

# Causeway Coast & Glens Borough Council Planning Committee

## Causeway Coast & Glens Borough Council Local Development Plan – Preparatory Studies

To: Planning Committee

Date: 27<sup>th</sup> January 2016

### For Decision

<b>Linkage to Corporate Plan</b>	
<b>Strategic Priority</b>	Protecting and Enhancing our Environments and Assets
<b>Lead Officer</b>	Sharon Mulhern
<b>Cost: (If applicable)</b>	

### 1.0 Background

1.1 This is the sixth topic-related preparatory paper presented to Members, and relates to public utilities.

1.2 Key outputs of the paper are:

- To identify the authorities and organisations responsible for public utilities provision;
- To provide Members with information on the Government strategies, and regional planning context relating to public utilities;
- To provide Members with an overview of existing provision and information on public utilities in the Borough; and
- To highlight to Members how public utilities policies and provision may exert an influence on the location of future development.

### 2.0 Financial Implications

2.1 None.

### 3.0 Other Implications

3.1 None.

### 4.0 Recommendation

4.1 **IT IS RECOMMENDED** that Members endorse the use of the information contained within this paper in the preparation of the Local Development Plan.

### Appendix 1

Discussion Paper 6: Public Utilities

**DISCUSSION PAPER 6: PUBLIC UTILITIES**

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## Acronyms

DARD	Department of Agriculture and Rural Development
DoE	Department of Environment
DETI	Department of Enterprise, Trade and Investment
Ofcom	Office of Communications

## 1.0 Introduction

1.1 The purpose of this paper on Public Utilities is to provide Members with information on:

- The authorities and organisations responsible for the provision of public utilities;
- The regional planning context pertaining to public utilities and the relationship with the production of the Local Development Plan (LDP); and
- An overview of existing information and provision in the Council area.

1.2 The term 'public utilities' refers to:

- Flood risk, drainage and water supply;
- Energy supply including renewable energy;
- Telecommunications and other utilities;
- Recycling and waste management.

## 2.0 Responsible Authorities and Organisations

2.1 The provision of public utilities involves a large number of stakeholders, including Government Departments and Agencies, Local Authorities and the private sector, depending on the utility in question. The roles and responsibilities may be summarised as follows:

**Table 1: Public Utilities and Responsible Organisations**

<b>Public Utility</b>	<b>Flood Risk, Drainage and Water Supply</b>
<b>Organisation</b>	<b>Areas of Responsibility</b>
DARD, Rivers Agency	Drainage and flood defence
DoE, NIEA Water Management Unit	Protection of the aquatic environment, through activities including monitoring water quality, controlling effluent discharges, taking action to combat or minimise the effects of pollution.
NI Water	Mains water and sewage treatment
<b>Public Utility</b>	<b>Energy Supply including Renewable Energy</b>
<b>Organisation</b>	<b>Areas of Responsibility</b>
DETI	Regulatory role in relation to energy provision
Northern Ireland Electricity LTD (NIE)	Electricity asset owner of the transmission and distribution infrastructure
Private sector	Energy supply
<b>Public Utility</b>	<b>Telecommunications</b>
<b>Organisation</b>	<b>Areas of Responsibility</b>
Ofcom	Regulatory role in relation to telecommunications provision
DETI	Telecommunications Strategy
Private sector	Telecommunications supply
<b>Public Utility</b>	<b>Recycling and waste management</b>
<b>Organisation</b>	<b>Areas of Responsibility</b>
DoE	Waste Management Strategy
NIEA	Permits, licences and exemptions

Local authorities	Waste management facilities and infrastructure
Private sector	Recycling and waste disposal

### 3.0 Government Responsibilities and Strategies

#### i. Climate Change

3.1 One the key areas relating to the overarching principle of sustainable development is that of climate change.

3.2 Climate change is defined as:

*A change in global or regional climate patterns, in particular a change apparent from the mid to late 20<sup>th</sup> century onwards and attributed largely to the increased levels of atmospheric carbon dioxide produced by the use of fossil fuels.*

*Source: Oxford Dictionaries*

3.3 In Northern Ireland, the DoE takes the lead responsibility on the climate change agenda. The Executive's Programme for Government target is to continue to work towards a reduction in greenhouse gas emissions by at least 35% on 1990 levels by 2025. As part of its remit, the DoE monitors greenhouse gas emissions through inventories from 1990-2012 (the most recently published figure). The six greenhouse gases are:

- Carbon dioxide;
- Methane;
- Nitrous oxide;
- Hydrofluorocarbons;
- Perfluorocarbons; and
- Sulphur hexafluoride.

3.4 The DoE bulletin of June 2014 advises that:

- There has been a decrease from 1990 until 2012 in emissions of 16%;
- The largest sources of emissions in 2012 are:
  - Agriculture (30%);
  - Transport (20%);
  - Energy supply (18%); and
  - Residential (15%).

3.5 Since 1990, transport emissions have increased, although they have been reducing since reaching their peak in 2007, which is likely to be related to the economic downturn. All other sectors have experienced a decreasing trend in emissions since 1990, with the greatest decreases being in the energy supply and residential sectors, due to the increased use of gas in power stations and in homes since 1996.

ii. Flood Risk, Drainage and Water Supply

3.6 DARD is the organisation responsible for the management of the risk of flooding by sea, rivers, lakes, surface water and reservoirs under the Water Environment (Floods Directive) Regulations (NI) 2009. It manages risks by:

- prevention,
- protection, and
- preparedness.

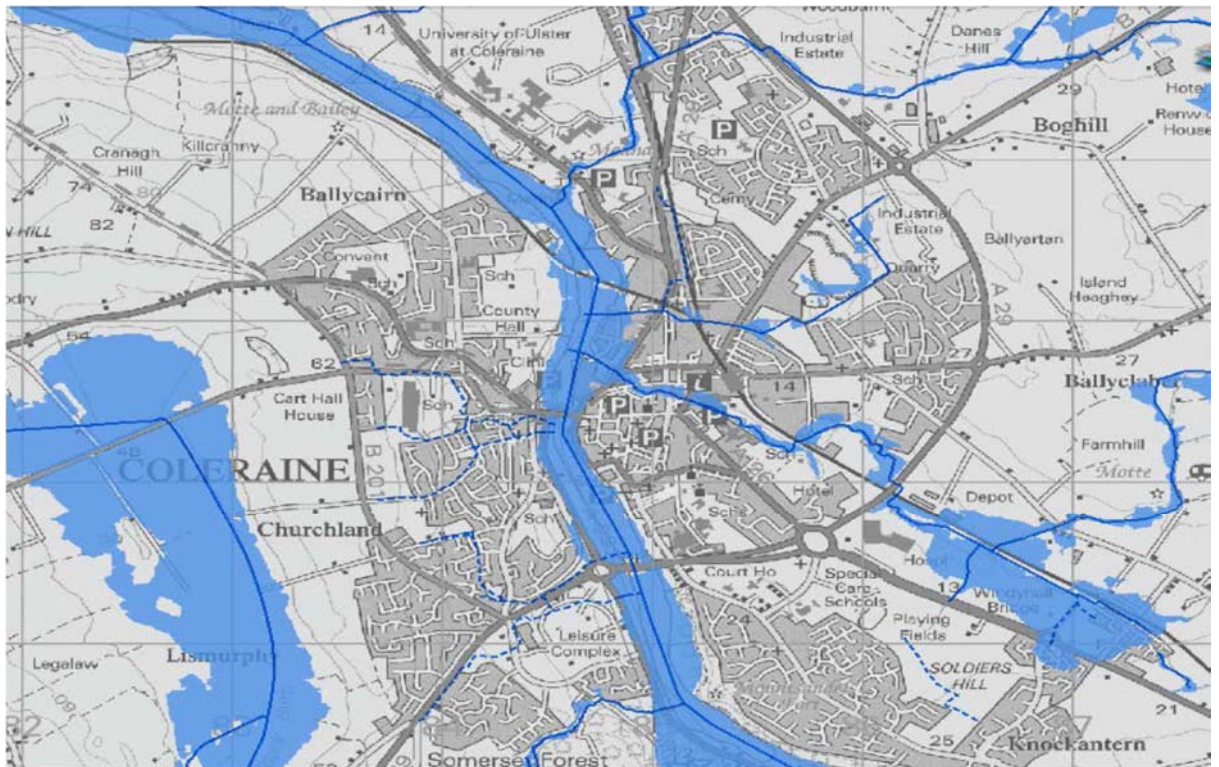
3.7 Flood risk is assessed on a catchment-wide scale, as flooding problems may be affected by the characteristics of the catchment. The Rivers Agency is a division of DARD and is the statutory drainage and flood defence authority. Its aim is to reduce the risk to life and damage to property from flooding from rivers and the sea and to undertake watercourse and coastal flood management in a sustainable manner. The Rivers Agency prepare flood maps which are of particular interest to the LDP and allocation of future lands for development.

3.8 DARD published its Flood Risk Management Plans in December 2015. The documents may be viewed at:

<https://www.dardni.gov.uk/publications/flood-risk-management>

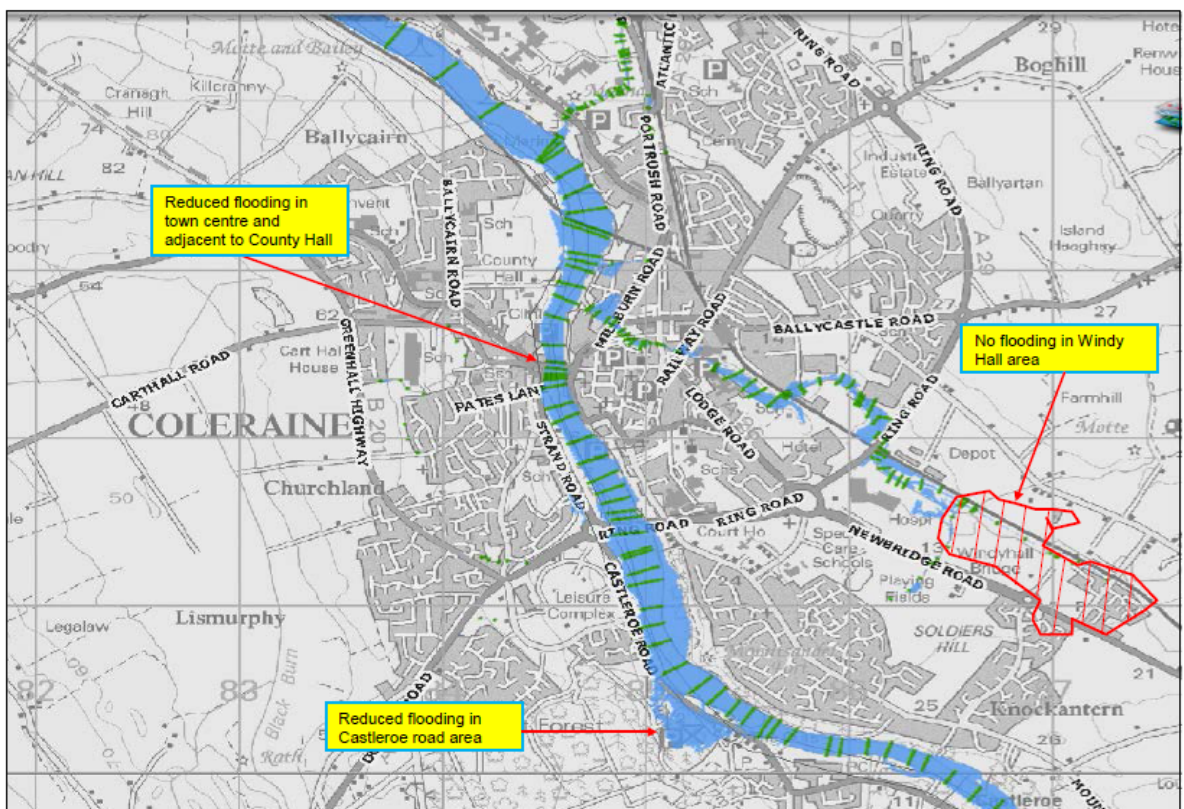
The production of these plans is a requirement under the EU Floods Directive, and their purpose is to provide a holistic, structured approach to the management of flood risk and to inform decisions on reducing the adverse impact of flooding on human health, economic activity, cultural heritage and the environment. The report highlights that twenty areas across Northern Ireland are identified as areas of potential significant flood risk. The only area identified as having potential significant flood risk in the Council area is Coleraine mainly by fluvial flooding. Two maps are reproduced from the Neagh-Bann report, the first indicating the strategic flood outline for Coleraine, the second indicating the new flood outline for the town.

