiversity and Flora and Fauna

Dún Laoghaire-Rathdown supports a variety of natural and semi-natural habitats and a wide range of plant and animal species, which have come under threat due to development pressures and increased demand for new development land.

Green space, which makes up a large part of the southern portion of the County, consists of a variety of habitats including corridors which provide for the movement of wildlife. Green space within Dún Laoghaire-Rathdown is comprised of agricultural lands, bogs and heath in the uplands, woodlands, grasslands and a number of open spaces in residential areas. There are also a number of large parks within the County including Marlay Park, Deerpark, Cabinteely Park and Shanganagh Park.

The Loughlinstown River, with tributaries such as the Shanganagh River and the Cabinteely, Ballyogan and the Glenamuck Streams, forms the largest catchment in Dún Laoghaire-Rathdown. The southernmost branch of the River, also known as Brides Glen stream, is particularly rich in biodiversity. Trout, otter, and bats occur in the river while kingfisher may be present along sections of the stream. Other rivers supporting good areas of biodiversity include the Little Dargle which rises in Three Rock Mountain and flows through Marlay Park and the Glencullen River, which drains the uplands around Glendoo and Glencullen Mountains before crossing the County boundary into County Wicklow.

The County's coastline, including areas such as South Dublin Bay and the Dalkey Coastal Zone, provides a number of habitats for a variety of species. The Shanganagh Coastline represents a long stretch of the Killiney Bay shoreline, extending from Ballybrack to Bray in Wicklow. The area is important particularly for its sedimentary cliffs, displaying clear geological time sequences through the quaternary period. The shoreline also has an example of a drowned forest, visible in the sand only at extreme low tide.

The upland areas around Three Rock and Two Rock Mountains are valuable for their heath habitats and their exposed rocky outcrops. Red grouse, an upland bird species thought to be in decline across the Country, occurs in this area.

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

There are a number of areas designated within and adjacent to the Council's administrative area for ecological reasons. Two of the most important types of ecological designations are candidate Special Areas of Conservation and Special Protection Areas.

Candidate Special Areas of Conservation (cSACs) have been selected for protection under the European Council Directive on the conservation of natural habitats and of wild fauna and flora (92/43/EEC) due to their conservation value for habitats and species of importance in the European Union. The sites are *candidate* sites because they are currently under consideration by the Commission of the European Union. A total of 4 cSACs have been designated within/adjacent Dún Laoghaire-Rathdown as follow:

- South Dublin Bay cSAC;
- Ballyman Glen cSAC;
- Knocksink Wood cSAC; and
- Wicklow Uplands cSAC.

Special Protection Areas (SPAs) have been selected for protection under the 1979 European Council Directive on the Conservation of Wild Birds (79/409/EEC) - referred to as the Birds Directive - due to their conservation value for birds of importance in the European Union. A total of 3 SPAs have been designated within/adjacent Dún Laoghaire-Rathdown as follow:

- South Dublin Bay and River Tolka Estuary SPA;
- Dalkey Islands SPA; and
- Wicklow Mountains SPA.

Figure 3.1 shows the spatial distribution of the cSAC and SPA designations within and adjacent to the County. This map also shows the boundaries of surface water catchments (Water Management Units).

Stage 2 **Appropriate Assessment (AA)** has been undertaken alongside the preparation and adoption of the Plan. The requirement for AA is provided under the EU Habitats Directive (Directive 1992/43/EEC). The AA concluded that the Plan will not have a significant adverse effect on European Sites, and that the integrity of the European Sites, in view of their conservation interests, will not be adversely affected. The preparation of the Plan, SEA and AA has taken place concurrently and the findings of the AA have informed both the Plan and the SEA. Various policies and objectives have been integrated into the Plan through the AA process.

Natural Heritage Areas (NHAs) are designated due to their national conservation value for ecological and/or geological/geomorphological heritage. They cover nationally important semi-natural and natural habitats, landforms or geomorphological features, wildlife plant and animal species or a diversity of these natural attributes. NHAs are designated under the Wildlife (Amendment) Act 2000. Proposed NHAs were published on a non-statutory basis in 1995, but have not since been statutorily proposed or designated. **Proposed NHAs** in Dún Laoghaire-Rathdown are mapped on Figure 3.2 and include Booterstown Marsh pNHA, Ballybetagh Bog There are ten pNHA, Fitzsimon's Wood pNHA, Dingle Glen pNHA, Loughlinstown Wood pNHA and Dalkey Coastal Zone and Killiney Hill pNHA. South Dublin Bay SAC, Ballyman Glen SAC and Knocksink Wood SAC are also designated as pNHAs.

Figure 3.2 shows the spatial distribution of these pNHAs across the County.

Existing Problems

Previous developments such as residential and commercial developments, along with the provision of transportation infrastructure, have resulted in loss of biodiversity and flora and fauna across the County however legislative objectives governing biodiversity and fauna were not identified as being currently conflicted with.

The County Development Plan includes robust measures to contribute towards the protection of biodiversity and flora and fauna.

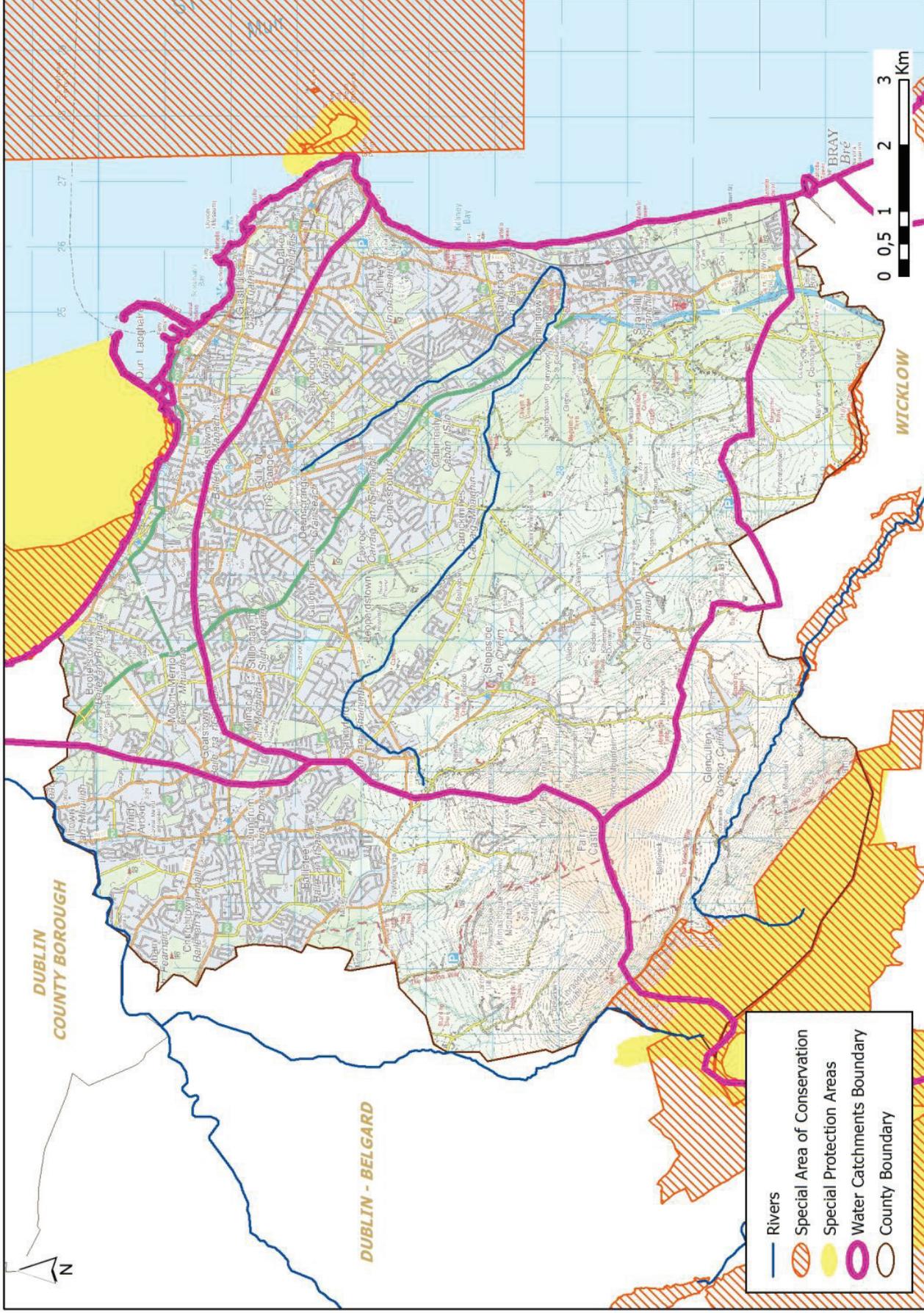


Figure 3.1 SPAs and cSACs with Water Management Units

Source: NPWS (datasets downloaded July, 2014)