**MAP 1a: Map Indicating the Strategic Flood Outline for Coleraine Strategic Flood Risk Area**



Source: Neagh-Bann Flood Risk Management Plan, page 252, December 2015, DARD

**MAP 1b: Map Indicating the New Detailed Flood Outline for Coleraine Strategic Flood Risk Area**



Source: Neagh-Bann Flood Risk Management Plan, page 253, December 2015, DARD



iii. Water and Sewerage

- 3.9 NI Water is the sole provider of water and sewerage services in Northern Ireland. It supplies 560 million litres of clean water a day for the Northern Ireland population of almost 1.8 million, and treats 320 million litres of wastewater a day (source: NI Water website: <http://www.niwater.com/home.aspx>). It also provides one free discretionary septic tank emptying service every twelve months.
- 3.10 The Government also has a role in water and sewerage. NIEA is an agency within the DoE. Its Water Management Unit (WMU) has a duty to promote the conservation of the water resources of Northern Ireland and the cleanliness of water in waterways and underground, under the Water (NI) Order 1999. The Drinking Water Inspectorate is a unit within NIEA and is responsible for regulating the drinking water quality under the Water Supply (Water Quality) Regulations (NI) 1994.

iv. Energy Supply including Renewable Energy

- 3.11 DETI is responsible for the Government's strategy and policy relating to energy. The map contained in Appendix 1 is reproduced from the DETI website and illustrates the main features of energy infrastructure at 2004:
- 3.12 DETI published its 'Sustainable Energy Action Plan 2012-15 and Beyond' in May 2015, which appears to be largely based on its 2012 report. The action plan seeks to provide a single location where all the sustainable energy actions are brought together, as the responsibility for energy policy is presently divided between 11 Government Departments to varying degrees:
- DETI has overall responsibility for electricity and gas policy, legislation and delivery;
  - DoE has responsibility for climate change policy, legislation and delivery, waste management strategy including energy from waste, air quality, pollution prevention and control;
  - DRD has responsibility for regional planning, policy and legislation for water service, and transport policy.
- 3.13 Given the level of cross-departmental responsibility, a Sustainable Energy Inter Departmental Working Group (SEIDWG) has been established and has recommended that energy function should be amalgamated to have the necessary legislative powers in one place, increasing accountability and streamlining internal processes.
- 3.14 The Energy Targets in the Action Plan include:
- Renewable energy: to create the relevant conditions for an increase to 40% electricity consumption from renewable sources by 2020;
  - Transport: as contained in the 'New Approach to Regional Transportation' published in 2012 - to reduce greenhouse gas emissions from transport, to protect biodiversity: the 'Wildlife and Natural Environment Bill (NI)' includes a duty to conserve biodiversity; and reduce water, noise and air pollution.
- 3.15 Arising from the Action Plan, DETI also published a report on a long term vision to 2050 for energy covering electricity, heat and transport: 'Envisioning the Future,

Considering Energy in Northern Ireland to 2050' in May 2015. This is a vision of what might happen by 2050: the outcomes are neither a prediction nor a plan and the study does not, therefore, propose a strategy due to the very significant uncertainty in many of the variables over such a long timeframe. Instead, the vision is intended to guide thinking on what can be achieved in 2050 and what early decisions and activities may be needed to support development towards 2050. Two separate scenarios are considered:

- **Scenario 1:** This considers a continuation of trends from 2020 in the move toward increased security of supply and decarbonisation;
- **Scenario 2:** This considers a more aggressive change towards higher security of supply and greater decarbonisation, with higher levels of energy efficiency and greater moves to renewable energy.

3.16 The report's conclusions in terms of its energy vision suggest that significant progress towards decarbonisation could be achieved. The scenarios envisage a significant change in energy security of supply, and the reliance on oil heating is expected to be significantly reduced and replaced by gas, renewable heat and electricity. Oil will continue to dominate the fuel mix for transport. The scenarios suggest that, from being a net importer of electricity, Northern Ireland could become a significant net exporter. In general, electricity costs are due to rise, and the use of lower cost electricity generation options, such as smart grid solutions or energy storage, may help reduce costs and reduce greenhouse gas emissions. However, a sustained and concerted effort to deliver would require all sectors of the economy to play their part in making the changes envisaged in the report to achieve these changes in security of supply and greenhouse gas emissions. The full report is viewable at:  
<https://www.detini.gov.uk/sites/default/files/publications/deti/2050%20vision%20report.pdf>

3.17 DETI is presently reviewing its Strategic Energy Framework 2010-2020, which was originally published in September 2010, and the closing date for the public consultation on the review was 18<sup>th</sup> September 2015. The strategic aim of the Framework is for a more secure and sustainable energy system. It concentrates on the key areas of electricity, natural gas and renewable energy sources, set in the context of the European Union vision of a single European energy market alongside its overarching objective of seeking to decarbonise the European Union energy mix. It notes that greater quantities of renewable energy is now an imperative for Northern Ireland, and that Northern Ireland must become more sustainable economically, environmentally and socially. A sustainable energy based economy which has a focus on renewable energy at its core can go a long way to meeting this goal (page 7). The four key energy goals of the new Framework are:

- Building competitive markets;
- Ensuring security of supply;
- Enhancing sustainability; and
- Developing our energy infrastructure.

3.18 There are six primary sources of renewable energy:

- Wind (generated using turbines);

- Solar (generated using panels);
- Hydro power (generated using the movement of water);
- Biomass (produced from organic materials such as crops, wood and manure);
- Geothermal (derived from the heat that is given off by the Earth); and
- Biofuels (derived from burning plant or animal substances).

3.19 Renewable energy is energy that can be reproduced in a short period of time.

v. Telecommunications

3.20 DETI is also responsible for the strategy and policy relating to its role in telecommunications which is to support investment in telecommunications infrastructure, facilitate improvements in broadband, mobile and international connectivity.

3.21 The telecommunications market in Northern Ireland is privatised and independently regulated by the Office of Communications (Ofcom). Telecommunications in Northern Ireland is a reserved matter, which means it is controlled centrally by the Department of Culture, Media and Sport in London. DETI has limited powers to intervene and it exercises these functions through, amongst others, the Northern Ireland Programme for Government, the Northern Ireland Economic Strategy and the Regional Development Strategy.

3.22 DETI, along with the Department of Culture, Media and Sport, through Broadband Delivery UK and BT, has invested in the Superfast Rollout Programme Phase 2, which will provide improved superfast broadband services in areas across Northern Ireland from 2015 to 2017 with superfast broadband speed of more than 24 megabits per second.

Project Kelvin

3.23 Project Kelvin is a collaborative initiative between DETI and the Republic of Ireland's Department of Energy, Communications and Natural Resources, and was funded under the European Interreg IV programme. It has established a direct international link between Northern Ireland and North America and Europe, with the connection at Coleraine. This direct international link should be attractive to global companies, such as financial houses, service and media companies, that require fast, low latency, reliable and competitively priced bandwidth that avoids the traditionally congested routes such as New York and London.

vi. Recycling and Waste Management

3.24 The DoE is responsible for the drafting of legislation on waste, the implementation of the Waste Management Strategy and the promotion of a more sustainable approach to dealing with waste. The Waste Management Strategy places emphasis on the Waste Hierarchy (see Waste Hierarchy Diagram on page 13 of this report) and moves from resource management with landfill diversion as the key driver to resource efficiency, that is using resources in the most effective way while minimising the impact of their use on the environment.

3.25 The Council is in a group of seven former councils that have formed the North West Region Waste Management Group (NWEWMG). The aim of the Waste Management Plan is to develop a waste management system that meets the region's needs and contributes to economical and sustainable development. A revised NWEWMG Waste Management Plan, covering the period 2013-2020 has been published and the public consultation period finished in February 2015.

3.26 NIEA also has a role in waste management, in that it is responsible for the issuing of permits, waste management licences or registering exemption.

#### **4.0 Regional Planning Context**

4.1 The regional planning context is provided by the Regional Development Strategy (RDS) 2035, Planning Policy Statements (PPSs) and the Strategic Planning Policy Statement (SPPS) published in September last year. The SPPS states that a transitional period will operate until such times as a Plan Strategy for the whole Council area has been adopted, as part of the Council's Local Development Plan. During the transitional period, planning authorities will apply existing policy contained in PPSs along with any relevant supplementary and good practice guidance, together with the SPPS. Both sets of policy statement documents have, therefore, been referred to in this paper.

##### **a. Regional Development Strategy (RDS) 2035**

4.2 The RDS contains a number of strategic policies that set out policy aims and objectives in relation to infrastructure provision. These are:

**Economy: RG3** – Implement a balanced approach to telecommunications infrastructure that will give a competitive advantage;

**Economy: RG 5** – Deliver a sustainable and secure energy supply;

**Environment: RG 9** – reduce our carbon footprint and facilitate mitigation and adaption to climate change whilst improving air quality;

**Environment RG 10** – manage our waste sustainably; and

**Environment: RG 12** – promote a more sustainable approach to the provision of water and sewerage services and flood risk management.

4.3 Looking at these strategic aims in turn, the commentary on Economy RG 3 (telecommunications) advises that the core telecommunications network in Northern Ireland is world class. However, as the market is fast moving, competitive advantage can be lost if a region fails to continue to invest in its infrastructure. Four issues are highlighted:

1. invest in infrastructure for higher broadband speeds;
2. improve telecom services in smaller rural areas to minimise the urban/rural divide;
3. increase the usage of broadband; and
4. capitalise on direct international connectivity.

4.4 Also in the Economy section, RG 5 (energy supply), the RDS advises that Northern Ireland needs a robust and sustainable energy infrastructure, and that new generation or distribution infrastructure needs to be planned and assessed to avoid

adverse environmental effects, particularly on or near protected sites. Five issues are highlighted:

1. increase the contribution that renewable energy can make to the overall energy mix;
2. strengthen the grid;
3. provide new gas infrastructure;
4. work with neighbours; and
5. develop 'smart grid' initiatives.

4.5 The three relevant aims in the Environment section focus on sustainability. It advises that fossil fuels represent over 90% of the Northern Ireland's power generation and over 70% of households use oil for home heating. Significant investment is required to upgrade the electricity infrastructure, develop the natural gas network and explore the potential to develop a renewable heat generation and distribution network. Transportation is highlighted as the only sector where emissions are rising, and it accounts for a quarter of man-made greenhouse gas emissions.

4.6 RG 9 (carbon footprint and mitigation and adaptation) advises that climate change is increasingly seen as one of the most serious problems in the world, with air pollution from particulate matter recognised as a contributor to the reduction in life expectancy in the UK. Emissions from sulphur, nitrogen and ammonia can be deposited on land and water affecting species and habitats. Climate change also affects temperature levels, storms, floods and coastal erosion. The opportunity to reduce the use of fossil fuels and greenhouse gas emissions by recycling waste and recovering energy from it is acknowledged. The RDS highlights that one of the key issues that influenced the Spatial Framework is the need to address the consequences of climate change, which means an even greater focus on where people live and work and how transport and energy needs are planned in all aspects of forward planning.

4.7 Eight issues are highlighted in mitigation around the matters of transport, energy efficiency and air quality:

1. Reduce greenhouse gas emissions from transport;
2. Reduce noise and air pollution from transport;
3. Use more energy efficient forms of transport;
4. Improve the energy efficiency and adaptability of buildings;
5. Increase the use of renewable energies;
6. Utilise local production of heat and/or electricity from low or zero carbon energy sources;
7. Develop strong linkages between policies for managing air pollution and climate change; and
8. Protect air quality management areas.

4.8 Six issues are highlighted in adaptation:

1. re-use land, buildings and materials;
2. adopt grey water recycling;
3. minimise development in areas at risk from flooding from rivers, the sea and surface water run-off;
4. protect soils;
5. protect and extend the ecosystems and habitats that can reduce or buffer the effects of climate change; and

6. identify key assets and areas that are at risk through climate change.

4.9 The Northern Ireland Building Regulations (February 2014) mean that, by 2020, there will be a requirement for all new buildings to be nearly zero-energy buildings. A nearly zero-energy building is defined as:

*A building that has a very high energy performance. The nearly zero or very low amount of energy required should be covered to a very significant extent by energy from renewable sources, including energy from renewable sources produced on-site or nearby.*

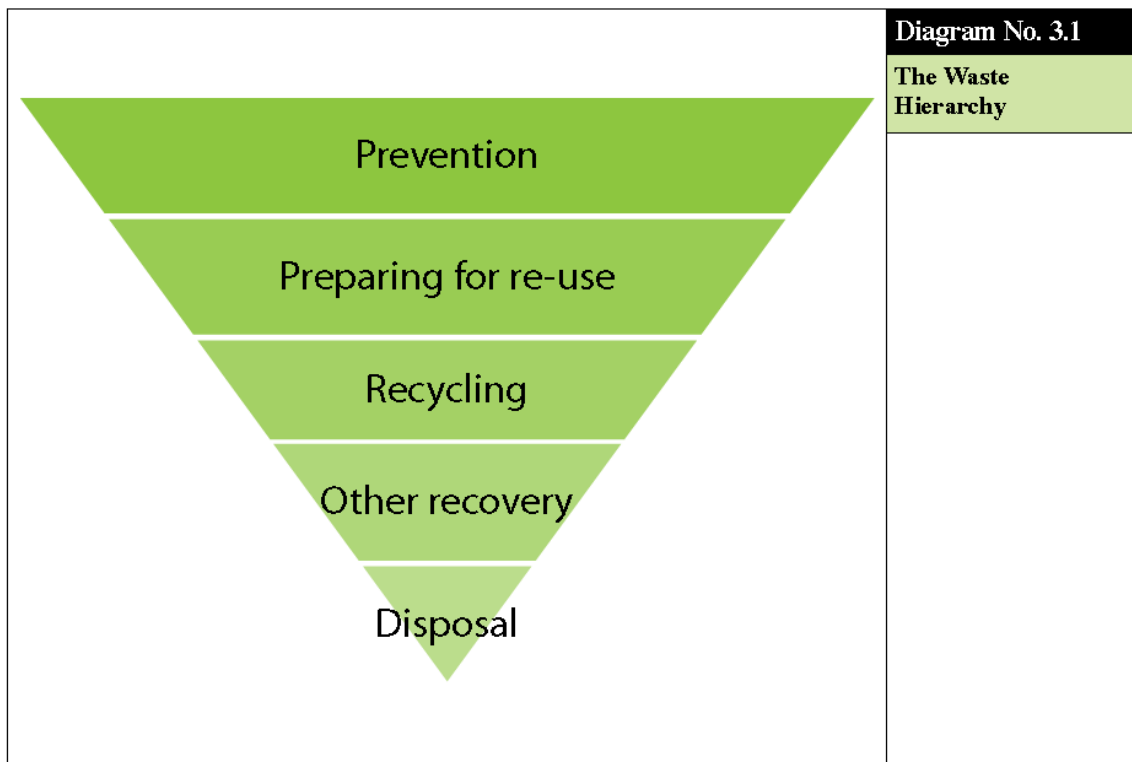
Source: Article 2 of Energy Performance of Buildings Directive (EU)

This requirement should assist in reducing energy needs, thereby contributing to the Government's strategic objectives.

4.10 RG 10 (waste management) recognises that waste can become a serious threat to public health, and damage the environment if not managed safely. Two issues are raised:

1. apply the waste hierarchy principles (see diagram below); and
2. apply the proximity principle (ie treat waste as close to its point of generation as practicable).

**RDS: The Waste Hierarchy, Diagram No. 3.1, Page 46**



4.11 RG 12 (water management) recognises that changes in population distribution, household formation, urban development and lifestyles put increased pressure on water resources and drainage systems. The water environment is also impacted upon by climate change. Three issues are raised:

1. integrate water and land-use planning;
2. manage future water demand; and

3. encourage sustainable surface water management.
- 4.12 There is also some cross-reference to a number of these policy aims in other guidance in the RDS, for example in terms of flood risk, RG1: *Ensure adequate supply of land to facilitate sustainable economic growth*; and RG 8: *Manage housing growth to achieve sustainable patterns of residential development*. The RDS advises that employment land should be located to make best use of available services, such as water and sewerage infrastructure and avoid, where possible, areas known to be or at risk of flooding. The inter-relationship of these various issues is demonstrated in the Housing Evaluation Framework (Table 3.2, page 42, reproduced in Appendix 2), for example in the Resource Test, the Environmental Capacity Test, the Transport Test and the Economic Development Test. SRF 14: *Improve accessibility for rural communities*; acknowledges that rural communities can be at a disadvantage due to their remote location but this can be lessened by the application of new and developing technologies.
- 4.13 Therefore, the RDS recognises, and places emphasis on, the relationship between the location of new development and the provision and efficient use of infrastructure and finite resources.
- 4.14 Waste and climate change is also highlighted in the RDS, with the focus on the diversion of waste from landfill to other treatment methods, which the RDS acknowledges will require the development of significant new waste management infrastructure.

**b. Planning Strategy for Rural Northern Ireland**

- 4.15 Policy PSU 11: Overhead Cables, relates to the potential visual impact of such proposals with particular reference to designated areas of landscape or townscape value.

**c. Planning Policy Statements (PPSs)**

- 4.16 The following PPSs relate specifically to public utilities:
- PPS 10: Telecommunications
  - PPS 11: Planning and Waste Management
  - PPS 15: Planning and Flood Risk
  - PPS 18: Renewable Energy
  - PPS 21: Sustainable Development in the Countryside
- 4.17 The aims of PPS 10 include to facilitate the continuing development of telecommunications infrastructure in an efficient and effective manner, whilst minimising its visual and environmental impacts.
- 4.18 In relation to waste management, the main objectives of PPS 11 include the promotion of waste management facilities in appropriate locations, to ensure that detrimental effects on people, the environment and local amenity associated with waste management facilities are avoided or minimised, and to secure appropriate restoration of sites for agreed after uses. PPS11 indicates that Council waste management groups may wish to discuss any likely future waste management

facilities for the Plan area. When zoning any land for other forms of development, the potential impact of existing or approved waste management facilities should be considered. Specifically, development plans must consider the need to maintain an appropriate distance between establishments where hazardous substances are present and residential areas, areas of public use or areas of nature conservation interest.

- 4.19 PPS 15 adopts a precautionary approach in relation to development and the use of land in areas of flood risk. The objectives of PPS 18 include ensuring the environmental, landscape, visual and amenity impacts of renewable energy are adequately addressed. PPS 18 is accompanied by Supplementary Planning Guidance: Wind Energy Development in Northern Ireland's Landscapes, which provides broad, strategic guidance in relation to the visual and landscape impacts of wind energy development, and Best Practice guidance also.
- 4.20 PPS 21 provides policy guidance for development in the countryside that relies on non-mains sewerage to ensure there is no creation or addition to a pollution problem to ensure that water bodies are protected and managed as a sustainable resource for all activities that are dependent on them.