CAAS for Dún Laoghaire-Rathdown County Council

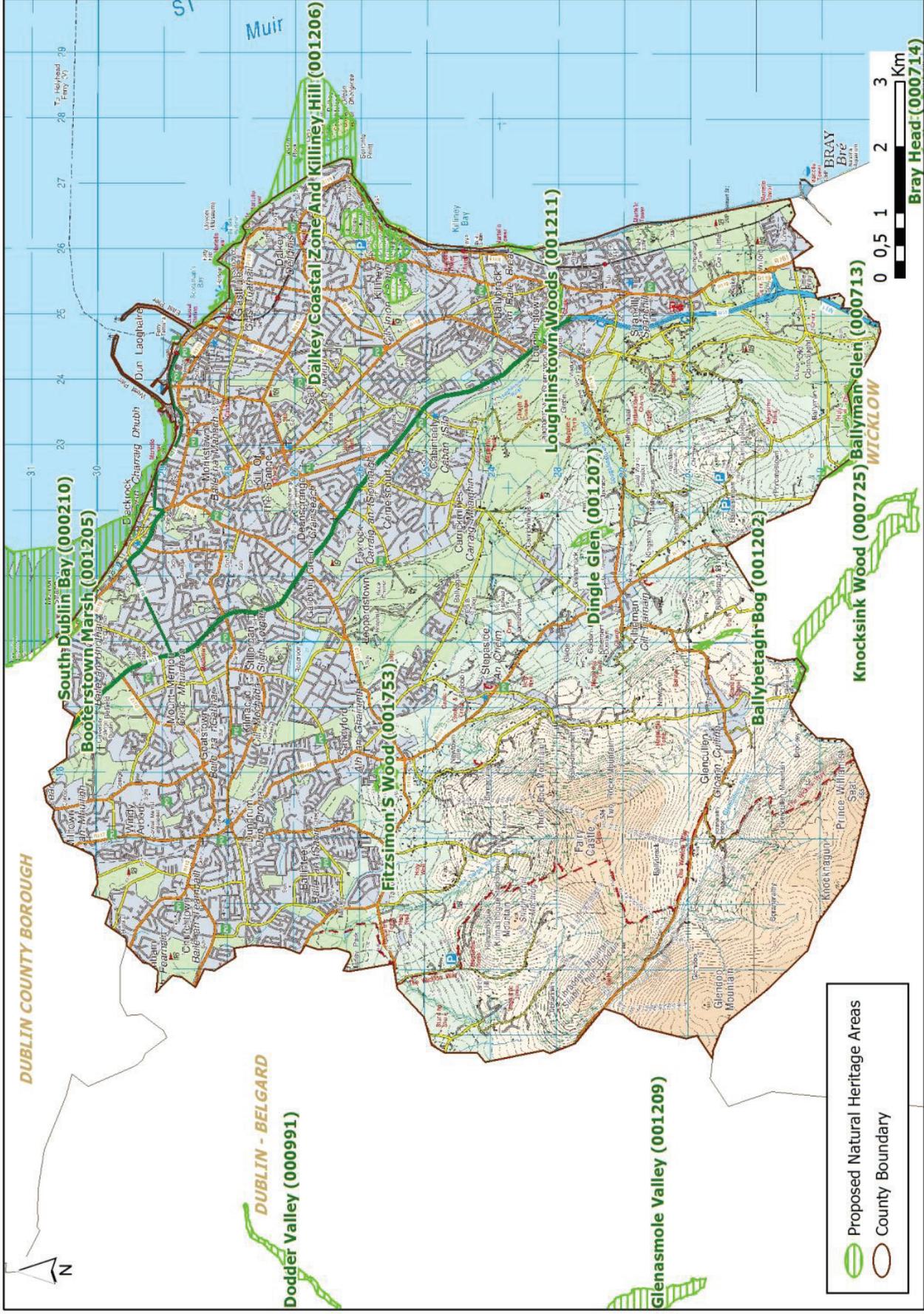


Figure 3.2 Proposed Natural Heritage Areas

Source: NPWS (datasets downloaded July 2014)

CAAS for Dún Laoghaire-Rathdown County Council

3.4 Population and Human Health

Population

Dublin has experienced strong population growth in recent years. Dublin's population increased from 1.18 million persons in 2006 to 1.27 million persons in 2011, an increase of more than 83,000 people (7%). Dún Laoghaire-Rathdown has experienced a share of this growth after a period of relatively low growth in the previous decade.

Dún Laoghaire-Rathdown has a current population of 206,261. This represents 16% of Dublin's population. The population grew by 12,223 persons or 6.3%, between 2006 and 2011, at a time when the National increase was 8.2%. This was a significant increase on the previous 10 years where the County grew by just 4,039 persons.

The 2011 Census highlighted a high percentage of 14.5% in the over 65 age category compared to the national average of 11.7%. According to the CSO, 23% of houses in the County have one occupant. In contrast, Dún Laoghaire-Rathdown has a lower percentage of population in the 0-14 age bracket of 18.2% compared to the National average of 21.3%.

A key feature of population change in the County has been the uneven distribution of growth, with some areas experiencing strong population growth and other areas experiencing stagnation or decline. The large Glencullen District Electoral Division, for example, grew by 10,661 persons or 29%¹.

Housing densities in the Plan area are high in the urban regions and comparatively low in the rural uplands. Spatial distribution of the population in the uplands is generally one-off housing, linear in parts. The majority of the population located in the lower-lying north, west, north, eastern and central parts of the Plan area.

Human Health

Human health has the potential to be impacted upon by environmental vectors (i.e. environmental components such as air, water or soil through which contaminants or pollutants, which have the potential to cause harm, can be transported so that they come into contact with human beings). Hazards or nuisances to human health can arise as a result of exposure to these vectors arising from incompatible adjacent land uses for example. These factors have been considered with regard to the description of: the baseline of each environmental component; and the identification and evaluation of the likely significant environmental effects of implementing the Plan.

Existing Problems

The greatest health risk from radiation in Ireland is caused by radon. The presence of radon gas, a naturally occurring radioactive gas that originates from the decay of uranium in rocks and soils, occurs across the country. It accounts for more than half of the total radiation dose received by the Irish population. As a known carcinogen, in the same category as tobacco smoke and asbestos it is a cause of lung cancer. Exposure to radon for long periods or at high concentrations can lead to lung cancer.

Some areas within Dún Laoghaire-Rathdown are estimated as having 5-15% of homes to be above the reference level for Radon (mapping available at <http://www.epa.ie/radiation/radonmap>).

There is historic and predictive evidence of flooding in various locations across the County (see information on Strategic Flood Risk Assessment at Section 3.6). All recommendations made by the SFRA and SEA in relation to flood risk management have been integrated into the Plan.

Compliance issues in relation to water services are detailed under Section 3.8.

¹ Source: CSO Census 2011

3.5 Soil

Soil Type

Soil types, as classified by Teagasc in co-operation with the Forest Service, EPA and GSI, are mapped on Figure 3.3. The biodiversity, flora and fauna described under Section 3.3 are facilitated by these soils. *Urban soils* make up the northern, most built-up section of the Plan area. The majority of the Plan area is covered by *grey brown podzols* with areas of *brown podzolics*, *peaty podzols* and *litosols* and *outcropping rock* existing as the Plan area extends to the south west.

Urban soils are soils which have been disturbed, transported or manipulated by human activity in the urban environment and are often overlain by a non-agricultural, man-made surface layer that has been produced by mixing, filling or by contamination of land surfaces in urban and suburban areas. *Urban soils* have a combination of characteristics that differ from natural soils. These characteristics are due to alterations in both physical and chemical soil properties that cause long term deviation from the natural state.

Grey brown podzolic soils are usually formed from a calcareous parent material, which counteracts the effects of leaching. Because of this, the podzolisation process is restricted and the principal materials translocated down the soil profile are the clay particles themselves. The lighter texture *grey brown podzolics* are good all-purpose soils, while the heavier textured members are highly suited to pasture production, responding well to manurial and management practices.

Brown podzolic soils are somewhat similar to the *podzols* and have been formed under the influence of the same process. They are less depleted than the *podzols* and the surface layer contains organic matter is intimately mixed with mineral matter. Because of their desirable physical characteristics, *brown podzolics* are often devoted extensively to cultivated cropping and pasture production. Their inherent low nutrient status is easily overcome by addition of lime and fertiliser.

Litosols are skeletal stony soils, usually overlying solid or shattered bedrock. They are often associated with *podzols* at higher elevations. Generally such soil areas have bare rock outcropping at frequent intervals and many also have steep slopes. Their use-range is usually limited to rough grazing.

Geological Heritage Sites

Sites of Geological Interest within the County were identified in a submission made by the Geological Survey of Ireland as part of the Plan preparation process as follows: Ballybetagh Bog; Ballycorus; Balackrock Breccia; Carrickgollogan; Dalkey Hill; Dalkey Island; Killeny Hill; Murphystown Quarry; The Scalp; Three Rock Mountain; and White Rock Killarney.

Contaminated Soil

Given the urban nature of the County and the range of land use activities which have taken place historically, soils have been contaminated in the past. Such contamination has the potential to affect water quality, biodiversity and flora and fauna and human health. The County Development Plan requires that where brownfield redevelopment is proposed, adequate and appropriate investigations are carried out into the nature and extent of any soil and groundwater contamination and the risks associated with site development work.

Existing Problems

Legislative objectives governing soil were not identified as being conflicted with.