**d. Strategic Planning Policy Statement (SPPS)**

- 4.21 The SPPS refers to the challenge of mitigating and adapting to climate change, whilst improving air quality, in furthering sustainable development. Adaption is:  
*The process of adjusting to the changes in our climate and planning how to prepare for the future.*
- 4.22 It also means seeking out ways in which opportunities arising from potential climate change can be exploited. The SPPS advises (in paragraph 3.13) that the planning system should help to mitigate and adapt to climate change by:
- *shaping new and existing developments in ways that reduce greenhouse gas emissions and positively build community resilience to problems such as extreme heat or flood risk;*
  - *promoting sustainable patterns of development, including the sustainable re-use of historic buildings where appropriate, which reduces the need for motorised transport, encourages active travel, and facilitates travel by public transport in preference to the private car;*
  - *requiring the siting, design and layout of all new development to limit likely greenhouse gas emissions and minimise resource and energy requirements;*
  - *avoiding development in areas with increased vulnerability to the effects of climate change, particularly areas at significant risk from flooding, landslip and coastal erosion and highly exposed sites at significant risk from impacts of storms;*
  - *considering the energy and heat requirements of new developments when designating land for new residential, commercial and industrial development and making use of opportunities for energy and power sharing, or for decentralised or low carbon sources of heat and power wherever possible;*
  - *promoting the use of energy efficient, micro-generating and decentralised renewable energy systems; and*



- *working with natural environmental processes, for example through promoting the development of green infrastructure and also the use of sustainable drainage systems (SuDs) to reduce flood risk and improve water quality.*
- 4.23 The SPPS acknowledges that climate change is generally expected to increase flood risk, although there is uncertainty as to the extent and implications for particular parts of Northern Ireland.
- 4.24 The SPPS also highlights that the greater use of sustainable transport is necessary to meet the Executive's greenhouse gas emissions reduction target of at least 35% by 2025, and the strategic need for more sustainable transportation contained in the RDS which refers to the requirement to reduce our carbon footprint and facilitate mitigation and adaptation to climate change whilst improving air quality (RG 9), with reduction from transport listed as one of the mitigating measures (page 106, paragraph 6.295).
- 4.25 The SPPS contains separate sections on:
- a. Flood risk;
  - b. Renewable energy;
  - c. Telecommunications, public utilities; and
  - d. Waste management.
- i. Flood Risk
- 4.26 The aim of the SPPS is to prevent future development that may be at risk from flooding or that may increase the risk of flooding elsewhere. The Regional Strategic Objectives for the management of flood risk include to:
- prevent inappropriate new development in areas known to be at risk of flooding, or that may increase the flood risk elsewhere;
  - ensure that the most up to date information on flood risk is taken into account when determining planning applications and zoning/designating land for development in LDPs;
  - adopt a precautionary approach to the identification of land for development through the LDP process and the determination of development proposals, in those areas susceptible to flooding where there is a lack of precise information on present day flood risk or future uncertainties associated with flood estimation, climate change predictions and scientific evidence;
  - manage development in ways that are appropriate to the four main sources of flood risk ie fluvial, coastal, surface water and water impoundment (reservoir) breach or failure;
  - seek to protect development that is permitted within flood risk areas by ensuring that adequate and appropriate measures are employed to mitigate and manage the flood risks;
  - promote sustainable development through the retention and restoration of natural flood plains and natural watercourses as a form of flood alleviation and an important environmental and social resource;
  - promote sustainable development through encouraging the use of sustainable drainage for new development, and redevelopment/regeneration schemes; and
  - promote public awareness of flood risk and the flood risk information that is available and of relevance to undertaking development (paragraph 6.104, pages 61-62).

#### Flood Risk and LDPs

- 4.27 LDPs must take account of the potential risks from flooding over the plan period and beyond as it may influence the distribution of new development. They must take account of the most up to date flood risk information, and work closely with the Rivers Agency and other relevant agencies, including, where relevant, neighbouring authorities to promote a joined up approach to the issues of flooding and flood risk, for example in relation to river catchment areas. LDPs should apply a precautionary approach to development in areas that may be subject to flood risk presently or in the future as a result of climate change predictions. Flood risk may also be a consideration in the definition of settlement limits and the designation of new settlements. Sustainable drainage should be promoted in the Plan area, for example as key site requirements for appropriate zonings.

#### ii. Renewable Energy

- 4.28 The aim of the SPPS is to facilitate the siting of renewable energy generating facilities in appropriate locations within the built and natural environment to achieve Northern Ireland's renewable energy targets and to realise the benefits of renewable energy without compromising other environmental assets of acknowledged importance (paragraph 6.219, page 90). The Regional Strategic objectives are to:
- ensure that the environmental, landscape, visual and amenity impacts associated with or arising from renewable energy development are adequately addressed;
  - ensure adequate protection of the region's built, natural, and cultural heritage features; and
  - facilitate the integration of renewable energy technology into the design, siting and layout of new development and promote greater application of the principles of Passive Solar Design.

#### Renewable Energy and LDPs

- 4.29 LDPs should set out policies and proposals that support a diverse range of renewable energy development. They should clearly set out the factors that will be taken into account in decision making on planning applications. The LDP must take into account the above mentioned aim and objectives, local circumstances and the wider environmental, economic and social benefits of such energy. Paragraph 6.221 (page 91) states that moratoria on applications for renewable energy development whilst LDPs are being prepared or updated are not appropriate. Particular care should be taken when considering the potential impact of renewable proposals on the landscape, and a more cautious approach will apply within designated landscapes of significant value, such as AONBs and the Giant's Causeway and Causeway Coast World Heritage Site and their wider settings. Any renewable development on active peatland, which is of particular importance to Northern Ireland for its biodiversity, water and carbon storage qualities, will not be permitted unless there are imperative reasons of overriding public interest as defined under The Conservation (Natural Habitats, etc) Regulations (NI) 1995 as amended.

iii. Telecommunications and Other Utilities

4.30 The aim of the SPPS in relation to telecommunications and other utilities is to facilitate the development of such infrastructure in an efficient and effective manner whilst keeping the environmental impact to a minimum (paragraph 6.238, page 94).

4.31 The Regional Strategic Objectives for telecommunications and other utilities include to:

- ensure that, where appropriate, new telecommunications development is accommodated by mast and site sharing;
- ensure that the visual and environmental impact of telecommunications development is kept to a minimum;
- minimise, as far as practicable, undue interference that may be caused to radio spectrum users (for example mobile phone services, media broadcasting and wireless broadband services) by new telecommunications development; and
- encourage appropriate provision for telecommunications systems in the design of other forms of development.

Telecommunications and LDPs

4.32 The SPPS advises that councils may discuss the anticipated extent of the network coverage required over the plan period with telecommunications operators, and other relevant stakeholders, and LDPs may allocate sites for major new development. Policies should be included that set out criteria for the consideration of new telecommunications development including siting, design and impact on visual amenity. LDPs may set out additional requirements on operators, such as to demonstrate the need for new development and existing network constraints. Operators will be encouraged to site share wherever possible.

Other Utilities and LDPs

4.33 This section is included due to the presence of the City of Derry Airport adjacent to the Council's area to the west, and the ports within the Council area. LDPs should zone land for known requirements for future expansion of ports and airports where appropriate, and development adjacent to existing airport or seaport facilities that would seriously jeopardise their future expansion should not be permitted. LDPs should highlight Airport Public Safety Zones where appropriate, within which a general presumption against development will apply to control the number of people on the ground at risk of death or injury in the event of an aircraft accident on take off or landing. Commentary is also provided relating to overhead power lines and exposure to power-line Electro Magnet Fields (EMFs), with reference to the 1998 International Commission on Non-Ionizing Radiation Protection (ICNIRP) guidelines and the Voluntary Code of Practice Power Lines (2013) and the Code of Practice 'Optimum phasing of high voltage double-circuit power lines' relating to EMFs, which apply to various Government bodies across the United Kingdom. Although the SPPS does not set out aims and objectives for public utilities as in other sections, it advises that proposals for the development of new power lines will be considered having regard to potential impact on amenity and should avoid areas of landscape sensitivity, including AONBs (paragraph 6.250, page 96).

iv. Waste Management

4.34 The aim of the SPPS is to support wider government policy focussed on the sustainable management of waste and a move towards resource efficiency. The Regional Strategic Objectives for waste management are to:

- promote development of waste management and recycling facilities in appropriate locations;
- ensure that detrimental effects on people, the environment, and local amenity associated with waste management facilities (e.g. pollution) are avoided or minimised; and
- secure appropriate restoration of proposed waste management sites for agreed after-uses (paragraph 6.310, page 111).

Waste Management and LDPs

4.35 LDPs should include policies and proposals that support the aims and objectives of the SPPS, tailored to local circumstances. Councils must assess the likely extent of future waste management facilities, and specific sites for the development of such facilities should be identified along with key site requirements including locational criteria. LDPs should also identify the need for appropriate waste management facilities within new development. The SPPS sets out the following five locational criteria for sites and proposals for waste collection and treatment facilities, of which one or more must be met:

- it is located within an industrial or port area of a character appropriate to the development;
- it is suitably located within an active or worked out hard rock quarry or on the site of an existing or former waste management facilities including a land fill site;
- it brings previously developed, derelict or contaminated land back into productive use or where existing or redundant buildings can be utilised;
- in the case of civic amenity facilities, the site is conveniently located in terms of access to service a neighbourhood or settlement whilst avoiding unacceptable adverse impact on the character, environmental quality and amenities of the area; or
- it is suitably located in the countryside, it involves the reuse of existing buildings or is on land within or adjacent to existing building groups. Alternatively, where it is demonstrated that new buildings/plant are needed, these must have an acceptable visual and environmental impact.

4.36 Planning authorities need to take into account the Northern Ireland Waste Management Strategy, 'Delivering Resource Efficiency', which provides a coherent approach to the waste policy framework for Northern Ireland and the relevant local Waste Management Plan, and the 'Waste Hierarchy' set out in the diagram on page 13 above.

## **5.0 Existing Information**

5.1 Some information on public utilities is presently available, for example as a consequence of preparing the Northern Area Plan.

- i. Flood Risk, Drainage and Water Supply
- 5.2 The Planning Department holds maps, prepared by Rivers Agency, demonstrating the extent of the Q100 flood event over the Council area.
- 5.3 In the preparation of the DNAP Independent Examination, NI Water prepared information (at 2012) relating to the capacities of wastewater treatment works, and this is reproduced in Appendix 3. NI Water is in the process of updating this information for each Council area, to inform the preparation of the LDPs and, when available, will replace the information in Appendix 3.
- ii. Renewable Energy
- 5.4 The most common types of applications for renewable energy in the Council area have been:
- Wind turbines and farms;
  - Solar farms;
  - Hydroelectric schemes; and
  - Anaerobic digesters.
- 5.5 The table below provides information on the numbers of planning applications (including pending) for each type of renewable energy scheme. Given the significant level of applications for wind schemes, these have been separated into each former Council area.

**Table 2: Applications for Renewable Energy Schemes**

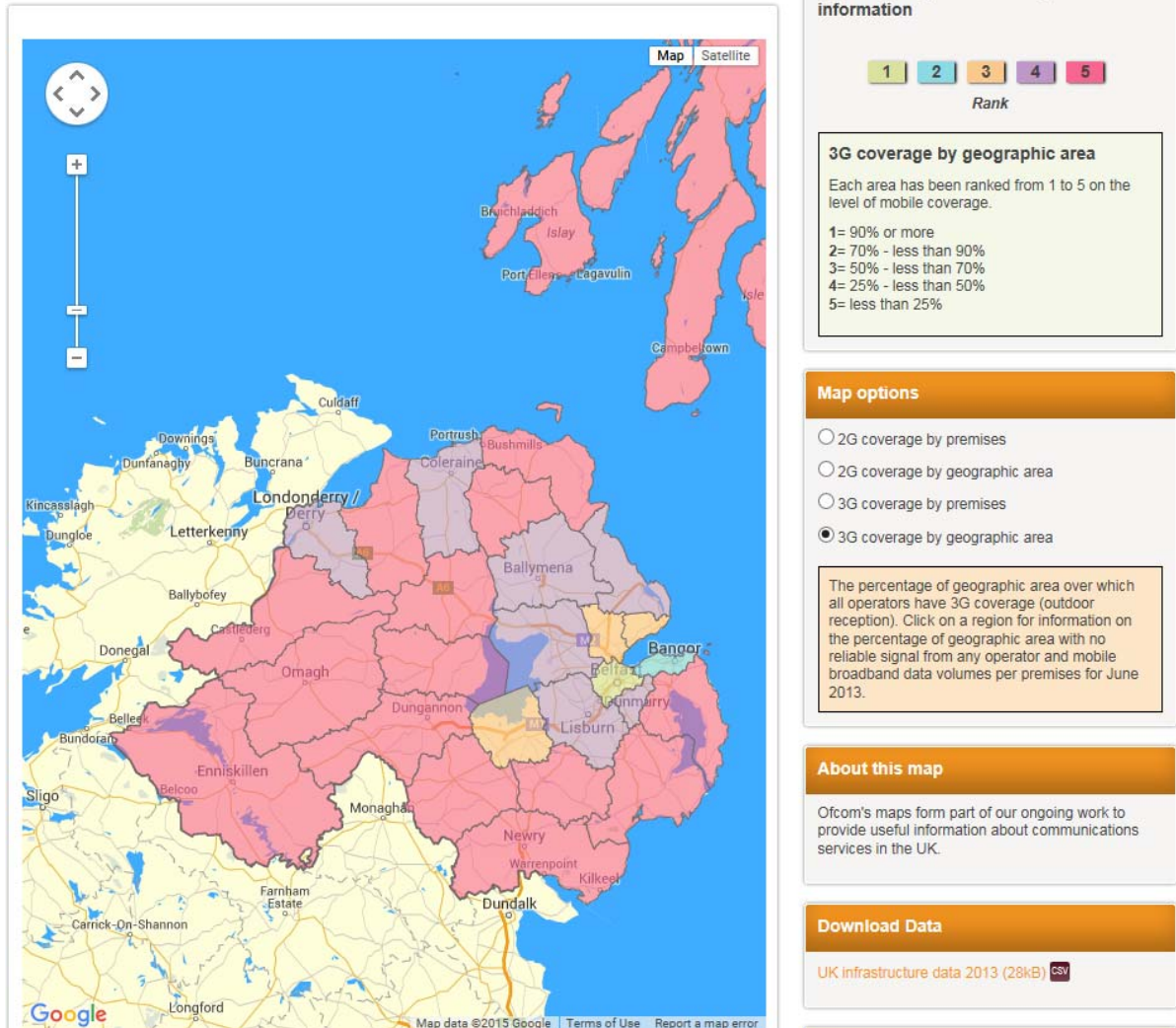
Council area	Renewable Energy Application Type			
	Wind	Solar	Hydro	AD
<b>Ballymoney</b>	149	<b>16</b>	<b>21</b>	<b>15</b>
<b>Coleraine</b>	191			
<b>Limavady</b>	108			
<b>Moyle</b>	74			
<b>Total</b>	<b>522</b>			

- 5.6 The distribution of planning applications for wind farms and single wind turbines across the Council area since 2000 is illustrated in Appendix 4, Maps 5a-d. The information relating to the other types of proposals for renewable energy are illustrated over the last five years in Maps 6: Solar, 7: Hydroelectric and 8: Anaerobic Digesters in Appendix 5.
- iii. Telecommunications
- 5.7 The most recent information available from Ofcom in relation to the extent of coverage in Northern Ireland relates to 3G broadband connection and dates from 2013. A map showing the 3G mobile data coverage is reproduced on the next page:

## Map 2: 3G Mobile Data Coverage by Geographical Area

### UK Mobile Services Map 2013

Level of outdoor mobile coverage by administrative authority



5.8 The details of 3G Coverage at District level, extracted from the map above are as follows:

**Table 3: 3G Coverage at District Level**

Former District	Premises Coverage – No Reliable Signal	Coverage from All Operators	Geographic Coverage - No Reliable Signal	Coverage from All Operators
Ballymoney	0.2%	5.7%	4.1%	7.1%
Coleraine	0.4%	50.3%	4.2%	27.2%
Limavady	9.9%	15.3%	19.5%	18.8%
Moyle	2.3%	0%	22.9%	0%

Source: Ofcom UK Mobile Services Map 2013

- 5.9 The most recent broadband connectivity is 4G, but the extent of its coverage presently is much less than 3G. Ofcom has not prepared a comprehensive more up to date map than its 2013 map. Information on 4G coverage is available on the providers' websites, and this is reproduced in Appendix 67, Maps a-f.
- 5.10 These tend to indicate that, overall, there is a reasonable 4G coverage in the Council area, although the facility does not appear to exist in some parts, for example to the south of Ballycastle and around Limavady. Improvements to coverage may help provide competitiveness to businesses, and also help connect rural communities which may feel isolated and 'left behind' in the technological age.

iv. City of Derry Airport Windfarm Safeguarding Area

- 5.11 The purpose of the safeguarding area is to ensure windfarm developments that affect the operational lands associated with the City of Derry Airport do not occur in a specified area. Although this airport lies just outside the Council's area, the notifiable area extends over a 30-35 km radius from the airport and incorporates all of the Limavady and Benbradagh areas and significant parts of Coleraine and Bann. The City of Derry Airport has provided a map showing the area involved, and this is illustrated on Map 10 in Appendix 7, which also shows two of the areas within the Notification Area:
- a. Critical Operational Areas within which no windfarm development should occur; and
  - b. Significant Operational Areas – robust safety mitigation required.

v. Recycling and Waste Management

- 5.12 The Council has the following civic amenity, compost and landfill sites:

Civic Amenity Sites

Coleraine	Portrush	Portstewart
Castlerock	Kilrea	Garvagh
Ballymoney	Crosstaghtery (Ballymoney)	Limavady
Dungiven	Carnealty (Ballycastle)	

Craigahulliar Landfill Site

Letterloan Compost Site

- 5.13 The locations of these sites are shown on Map 11 in Appendix 8.

vi. Other Utilities

- 5.14 Air quality is also linked to climate change, as air pollution from particulate matter may reduce life expectancy. There is one Air Quality Management Area presently in the Council's area – Dungiven. This area was declared for its Nitrogen dioxide levels and encompasses Main Street, between the River Roe Bridge and B64 Garvagh Road, and is shown on Map 3 below.

### Map 3: Designated AQMA in Dungiven



Source: Environmental Health Department, Air Quality Action Plan, March 2008

#### 6.0 Conclusions

6.1 The provision of public utilities is the responsibility of a number of different organisations in the public and private sector. Public utilities exert an influence on the location of development:

##### Flood Risk, Drainage and Water Supply

6.2 Areas known or at risk of flooding should be avoided for development purposes, The capacity of existing or future waste water treatment works should be considered to ensure development is adequately supported by associated infrastructure.

##### Renewable Energy

6.3 The focus has been on-shore wind farms and wind turbines since 2000. More recently, other schemes such as hydro-electric and photo-voltaic farms have come



forward as planning applications. Proposals have been application driven, rather than guided via strategic planning policy specific to the Council area.

#### Telecommunications

- 6.4 The importance of a fast and reliable telecommunications system in assisting in economic growth is highlighted by Regional policies and programmes. Former health concerns appear to have been overcome. The full potential benefits of Project Kelvin have yet to be realised.

#### Recycling and Waste Management

- 6.5 The Waste Management Strategy should inform if there are any future land use implications for recycling and waste management to be incorporated into the LPD.
- 6.6 The Government's overarching principle of sustainable development and the need to address the issue of climate change in its various formats, for example through the reduction of greenhouse gas emissions, the need to reduce the risk to life and property from flooding, the need to use existing resources and facilities efficiently, together with the regional planning context, are all relevant in planning for future growth, and the distribution of development in the Council's Local Development Plan.

**Appendix 1: Map 4: DETI Northern Ireland Energy Map November 2004 Showing Main Features of Energy Infrastructure**



Source: <http://www.detini.gov.uk/index/what-we-do/deti-energy-index/deti-energy-ni-map.htm>

Appendix 2: RDS 2035, Table 3.2: Housing Evaluation Test (page 42)

<b>TABLE 3.2: Housing Evaluation Framework</b>	
<b>Resource Test</b>	Studies should be carried out to assess and detail the existence of community assets and physical infrastructure such as water, waste and sewage, including spare capacity.
<b>Environmental Capacity Test</b>	An assessment of the environmental assets of the settlement, the potential of flooding from rivers, the sea or surface water run-off and its potential to accommodate future outward growth without significant environmental degradation should be made.
<b>Transport Test</b>	Studies should be carried out to assess the potential for integrating land use and public transport and walking and cycling routes to help reduce reliance on the car.
<b>Economic Development Test</b>	The potential to facilitate an appropriate housing and jobs balance and to unlock any major strategic development opportunities should be assessed and detailed.
<b>Urban and Rural Character Test</b>	Assessment should be made of the potential to maintain a sense of place, and to integrate new development in a way that does not detract from the character and identity of the settlement.
<b>Community Services Test</b>	The potential to underpin and, where necessary, reinforce the community service role and function of the settlement should be assessed and detailed.