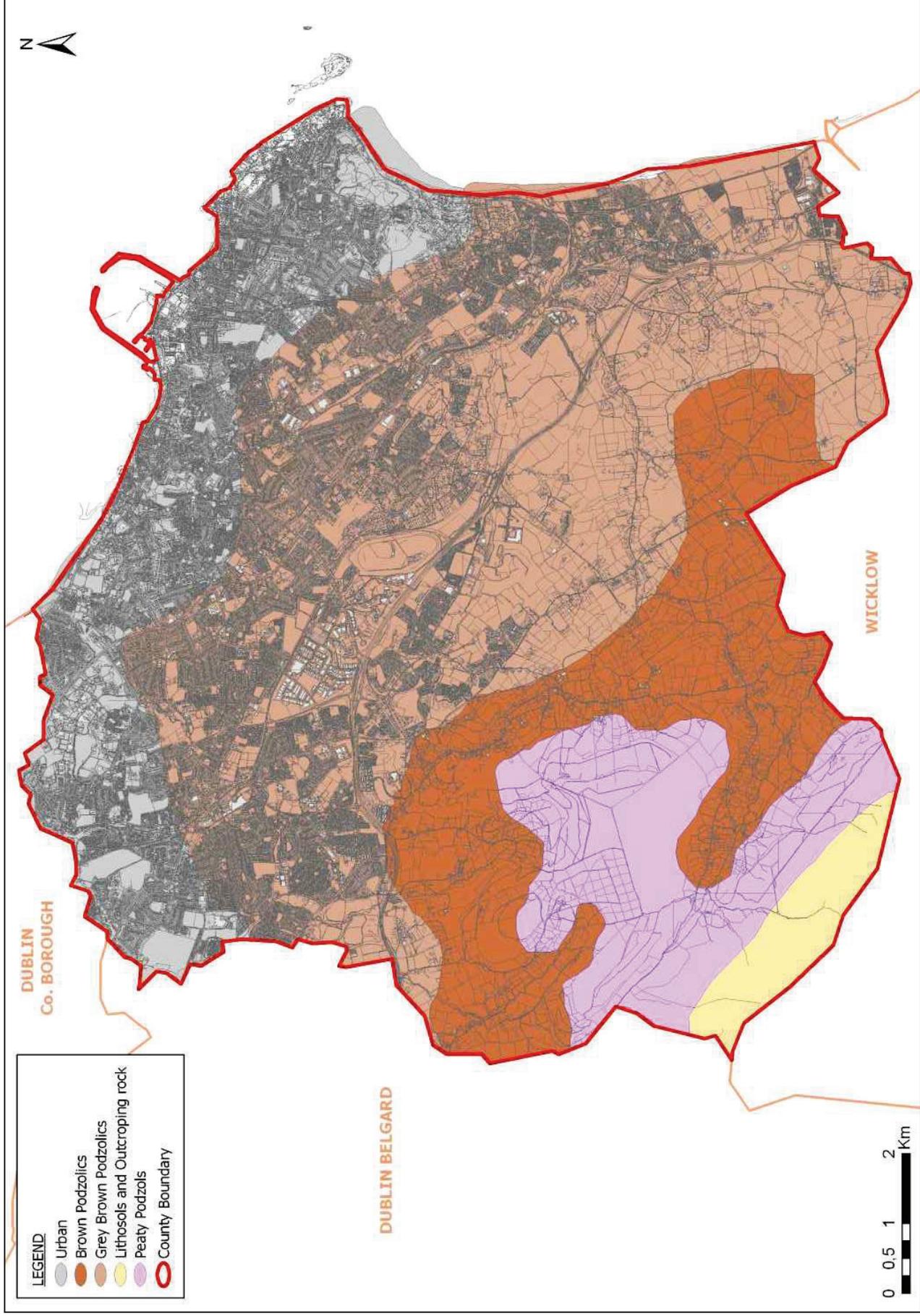


Figure 3.3 Soil Types

Source: Teagasc, GSI, Forest Service & EPA (2006) *Soil Type*

CAAS for Dún Laoghaire-Rathdown County Council

3.6 Water

Potential Pressures on Water Quality and the Water Framework Directive

Human activities, if not properly managed, can cause deterioration in water quality. Pressures exerted by human activities include the following: sewage and other effluents discharged to waters from point sources, e.g. pipes from treatment plants; discharges arising from diffuse or dispersed activities on land; abstractions from waters; and structural alterations to water bodies. 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". All public bodies are required to coordinate their policies and operations so as to maintain the good status of water bodies which are currently unpolluted and improve polluted water bodies to good status. Ireland has been divided into eight river basin districts or areas of land that are drained by a large river or number of rivers and the adjacent estuarine / coastal areas. Dún Laoghaire-Rathdown falls within the Eastern River Basin District for which a Management Plan and associated Programme of Measures is being implemented.

WFD Surface Water Status

Figure 3.4 illustrates currently available from the EPA² on the status of rivers within and surrounding Dún Laoghaire-Rathdown. These status classifications are contributed towards by the morphological pressures (pressures associated with the shape of the river's channel overtime) found along these often urban waterbodies such as culverts, river straightening and bed/bank reinforcement. The River Dodder is identified as being of *poor* status along the northern boundary of the Plan area. The Glencullen River is identified as being of *good* status in the south of the Plan area. The Carrickmines Stream is identified as being of *moderate* status before it joins the Loughlinstown (or Shanganagh) River at Loughlinstown. The Loughlinstown River is identified as being of *good* status upstream of Loughlinstown and of *poor* status downstream of Loughlinstown, after it joins with the Carrickmines Stream.

Figure 3.5 illustrates currently available from the EPA on the status of coastal waters within and surrounding the Plan area. Coastal waters are generally of *moderate* status to the north of Sorrento Point and *high* status to the south of Sorrento Point. The *moderate* status to the north of Sorrento Point is contributed towards by the morphological pressures (pressures associated with the shape of the coastline and sea bed overtime) found along this urban coastline including built structures, port tonnage and coastal defences. An area to the east of Sorrento Point is not monitored.

WFD Groundwater Status

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 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. All of the County's groundwater is *good* status, meeting the requirements of the WFD (see Figure 3.6).

Flooding

Flooding is an environmental phenomenon which, as well have causing economic and social impacts, could in certain circumstances pose a risk to human health. In 2009 the Department of the Environment, Heritage and Local Government published *The Planning System and Flood Risk Management* Guidelines for Planning Authorities. These are aimed at ensuring a more consistent, rigorous and systematic approach which will fully incorporate flood risk assessment and management into the planning system. Planning authorities are required to undertake flood risk identification, assessment and management processes as appropriate when preparing Development Plans and other plans and in the consideration of applications for planning permission. In compliance with the aforementioned Guidelines, a Strategic Flood Risk Assessment (SFRA) has been undertaken alongside the preparation of the new County Plan.

² Dataset downloaded November 2013.

The existence of flood risk within the County is illustrated by the mapping of locations of the most significant recent flooding events - accessible from the Office of Public Works (OPW) National Flood Hazard Mapping website - which is provided at Figure 3.7.

Existing Problems

Subject to exemptions provided for by Article 4 of the WFD³, based on available water data, certain surface water bodies within the County will need improvement in order to comply with the objectives of the WFD:

- The River Dodder is identified as being of *poor* status along the northern boundary of the Plan area.
- The Carrickmines Stream is identified as being of *moderate* status before it joins the Loughlinstown (or Shanganagh) River at Loughlinstown.
- The Loughlinstown River is identified as being of *good* status upstream of Loughlinstown and of *poor* status downstream of Loughlinstown, after it joins with the Carrickmines Stream.

Note that these classifications in the County are contributed towards by the morphological pressures (pressures associated with the shape of the river's channel overtime) found along these often urban waterbodies such as culverts, river straightening and bed/bank reinforcement.

- Coastal waters are generally of *moderate* status to the north of Sorrento Point.

Note that this *moderate* status classification is contributed towards by the morphological pressures (pressures associated with the shape of the coastline and sea bed overtime) found along this urban coastline including built structures, port tonnage and coastal defences.

The Eastern River Basin District Management Plan and associated Programme of Measures include provisions to help ensure that these water bodies meet the objectives of the WFD. The Plan will contribute towards the achievement of the objectives of this Management Plan.

There is historic and predictive evidence of flooding in various locations across the County. All recommendations made by the SEA and SFRA in relation to flooding risk management have been integrated into the Plan.

³ Article 4 of the WFD sets out various exemptions for deterioration in status caused as a result of certain physical modifications to water bodies. This is provided: all practicable mitigation measures are taken; there are reasons of overriding public interest or the benefits to human health, safety or sustainable development outweigh the benefits in achieving the WFD objective; there are no better alternatives; and the reasons for the physical modification are explained in the relevant river basin management plan.

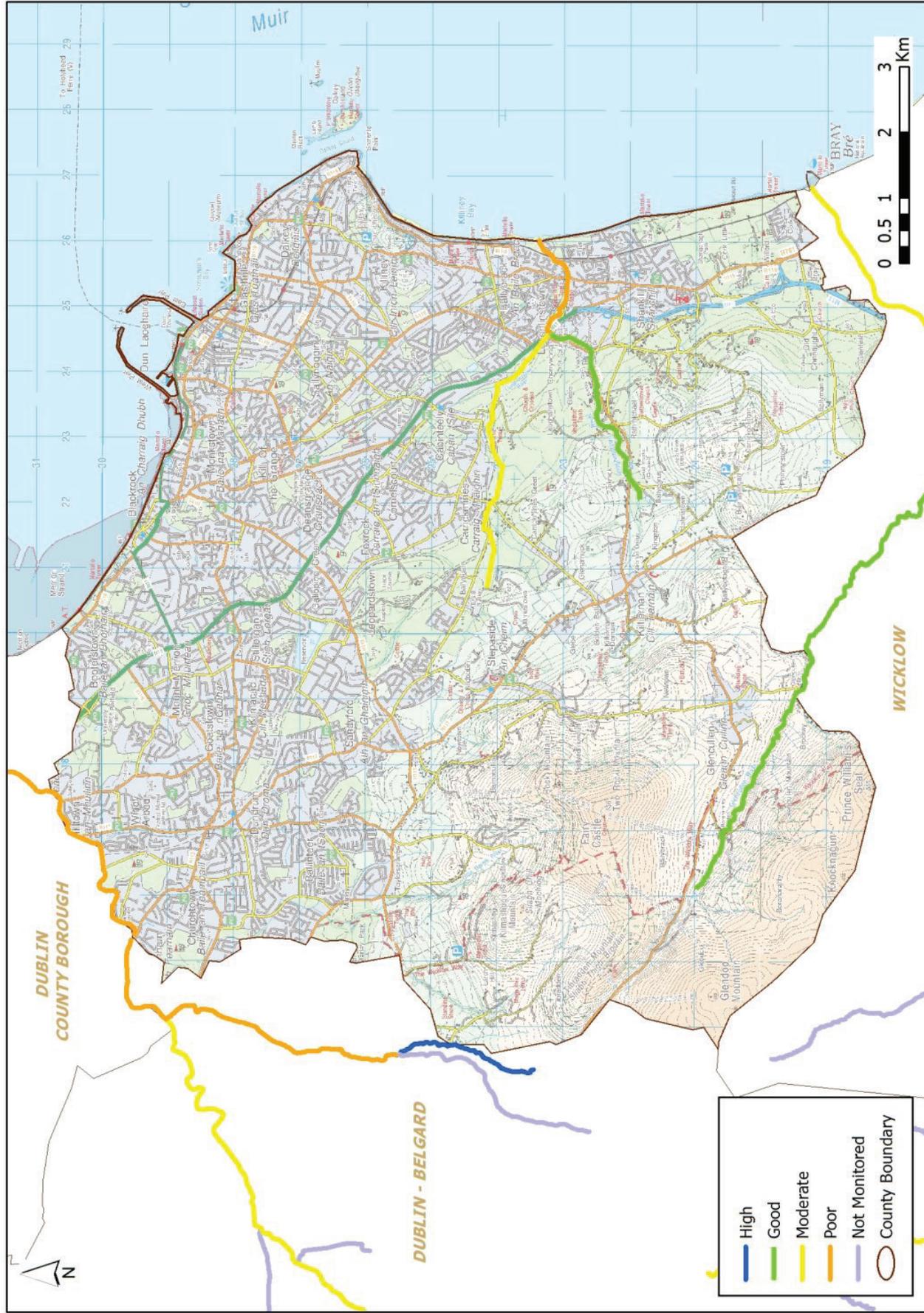


Figure 3.4 WFD Status of Rivers

Source: EPA (2011)