### Appendix 3: Information from NI Water at 2012 Relating to Waste Water Treatment Works and Capacities

KEY:	
1	Additional capacity currently available
2	Additional capacity available - Upgraded works programmed to be operational from March 2011
3	Some limited additional capacity available. This is a small Works which would be effected by significant growth. The impact of any proposed development would have to be analysed by NIW.
4	No additional capacity available. Works is included within the WWTWs PC10 New Start capital programme for the period April 2010 to March 2013. However delivery is dependant on funding being made available to NIW.
5	No additional capacity available. A review of headroom capacity and performance of the Works is required to ascertain capability of coping with additional loading
6	No additional capacity available

Statement of Headroom Capacity Availability at WWTWS in Northern Area Plan – note that this statement reflects the current situation and will change from year to year depending on the extent of development and other dischargers in the specific catchments, changes to the Water Order Consents, performance, condition and compliance of the works and capital works being carried out to WWTWS – asset performance team – 30 Nov 2010			
Settlements Served	Name of Works Serving	Category for additional capacity availability at WWTWS	District Council Area
Ballybogy	Ballybogy	1	Ballymoney
Cloughmills	Coughmills	1	Ballymoney
Derrykeighan	Derrykeighan	1	Ballymoney
Dervock	Dervock	5	Ballymoney
Dunloy	Dunloy	1	Ballymoney
Ballymoney	Ballymoney (Glenstall)	1	Ballymoney
Balnamore			
Bendooragh			
Carneatly			
Dunaghy			
Corkey Loughguile	Loughguile	1	Ballymoney
Magherahoney	Magherahoney	3	Ballymoney
Finvoy	Mullans	6	Ballymoney
Ballytober	Priestland	1	Ballymoney
Rasharkin	Rasharkin	1	Ballymoney
Stranocum	Stranocum	6	Ballymoney
Bushvale			
Boveedy	Boveedy	1	Coleraine
Glenullin	Brockaghboy	3	Coleraine

Craigavole	Craigavole	3	Coleraine
Garvagh	Garvagh	1	Coleraine
Kilrea	Kilrea	5	Coleraine
Macosquin	Macosquin	1	Coleraine
Boleran	Mayboy	6	Coleraine
Moneydig	Moneydig	6	Coleraine
Ringsend	Ringsend	3	Coleraine
Articlave	North Coast	1	Coleraine
Castlerock			
Castleroe			
Coleraine			
Portrush			
Portstewart			
Ballyrashane	Not Served		Coleraine
Drumagarner	Not Served		Coleraine
Clarehill	Clarehill	5	Coleraine
Glenkeen	Clarehill	5	Coleraine
Artikelly	Aghanloo	5	Limavady
Ardgarvan	Ardgarvan	6	Limavady
Ballykelly	Ballykelly	1	Limavady
Foreglen	Ballymonie	1	Limavady
Burnfoot	Bonnanboigh	1	Limavady
Dernaflaw	Dernaflaw	6	Limavady
Durmsurn	Drumsurn	6	Limavady
Bellarena	Drumavally*	5	Limavady
Dungiven	Dungiven	1	Limavady
Feeny	Feeny	1	Limavady
Glack	Glack	1	Limavady
Greysteel	Greysteel	1	Limavady
Gortnahey	Gortnahey	6	Limavady
Largy	Largy	6	Limavady
Limavady	Limavady	1	Limavady
Shanvey	Not Served		Limavady
Armoy	Armoy	5	Moyle
Ballintoy	Ballintoy	6	Moyle
Ballycastle	Ballycastle	6	Moyle
Ballyvoy	Ballyvoy	6	Moyle
Portballintrae	Bushmills	1	Moyle
Bushmills			Moyle
Cushendall	Cushendall	1	Moyle
Waterfoot			Moyle
Glenariff (Bay)			Moyle
Cushendun	Cushendun	1	Moyle
Knocknacarry			Moyle
Liscolman	Liscolman	1	Moyle

NI Water also provided commentary on a number of objections that sought the designation of new hamlets in the NAP.

#### WwTW – Wastewater Treatment Works

<input checked="" type="checkbox"/>	No WwTW immediately available.	
❶	Additional capacity available.	
❷	Additional capacity available.	Upgraded Works to be operational from 2011
❸	Some capacity available.	Impact of extensive development would require prior assessment
❹	No capacity available.	Works upgrade currently programmed in the period 2010-13
❺	No theoretical capacity.	Study required to ascertain actual situation
❻	No capacity	
Craigahullier, Portrush	❶	No catchment WwTW. Wastewater received by North Coast WwTW via pumping to Portrush catchment.
Terrydoo Rd, Limavady	<input checked="" type="checkbox"/>	No catchment WwTW. Nearest catchment is Drummond approx 4.2km away (capacity issues).
Ballydarrog, Limavady	<input checked="" type="checkbox"/>	No catchment WwTW. Nearest catchment is Dromore Highlands approx 1.2km away (no capacity).
Bolea, Limavady	❶	Catchment drains to Bolea WwTW which has no capacity issues.
Carneety, Castlerock	❻	Catchment drains to Longs Glebe WwTW which has no capacity.
Ballymadigan Rd, Castlerock	❶	No catchment WwTW. Wastewater received by North Coast WwTW via pumping to Coleraine catchment.
Loughan, Coleraine Mill Loughan, Coleraine	❶	No catchment WwTW. Wastewater received by North Coast WwTW via pumping to Coleraine catchment.
Killywool, Greysteel	❶	No catchment WwTW. Wastewater received by Greysteel WwTW.
Crindle, Limavady	❸	Catchment drains to Myroe WwTW which has capacity issues.
Fivey Rd, Armoy	❸	Catchment drains to Drones WwTW which has capacity issues.
Drumraighland, Limavady	❺ ❻	Catchment drains to Drumraighland WwTW and Dromore Highlands WwTW both of which have capacity issues.

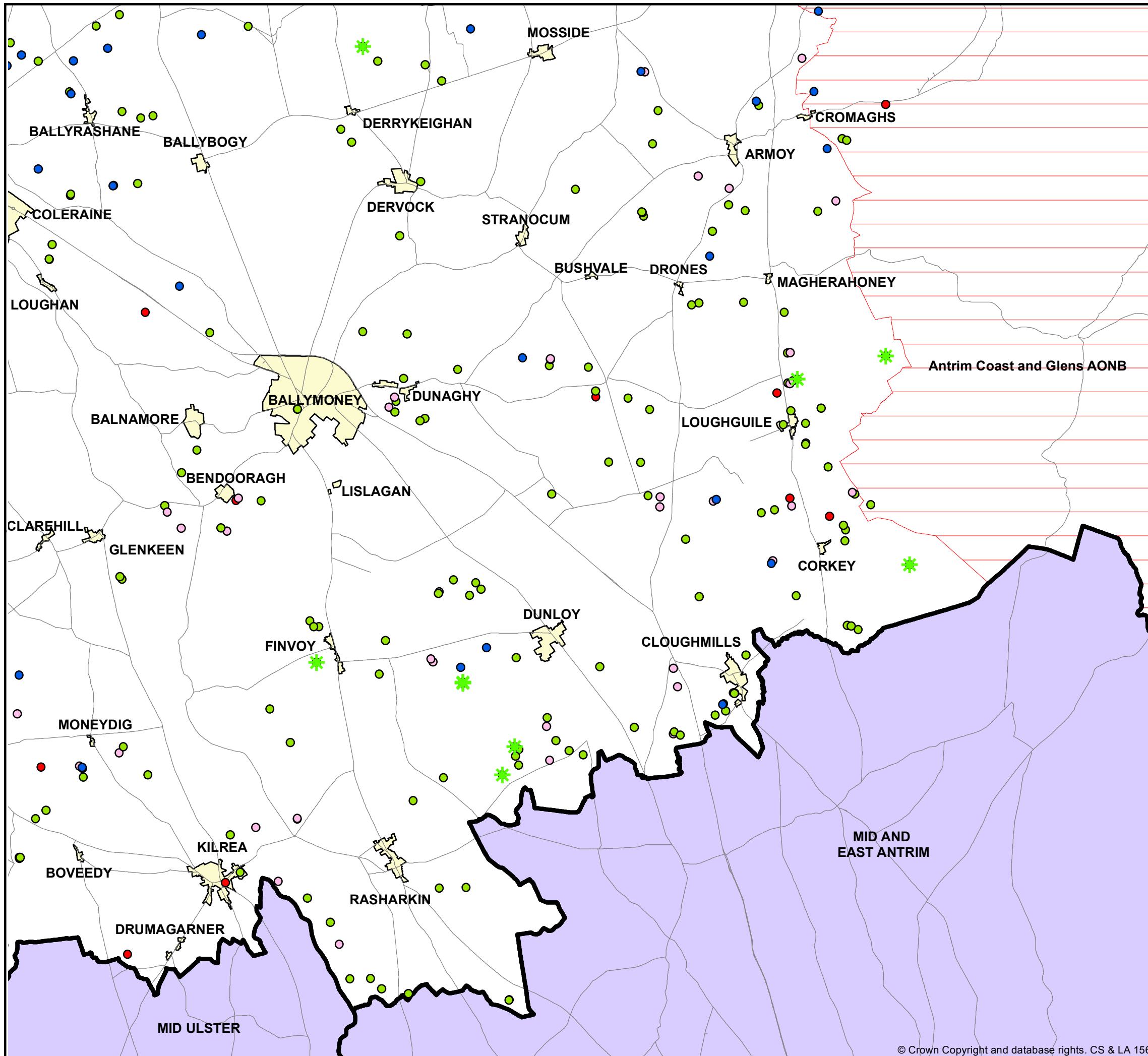
5186/4	Castlecat, Bushmills	<input checked="" type="checkbox"/>	No catchment WwTW. Nearest catchment is Bushmills approx 2.5km away (no capacity issues).
5597/136	Culcrow, Coleraine	⑥	Catchment drains to Culcrow WwTW which has no capacity.
5597/137	Windyhall, Coleraine	①	Catchment drains to North Coast WwTW via Coleraine catchment.
5704/709	Ballyscullion, Limavady		Assume this refers to Bellarena.
5704/711 5722/91	Carrowclare, Limavady	⑥	Catchment drains to Longs Glebe WwTW which has no capacity.
5704/714 5722/91	Myroe, Limavady	③	Catchment drains to Myroe WwTW which has capacity issues.
Corkey Rd,	Ballymoney	①	Area pumps to Loughguile WwTW via Corkey catchment
Tartnakilly,	Limavady	<input checked="" type="checkbox"/>	No map provided.
Macfin,	Ballymoney	①	Catchment drains to Macfin WwTW which has no capacity issues.
Glenshesk,	Moyle	<input checked="" type="checkbox"/>	Sewerage generally not available. Greenans WwTW on periphery. Other small Works are more remote including Tureagh & Ballynagard. All Works have capacity issues.

**Appendix 4:**

**Maps 5a-d: Distribution of Planning Applications for Windfarms and  
Single Wind Turbines**



Map No. 5a  
Ballymoney Area Wind Energy



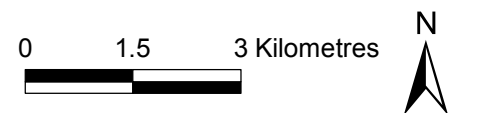
- Plan Area Boundary
- Settlement Development Limit
- Road Network
- Area of Outstanding Natural Beauty

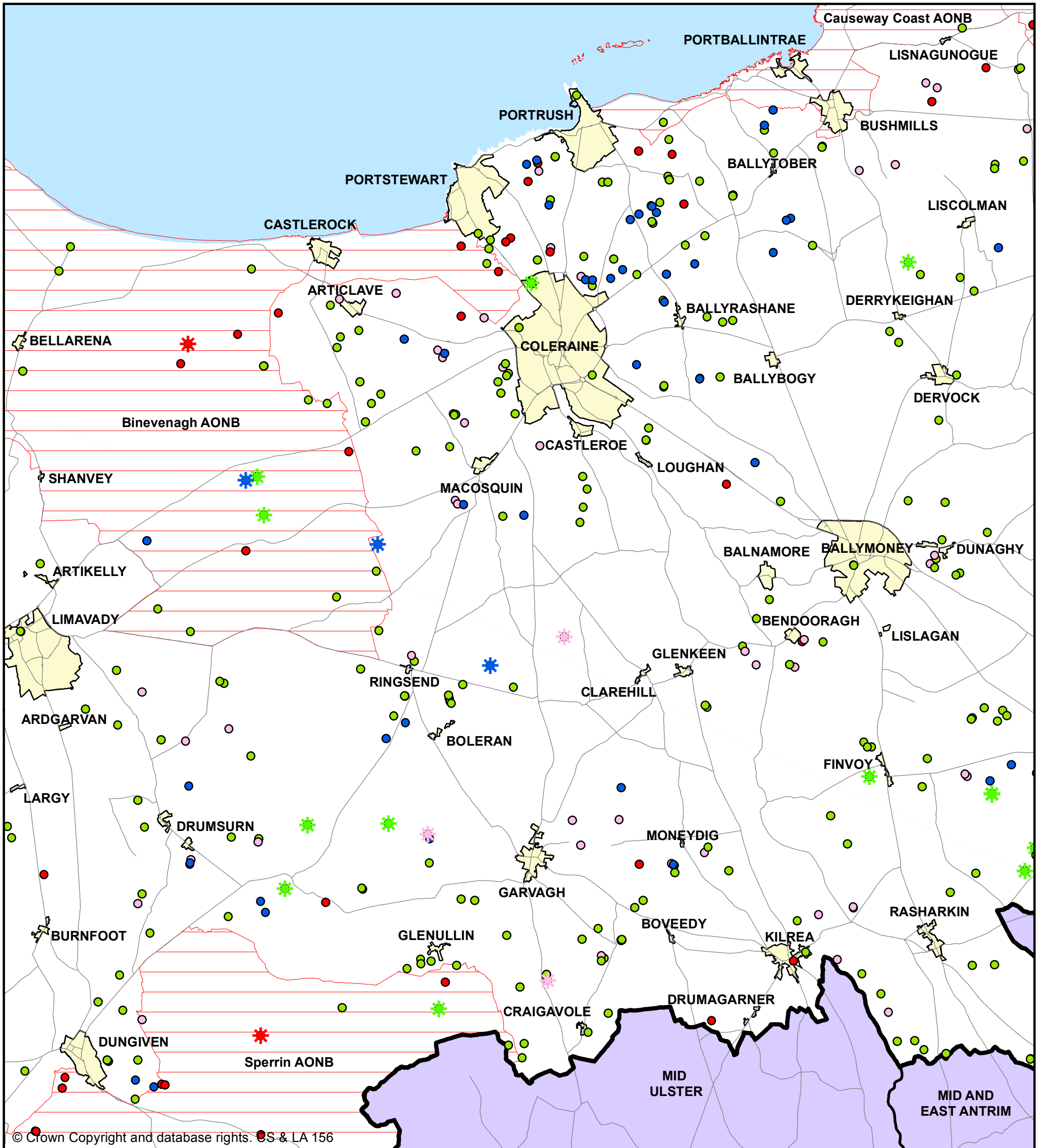
Planning Application Status - Single Turbine  
(31/12/2015)

- Approved
- Refused
- Pending
- Withdrawn

Planning Application Status - Wind Farm  
(31/12/2015)

- Approved
- Refused
- Pending
- Withdrawn





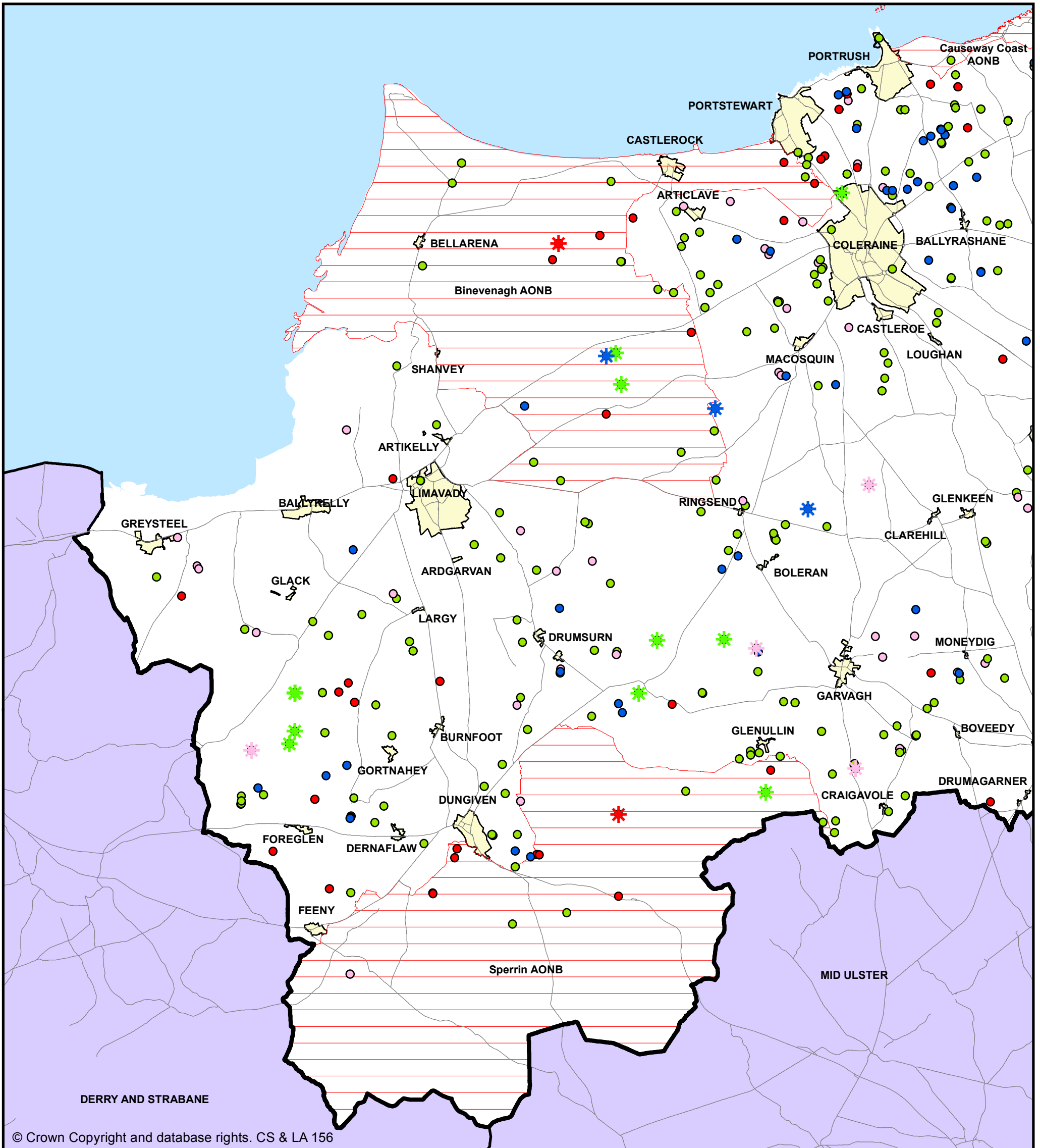
Causeway Coast and Glens Borough Council

Map No. 5b - Coleraine Area Wind Energy

- |  |  |   |
|--|--|---|
| <ul style="list-style-type: none"> <li> Plan Area Boundary</li> <li> Settlement Development Limit</li> <li> Road Network</li> <li> Area of Outstanding Natural Beauty</li> </ul> | <p>Planning Application Status - Single Turbine (31/12/2015)</p> <ul style="list-style-type: none"> <li> Approved</li> <li> Refused</li> <li> Pending</li> <li> Withdrawn</li> </ul> | <p>Planning Application Status - Wind Farm (31/12/2015)</p> <ul style="list-style-type: none"> <li> Approved</li> <li> Refused</li> <li> Pending</li> <li> Withdrawn</li> </ul> |
|--|--|---|

0 1.5 3 Kilometres

















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Causeway Coast and Glens Borough Council





Map No. 5c - Limavady Area Wind Energy

- |  |  |   |
|--|--|---|
| <ul style="list-style-type: none"> <li> Plan Area Boundary</li> <li> Settlement Development Limit</li> <li> Road Network</li> <li> Area of Outstanding Natural Beauty</li> </ul> | <p>Planning Application Status - Single Turbine (31/12/2015)</p> <ul style="list-style-type: none"> <li> Approved</li> <li> Refused</li> <li> Pending</li> <li> Withdrawn</li> </ul> | <p>Planning Application Status - Wind Farm (31/12/2015)</p> <ul style="list-style-type: none"> <li> Approved</li> <li> Refused</li> <li> Pending</li> <li> Withdrawn</li> </ul> |
|--|--|---|