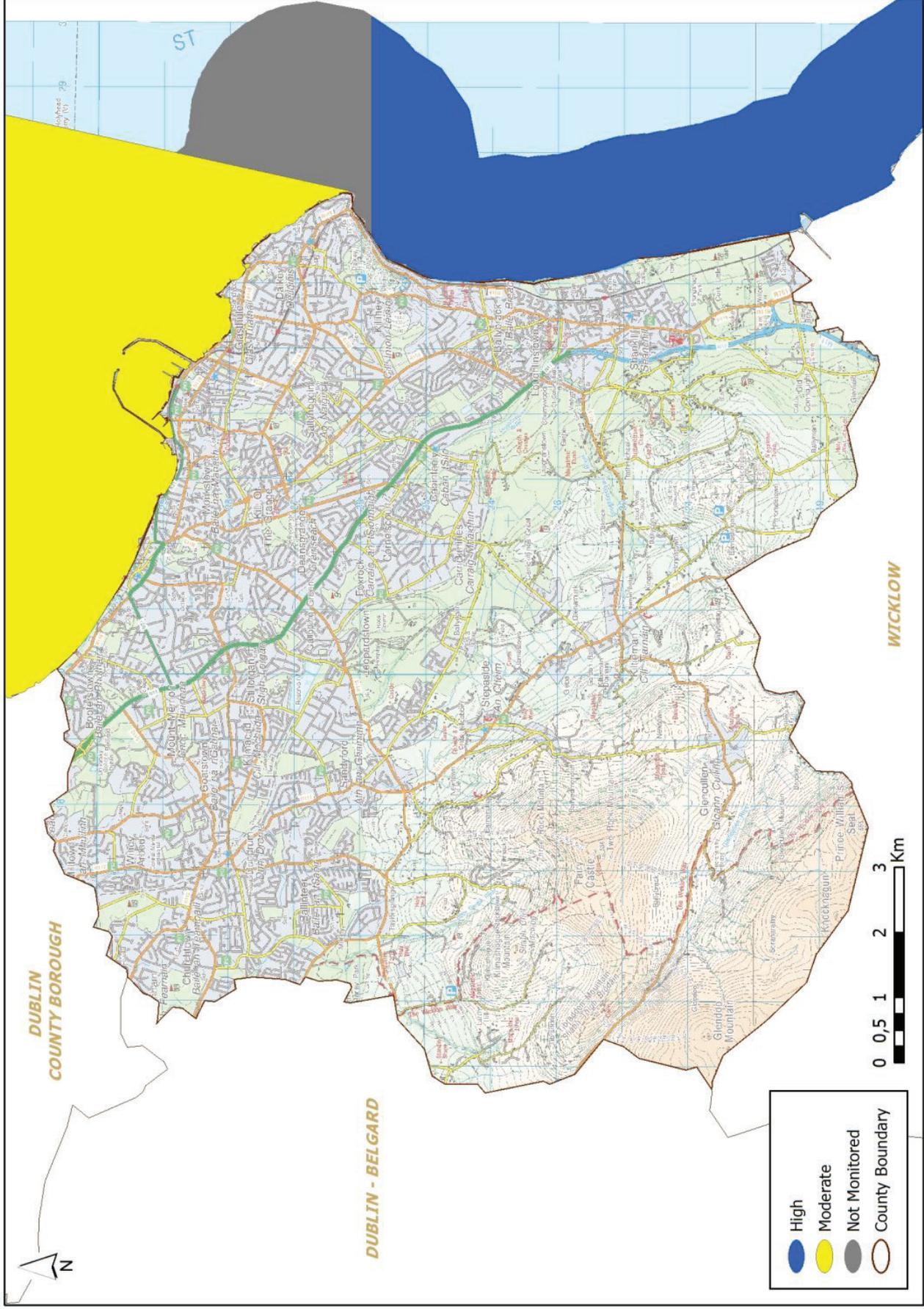


Figure 3.5 WFD Status of Coastal Waters

Source: EPA (2011)

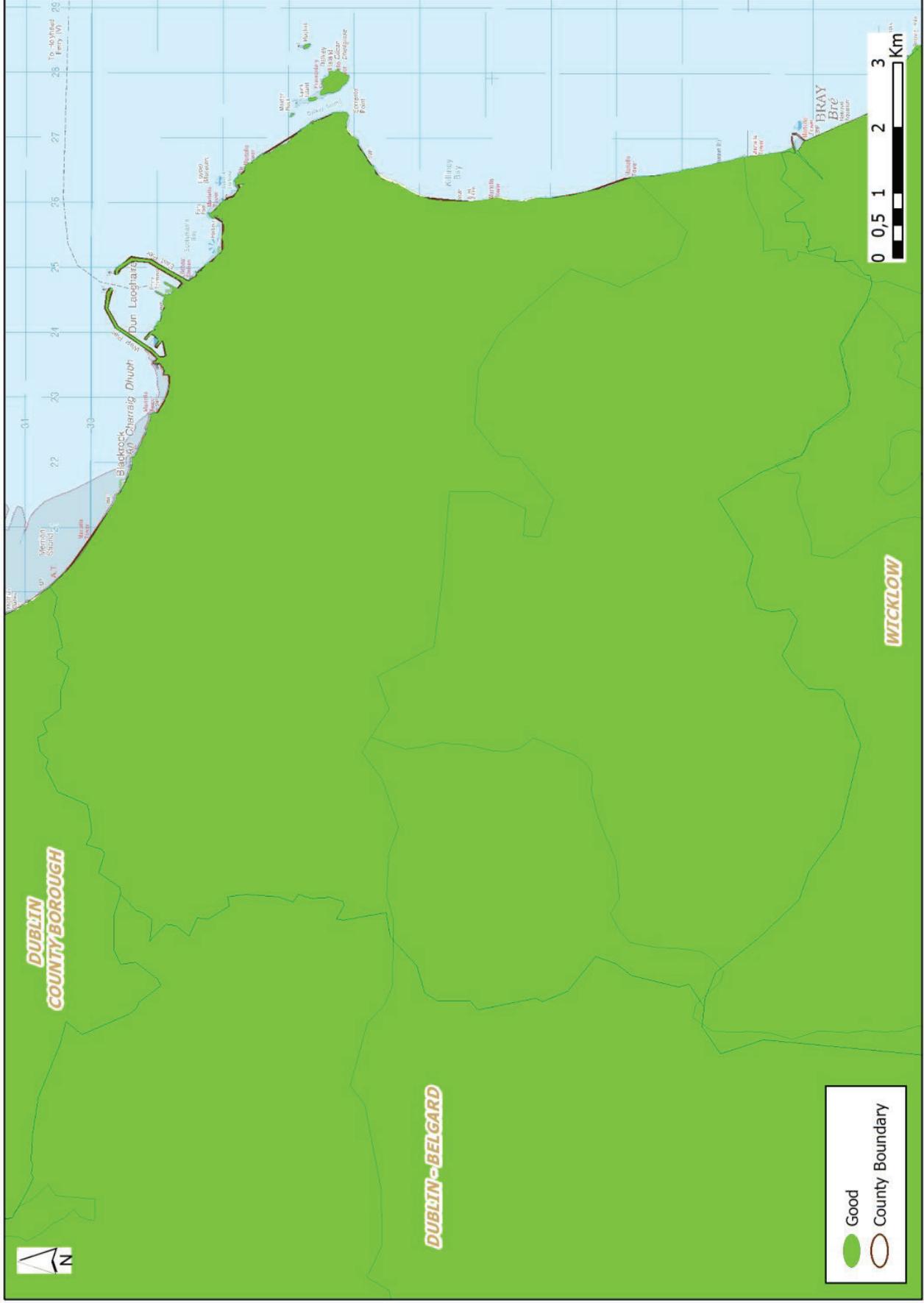


Figure 3.6 WFD Status of Groundwater
Source: EPA (2011)

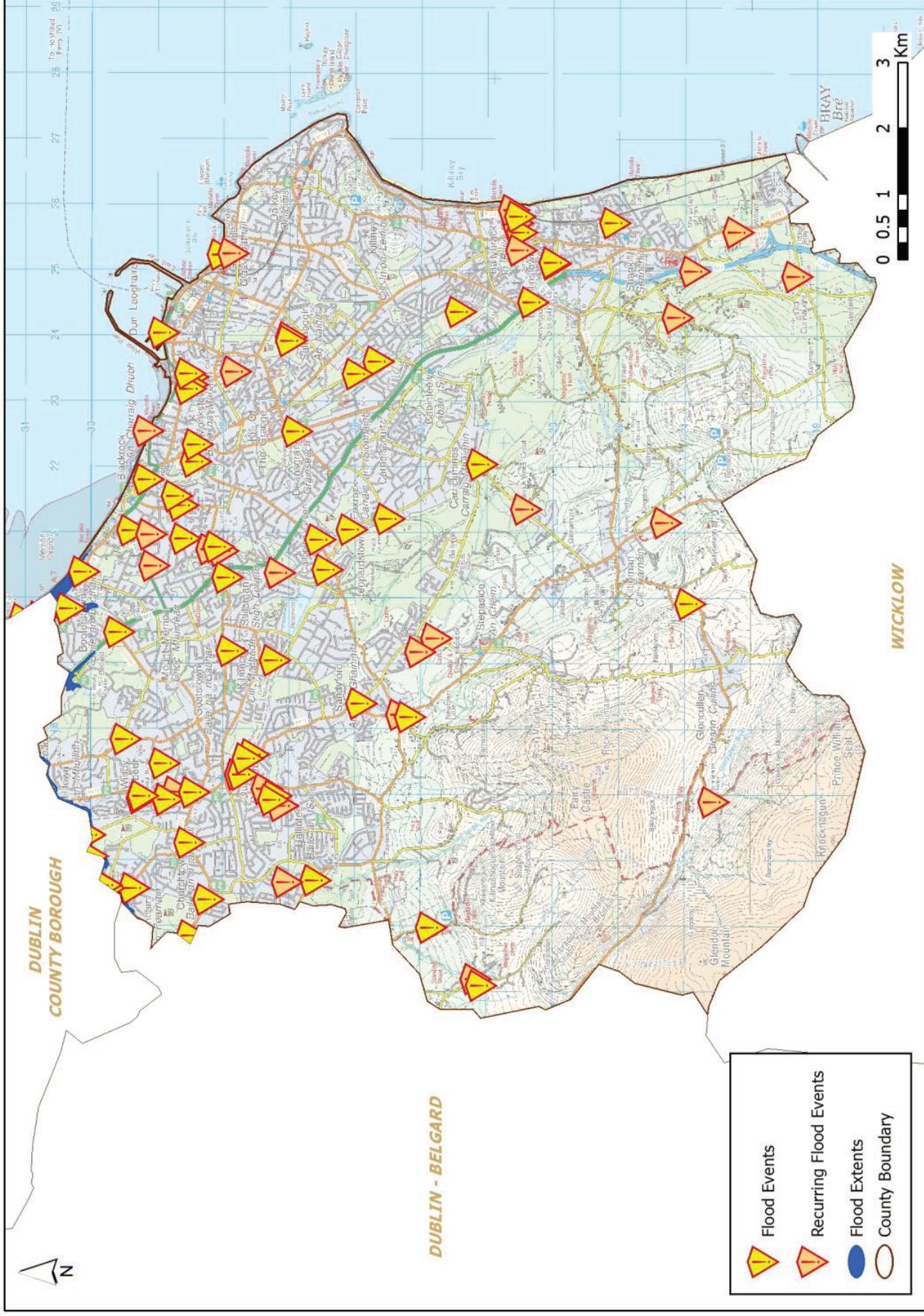


Figure 3.7 OPW Flood Events
Source: OPW (various)

3.7 Air and Climatic Factors

Ambient Air Quality

In order to protect human health, vegetation and ecosystems, EU Directives set down air quality standards in Ireland and the other Member States for a wide variety of pollutants. These pollutants are generated through fuel combustion, in space heating, traffic, electricity generation and industry and, in sufficient amounts, could affect the well-being of the areas inhabitants. The EU Directives include details regarding how ambient air quality should be monitored, assessed and managed.

In order to comply with air quality standards directives, the EPA measures the levels of a number of atmospheric pollutants. For the purposes of monitoring in Ireland, four zones are defined in the Air Quality Standards Regulations 2002 (SI No. 271 of 2002). Dún Laoghaire-Rathdown falls into zone A. Current air quality in Zone A is "good". The EPA's (2015) Air Quality in Ireland 2014 identifies that, overall, air quality in Ireland compares favourably with other EU Member States and continues to be of good quality relative to other EU countries.

Noise - The Environmental Noise Directive

Noise is unwanted sound. The Environmental Noise Regulations (SI No. 140 of 2006) transpose into Irish law the EU Directive 2002/49/EC relating to the assessment and management of environmental noise, which is commonly referred to as the Environmental Noise Directive or END. The END defines a common approach intended to avoid, prevent or reduce on a prioritised basis the harmful effects, including annoyance, due to exposure to environmental noise. The END does not set any limit value, nor does it prescribe the measures to be used in the action plans, which remain at the discretion of the competent authorities. Limit values are left to each member state. At this point in time, Ireland does not have any statutory limit values.

Climatic Factors

The key issue involving the assessment of the effects of implementing the plan on climatic factors relates to greenhouse gas emissions arising from transport. It is noted that the Plan contains a number of actions which respond to potential threats to environmental components arising from a changing climate. Flooding - see Section 3.6 - is influenced by climatic factors and the implications of climate change with regard to flood risk have been integrated into the recommendations which have been integrated into the Plan. There are emerging objectives relating to climate adaptation and that there is likely to be future Guidance for climate change proofing of land use plan provisions as is flagged in the National Climate Change Adaptation Framework (DECLG, 2012). Some of these objectives might relate to green infrastructure which can achieve synergies with regard to the following:

- Provision of open space amenities;
- Sustainable management of water;
- Protection and management of biodiversity;
- Protection of cultural heritage; and
- Protection of protected landscape sensitivities.

In 2009, Ireland's greenhouse gas emissions decreased across all sectors due to the effects of the economic downturn with a decline in total emissions of 7.9 per cent. In 2010, Ireland's emissions fell by a further 0.7 per cent. Ireland's emissions profile has changed considerably since 1990, with the contribution from transport more than doubling and the share from agriculture reducing since 1998.

Ireland's emissions profile has changed considerably since 1990, with the contribution from transport more than doubling and the share from agriculture reducing since 1998. Travel is a source of:

1. Noise;
2. Air emissions; and
3. Energy use (39% of Total Final Energy Consumption in Ireland in 2012 was taken up by transport, the largest take up of any sector)⁴.

⁴ Sustainable Energy Ireland (2014) *Energy in Ireland 1990 – 2012*

Land-use planning contributes to what number and what extent of journeys occur. By addressing journey time through land use planning and providing more sustainable modes and levels of mobility, noise and other emissions to air and energy use can be minimised. Furthermore, by concentrating populations, greenfield development - and its associated impacts - can be minimised and the cost of service provision can be reduced.

Between 2008 and 2011, Ireland's greenhouse gas emissions decreased across all sectors due to the effects of the economic downturn with emissions falling by 15.2% between 2008 and 2011. However, 2012 saw emissions rise by 1.2% when compared with 2011⁵.

Maximising sustainable mobility will help Ireland meet its emission target for greenhouse gases under the 2020 EU Effort Sharing target which commits Ireland to reducing emissions from those sectors that are not covered by the Emissions Trading Scheme (e.g. transport, agriculture, residential) to 20% below 2005 levels.

Existing Problems

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

3.8 Material Assets

Introduction

Since January 2014 Dún Laoghaire-Rathdown County Council no longer has any direct control in relation to the provision of water or waste water services. The delivery, integration and implementation of strategic water and waste water projects and infrastructural improvements are now the responsibility of the newly established State body 'Irish Water'. The Council commit to working closely with Irish Water to ensure that the Plan continues to align with both the National Spatial Strategy and the Regional Planning Guidelines and that the provision of water/waste water services will not be a limiting factor in terms of forecasted growth.

Waste Water

The Shanganagh Waste Water Treatment Plant is the only treatment plant in the County's administrative area. It provides full secondary treatment for waste water from Shanganagh and Bray. Waste water performance information published by the EPA identified that the Shanganagh waste water treatment plant passed all mandatory Waste Water Treatment Directive related requirements during 2014.

The Dublin City Council operated Ringsend waste water treatment plant provides secondary and tertiary treatment. The waste water treatment plant in Ringsend failed to meet mandatory Waste Water Treatment Directive related quality standards for phosphorus and nitrogen set in the Directive during 2014⁶.

Drinking Water

Compliance with the drinking water requirements is determined by comparing the results of analyses submitted by water suppliers to the standard for 48 parameters specified in the European Communities (Drinking Water) Regulations (No. 2), 2007. To ensure that these standards are met, each water supply must be monitored on a regular basis.

⁵ EPA (2014) *Ireland's Greenhouse Gas Emissions in 2012*

⁶ EPA (2015) *Focus on Urban Waste Water Treatment in 2014*

The EPA's 'The Provision and Quality of Drinking Water in Ireland' (EPA, 2012) Reports identify that microbiological compliance levels in Public Water Supplies in Dún Laoghaire-Rathdown were 100% in both 2011 and 2012. Chemical compliance levels decreased from 100% in 2011 to 99.7% in 2012.

Under Section 58 of the Environmental Protection Agency Act 1992 the EPA is required to collect and verify monitoring results for all water supplies in Ireland covered by the European Communities (Drinking Water) Regulations, 2000. The EPA publishes their results in annual reports which are supported by Remedial Action Lists (RALs). The RAL identifies water supplies which are not in compliance with the Regulations mentioned above.

The most recent EPA Remedial Action List (Q4 of 2015) identified one water supply within the County (Roundwood) in need of improvement with respect to treatment and management issues. The Remedial Action List identifies "Replacement of Callow Hill Tunnel, use of covered storage reservoir and upgrade of disinfection system" for solving these issues.

Waste

The total collected and brought household waste in Dún Laoghaire-Rathdown in 2012 amounted to 66,453(t). This is a reduction on 2011 figures where 66,707 (t) was collected and brought⁷.

Transport

In terms of trips to work, school and college, walking travel mode share in Dún Laoghaire-Rathdown is below the Greater Dublin Area (GDA) average, cycling is higher than the GDA average, while overall public transport usage is also above the GDA average. The car, however, remains the dominant mode of transport with 54% of trips being undertaken by this mode (including car passengers).

Existing Problems

There are a number of challenges with respect to water services which are outlined above. The provisions of the new Plan 2016-2022 will contribute towards protection of the environment with regard to impacts arising from material assets.

3.9 Cultural Heritage

Archaeological Heritage

Dún Laoghaire-Rathdown's archaeological heritage is protected under the National Monuments Acts (1930-2004), Natural Cultural Institutions Act 1997 and the Planning Acts. The Record of Monuments and Places (RMP) is an inventory, established under Section 12 of the National Monuments (Amendment) Act 1994, of sites and areas of archaeological significance, numbered and mapped. The RMP includes all known monuments and sites of archaeological importance dating to before 1700 AD, and some sites which date from after 1700 AD.

In Dún Laoghaire-Rathdown, there are approximately 400 items on the RMP, with a Zone of Archaeological Potential identified around each monument. There are more entries to the RMP in the rural, south eastern parts of the Plan area though clusters exist at Dalkey Island and at Dalkey. Clusters also exist west of Loughlinstown and at Glencullen and also at Kilmashogue Mountain in the west of the Plan area. Figure 3.8 shows the spatial distribution of entries to the RMP.

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.

The Record of Protected Structures (RPS) is legislated for under the Planning and Development Acts 2000-2010. Protected Structures are defined as structures, or parts of structures that are of special

⁷ EPA (2014) National Waste Report 2012

interest from an architectural, historical, archaeological, artistic, cultural, scientific, social or technical point of view.

There are currently in excess of 2,000 Protected Structures within the County. These structures include harbours, piers, boat slips, bridges, quarries, Martello Towers, Victorian terraces, Georgian houses, public buildings, street furniture, churches, castles, schools, yacht clubs and a range of domestic architecture. Current entries to the RPS are mapped on Figure 3.9.

The Planning and Development Acts 2000-2010 provide the legislative basis for the protection of areas known as Architectural Conservation Areas (ACAs). An ACA is a place, area or group of structures or townscape which is of special architectural, historical, archaeological, artistic, cultural, scientific, social or technical interest or value, or contributes to the appreciation of protected structures, whose character it is an objective to preserve in a development plan.

Dún Laoghaire-Rathdown has 26 designated ACAs which range from groups of artisan and estate workers cottages, planned residential Victorian squares to large areas of residential suburbs and villages. The ACAs include:

- Ballally Cottages
- Castle Cottages
- Dalkey
- Dún Laoghaire Central
- Foxrock
- Haigh Terrace to Park Road
- Killiney
- Monkstown
- Montpelier Place, Temple Hill
- Moss Cottages
- Newtown Villas
- Pembroke Estate Cottages
- Sandycove
- Silchester Road
- Vico Road

Existing Problems

The context of archaeological and architectural heritage has changed over time within Dún Laoghaire-Rathdown however no existing conflicts with legislative objectives governing archaeological and architectural heritage have been identified.

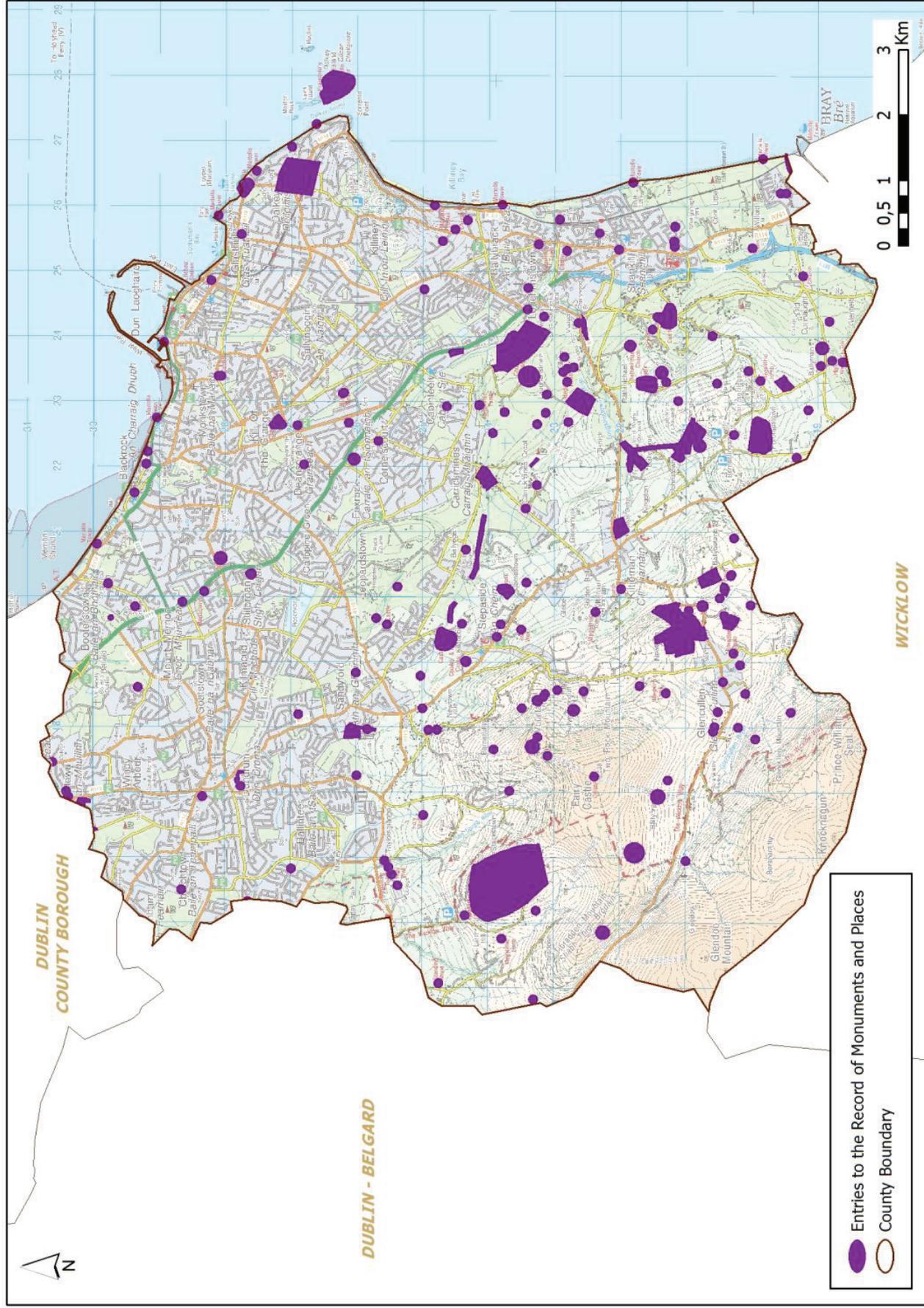


Figure 3.8 Archaeological Heritage - Record of Monuments and Places

Source: Dún Laoghaire-Rathdown County Council (Unknown)

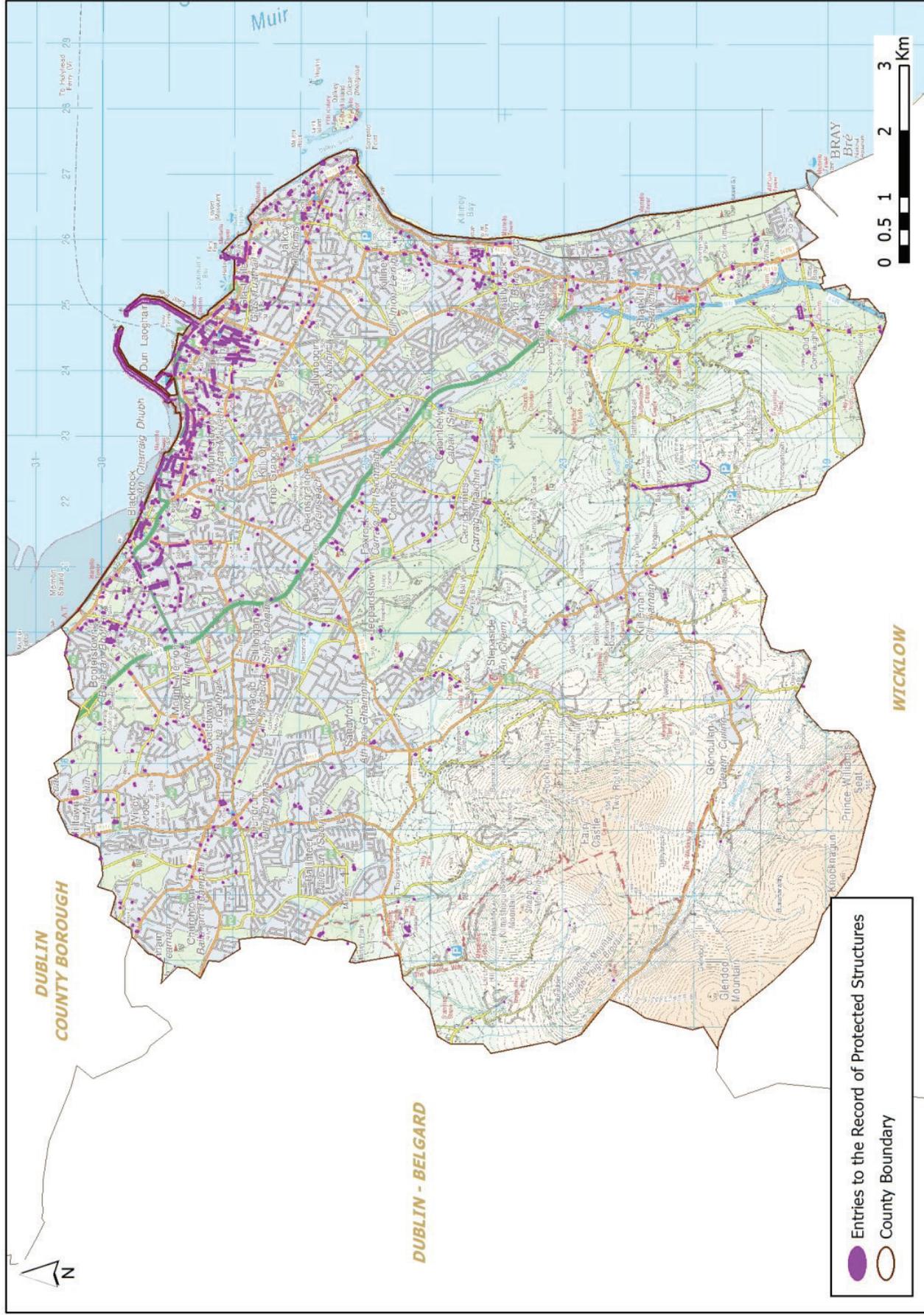


Figure 3.9 Architectural Heritage - Record of Protected Structures and Areas of Architectural Conservation

Source: Dún Laoghaire-Rathdown County Council (2010)

CAAS for Dún Laoghaire-Rathdown County Council

3.10 Landscape

Introduction

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; landcover, 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 landcover.

The importance of landscape and visual amenity and the role of its protection are recognised in the Planning and Development Act 2000 as amended, which requires that Development Plans include objectives for the preservation of the landscape, views and the amenities of places and features of natural beauty.

Landscape Character Assessment

Landscape Character Assessment attempts to describe landscapes in terms of their character in an objective way. This can be used to inform decision making in relation to the protection of the environment, natural resources and heritage; it can be used to monitor change and can be used to guide development.

In accordance with the DEHLG's Landscape and Landscape Assessment Guidelines (2000), the Council has identified 14 Landscape Character Areas which are listed below and mapped on Figure 3.10:

1. Kilmashogue Valley
2. Western Half of Kellystown Road
3. Ticknock Road
4. Marlay Park
5. Kilternan Plain
6. Ballycorus
7. Glencullen Valley
8. Glendoo Valley
9. Barnacullia
10. Rathmichael
11. Ballyman
12. Shanganagh
13. Carrickmines
14. Cherrywood Rathmichael

There is a commitment given in the County Development Plan to review the Landscape Character Areas when new National guidance is issue.

High Amenity Zones

The County Development Plan designates High Amenity Zones in the southern portion of the County. These areas consist of landscapes of special value where inappropriate development would contribute to a significant diminution of the landscape setting of the County. It is the policy of the Council to conserve and enhance existing High Amenity Zones and to seek to manage these and other areas to absorb further recreational uses and activity without damaging the amenities that affords them their special character.

Areas covered by the High Amenity Zoning include the Glencullen Valley, Glendoo Valley and Kilmashogue Valley. The areas adjacent to the High Amenity areas are also sensitive landscapes as development in these areas may affect directly or indirectly the quality of the High Amenity areas.

High Amenity Zones are mapped on Figure 3.11.

Views and Prospects

The County contains many sites, areas and vantage points from which views over areas of great natural beauty, local landmarks, historic landscapes, adjoining Counties and the City of Dublin may be obtained. In addition to scenic views, the County also contains important prospects i.e. prominent landscapes or areas of special amenity value or special interest which are visible from the surrounding area. Specific Views and Prospects for protection have been identified in the Plan and are considered when assessing planning applications. These Views and Prospects are mapped on Figure 3.12.

Existing Problems

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

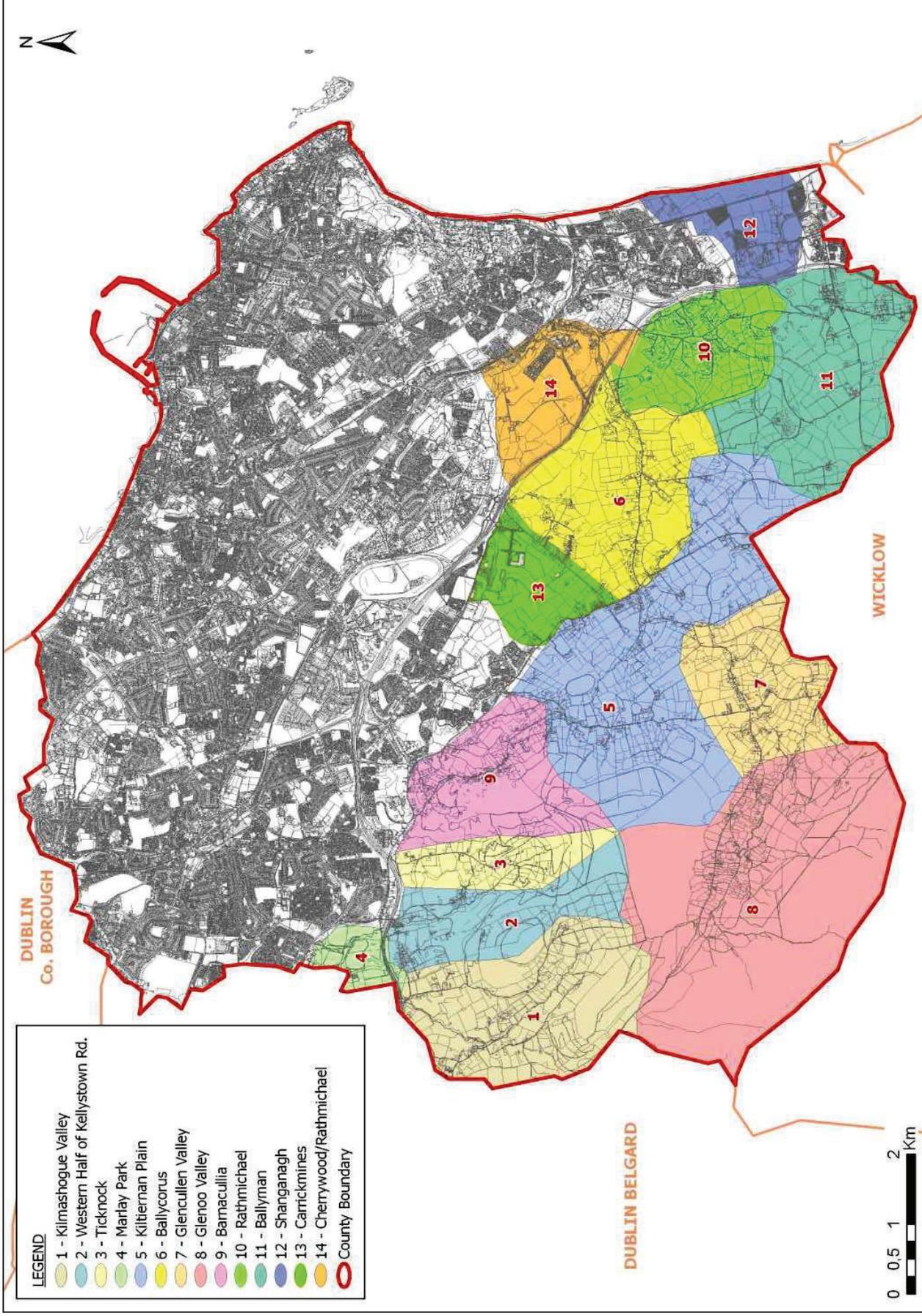


Figure 3.10 Landscape Character Areas
 Source: Dún Laoghaire-Rathdown County Council (2010)

CAAS for Dún Laoghaire-Rathdown County Council

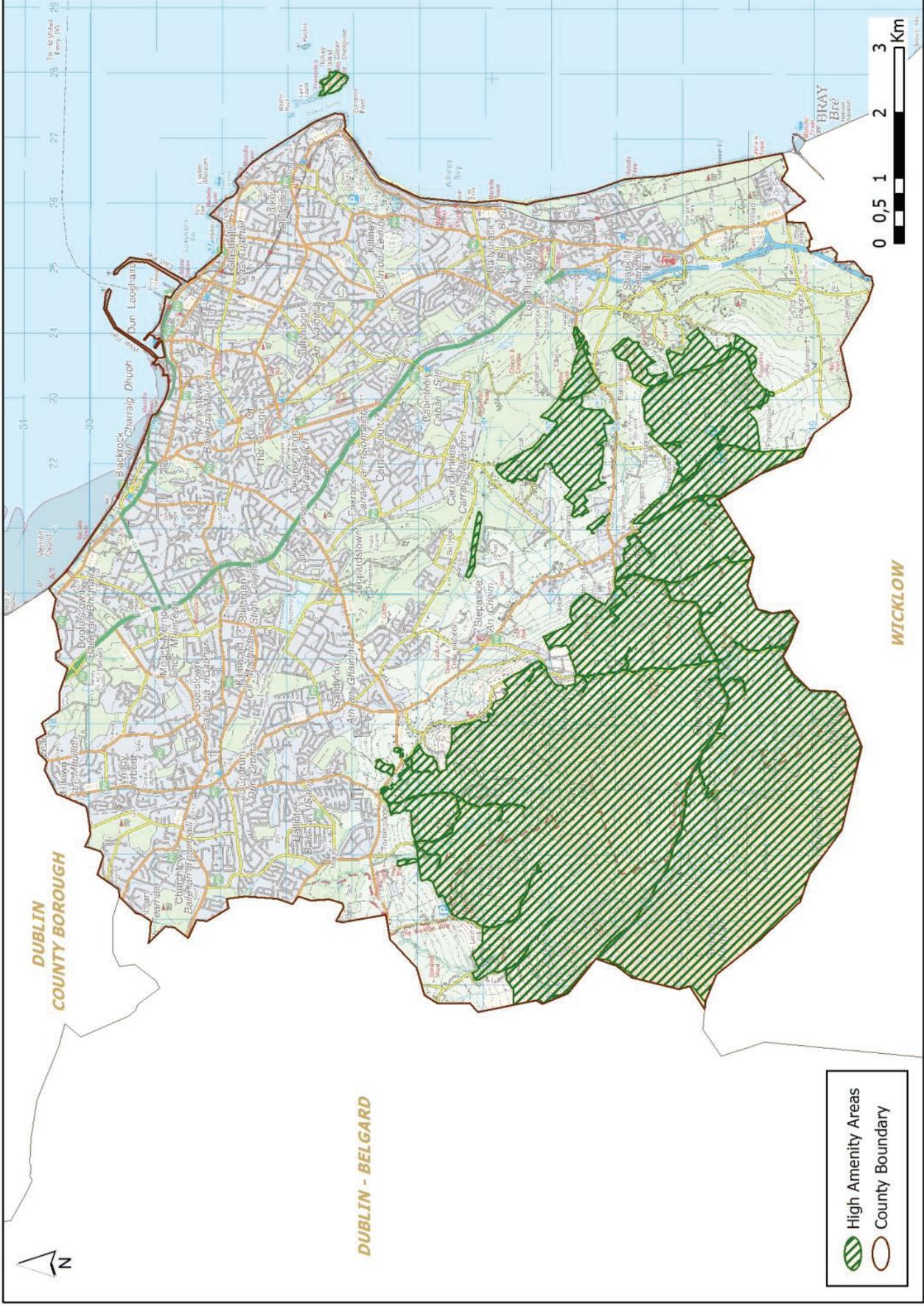


Figure 3.1.1 High Amenity Area Zoning
 Source: Dún Laoghaire-Rathdown County Council (2014)

CAAS for Dún Laoghaire-Rathdown County Council

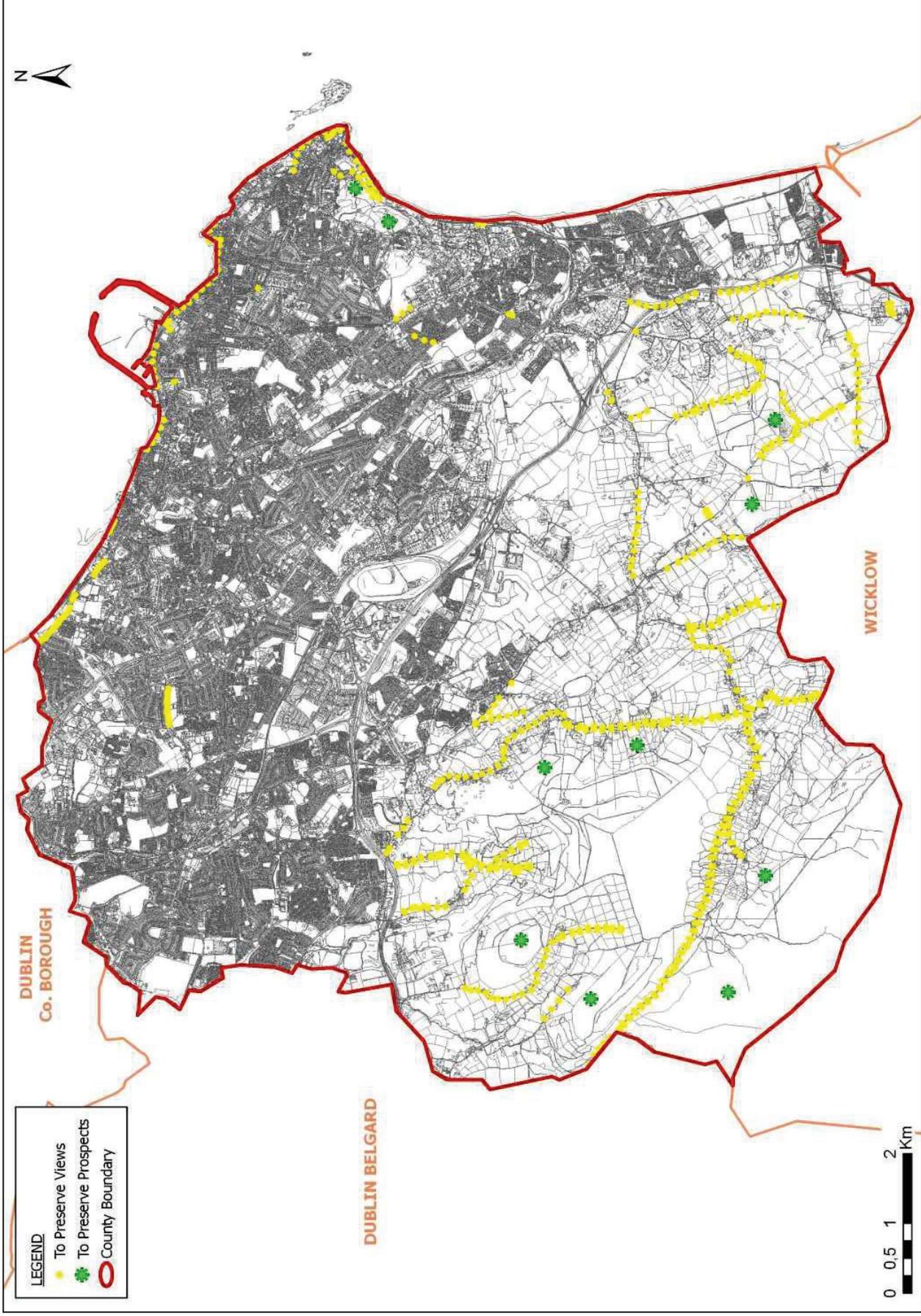


Figure 3.12 Protected Views and Prospects

Source: Dún Laoghaire-Rathdown County Council (2010)

CAAS for Dún Laoghaire-Rathdown County Council

3.11 Overlay of Environmental Sensitivities

In order to identify where most sensitivities within the County occur, a number of the environmental sensitivities described above were weighted and mapped overlapping each other. Figure 3.13 provides an overlay of environmental sensitivities for the County.

The overlay mapping shows that environmental sensitivities are not evenly distributed throughout the County.

It is emphasised that the occurrence of environmental sensitivities does not preclude development; rather it flags at a strategic level that the mitigation measures - which have already been integrated into the County Development Plan - will need to be complied with in order to ensure that the implementation of the Plan contributes towards environmental protection.

The overlay mapping shows that environmental sensitivities are not evenly distributed throughout the County.

Most of the County is of a low to moderate sensitivity due to the low level of environmental sensitivities occurring.

Higher levels of environmental sensitivities are found:

- In the south western uplands of the County due to ecological designations, water sensitivities and landscape designations; and
- In/adjacent to the east of the County's coastal areas (due to ecological designations and water sensitivities).

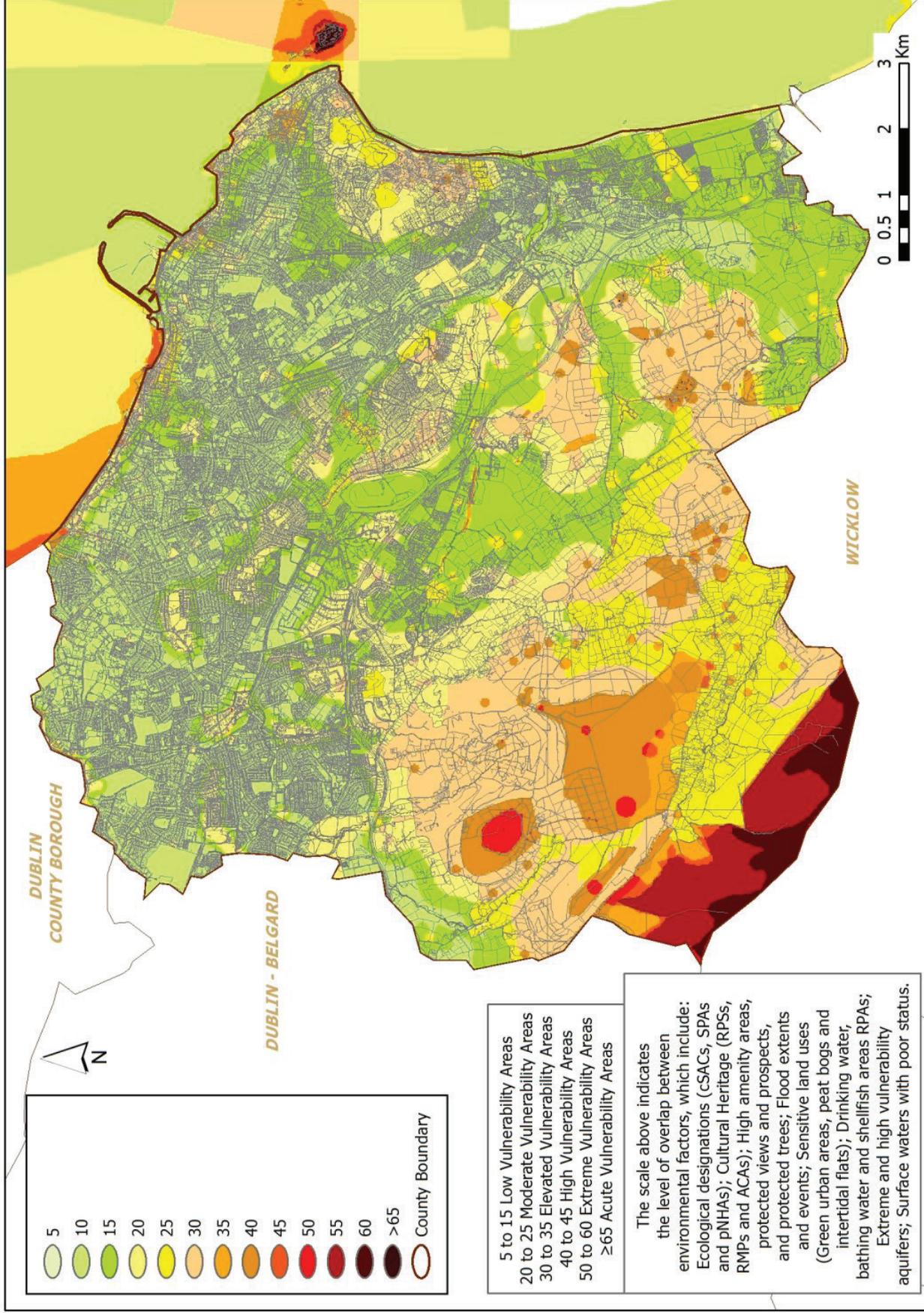


Figure 3.13 Overlay Mapping of Environmental Sensitivities
 Source: CAAS (2014)

3.12 Appropriate Assessment and Strategic Flood Risk Assessment

Stage 2 Appropriate Assessment (AA) and a Strategic Flood Risk Assessment (SFRA) have both been undertaken alongside the Plan.

The requirement for AA is provided under the EU Habitats Directive (Directive 1992/43/EEC). AA is a focused and detailed impact assessment of the implications of a strategic action or project, alone and in combination with other strategic actions and projects, on the integrity of a Natura 2000 site in view of its objectives for conservation. The AA concluded that the Plan will not have a significant adverse effect on European Sites, and that the integrity of the European Sites, in view of their conservation interests, will not be adversely affected. The preparation of the Plan, SEA and AA has taken place concurrently and the findings of the AA have informed both the Plan and the SEA. Various policies and objectives have been integrated into the Plan through the AA process.

The requirement for SFRA is provided under 'The Planning System and Flood Risk Management Guidelines for Planning Authorities' (DECLG, 2009). The purpose of the SFRA is to provide sufficient information to allow sound planning decisions to be made on sites at risk of flooding over the lifetime of the Plan and also to ensure that Elected Members have the necessary information in coming to decisions on the Plan with respect to flood risk and its management.

Various policies and objectives have been integrated into the Plan through the SEA, SFRA and AA processes. The preparation of the Plan, SEA, AA and SFRA has taken place concurrently and the findings of the AA and SFRA have informed both the Plan and the SEA.

3.13 Strategic Environmental Objectives

Strategic Environmental Objectives (SEOs) are methodological measures against which the environmental effects of the Plan can be tested. If complied with in full, SEOs would result in an environmentally neutral impact from implementation of the Plan. The SEOs are set out under a range of topics and are used as standards against which the provisions of the Plan can be evaluated in order to help identify areas in which potential adverse impacts may occur. SEOs are distinct from the objectives of the Plan and are developed from international and national policies which generally govern environmental protection objectives. SEOs used in the assessment are as follows:

- *SEO B1: To ensure compliance with the Habitats and Birds Directives with regard to the protection of Natura 2000 Sites and Annexed habitats and species*
- *SEO B2: To ensure compliance with Article 10 of the Habitats Directive with regard to the management of features of the landscape which - by virtue of their linear and continuous structure or their function act as stepping stones (designated or not) - are of major importance for wild fauna and flora and essential for the migration, dispersal and genetic exchange of wild species*
- *SEO B3: To avoid significant impacts on relevant habitats, species, environmental features or other sustaining resources in designated sites including Wildlife Sites and to ensure compliance with the Wildlife Acts 1976-2010 with regard to the protection of listed species*
- *SEO PHH1: To protect populations and human health from exposure to incompatible landuses*
- *SEO S1: To avoid damage to the hydrogeological and ecological function of the soil resource*
- *SEO W1: To maintain and improve, where possible, the quality and status of surface waters*
- *SEO W2: To prevent pollution and contamination of ground water*
- *SEO W3: To comply as appropriate with the provisions of the Planning System and Flood Risk Management: Guidelines for Planning Authorities (DEHLG, 2009)*
- *SEO M1: To serve new development with adequate and appropriate waste water treatment*
- *SEO M2: To serve new development with adequate drinking water that is both wholesome and clean*

- *SEO M3: To reduce waste volumes, minimise waste to landfill and increase recycling and reuse*
- *SEO C1: To reduce travel related emissions to air and to encourage modal change from car to more sustainable forms of transport*
- *SEO CH1: To protect archaeological heritage including entries to the Record of Monuments and Places and/or their context*
- *SEO CH2: To protect architectural heritage including entries to the Record of Protected Structures and Architectural Conservation Areas and their context*
- *SEO L1: To minimise significant adverse visual impacts within and adjacent to the Plan area - especially having regard to the Plan Policies LHB2 to 6 which provide for the protection and management of Landscape Character Areas, the Seascape, High Amenity Zones, Historic Landscape Character Areas and Views and Prospects.*