0 2 4 Kilometres







**Map No. 5d**  
**Ballycastle Area Wind Energy**

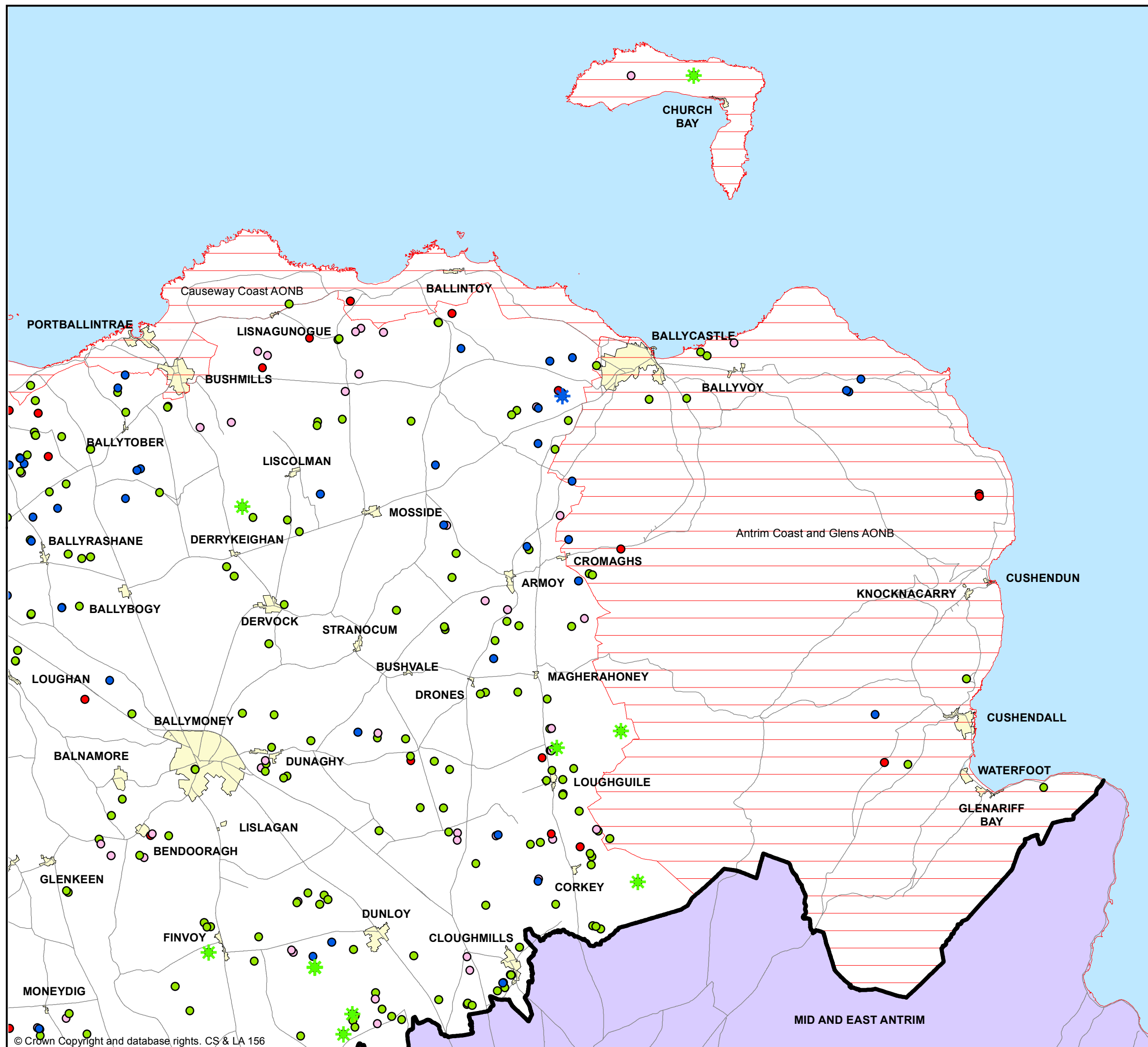
-  Plan Area Boundary
-  Settlement Development Limit
-  Road Network
-  Area of Outstanding Natural Beauty

Planning Application Status - Single Turbine  
(31/12/2015)

-  Approved
-  Refused
-  Pending
-  Withdrawn

Planning Application Status - Wind Farm  
(31/12/2015)

-  Approved
-  Refused
-  Pending
-  Withdrawn





**Appendix 5:**

**Map 6: Distribution of Planning Applications for Solar Farms  
See Separate Map**




**Map 7: Distribution of Planning Applications for Hydroelectric Schemes  
See Separate Map**

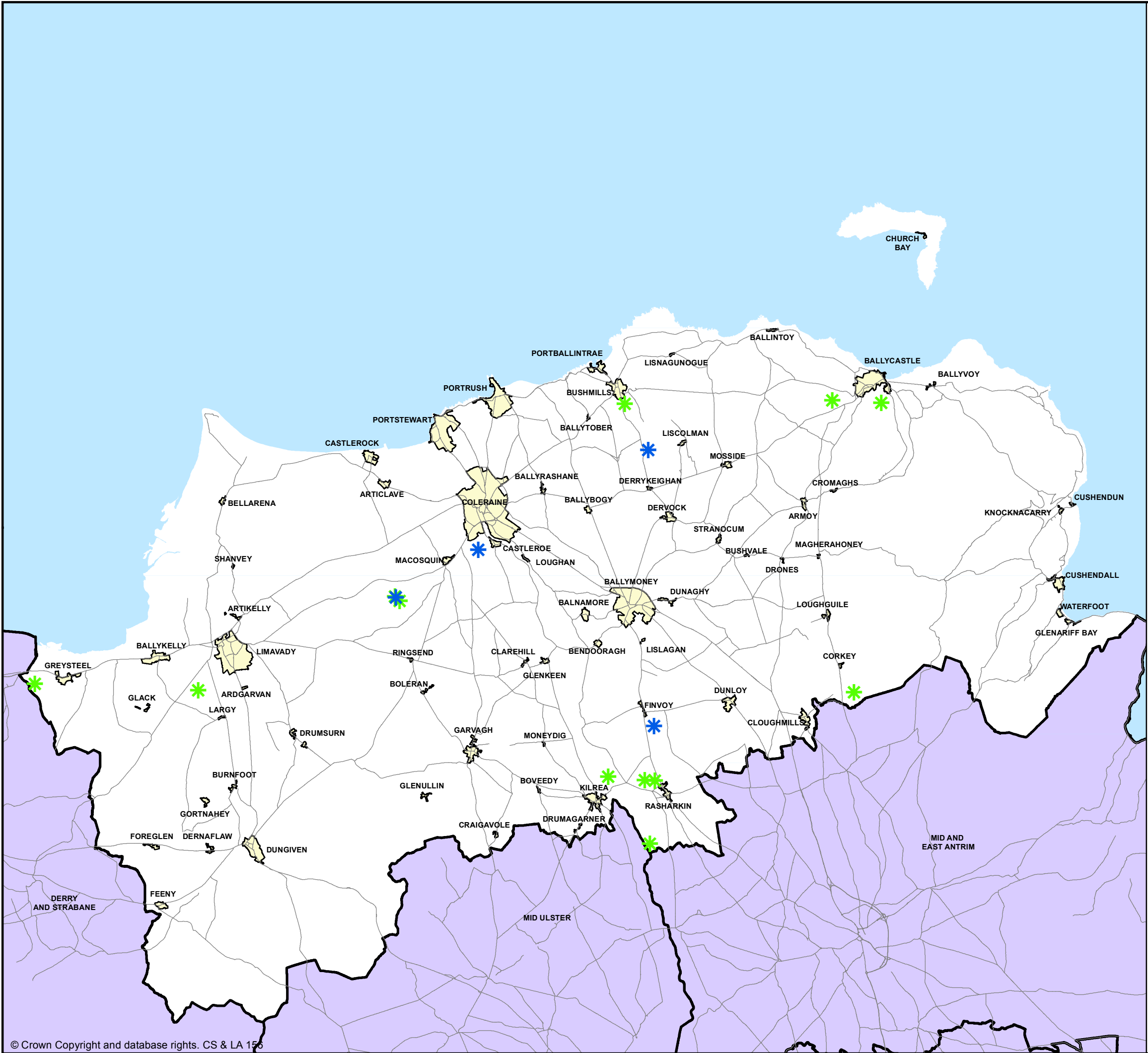
**Map 8: Distribution of Planning Applications for Anaerobic Digesters  
See Separate Map**

Map No. 6 - Solar Energy

-  Settlement Development Limit
-  Road Network

Planning Application Status (31/12/2015)

-  Approved
-  Refused
-  Pending










Map No. 7 - Hydroelectric Schemes

 Settlement Development Limit

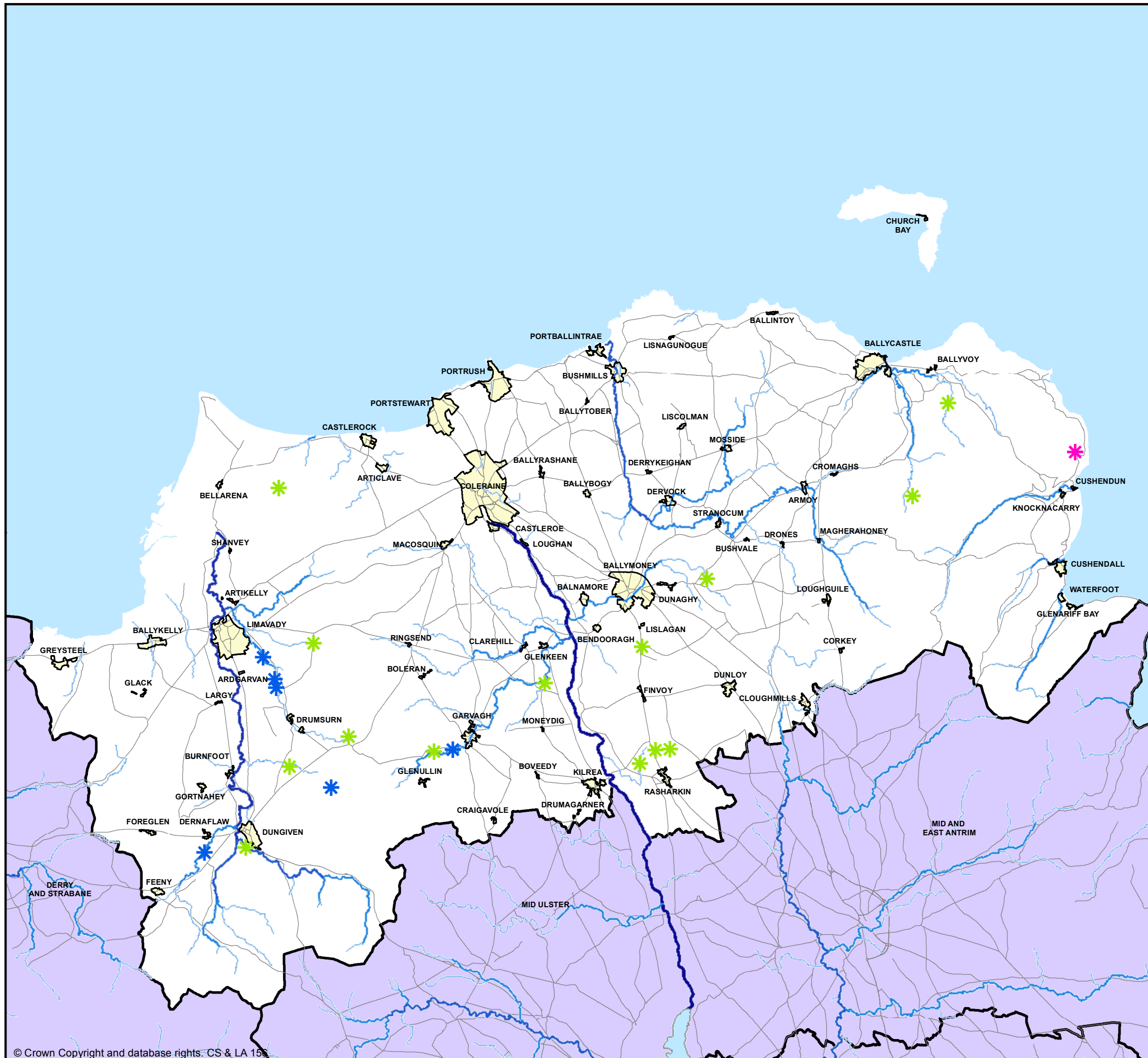
 Road Network

Stream Order (Strahler)



-  1
-  2
-  3
-  4
-  5
-  6
-  7

Planning Application Status (31/12/2015)



-  Approved
-  Pending
-  Withdrawn

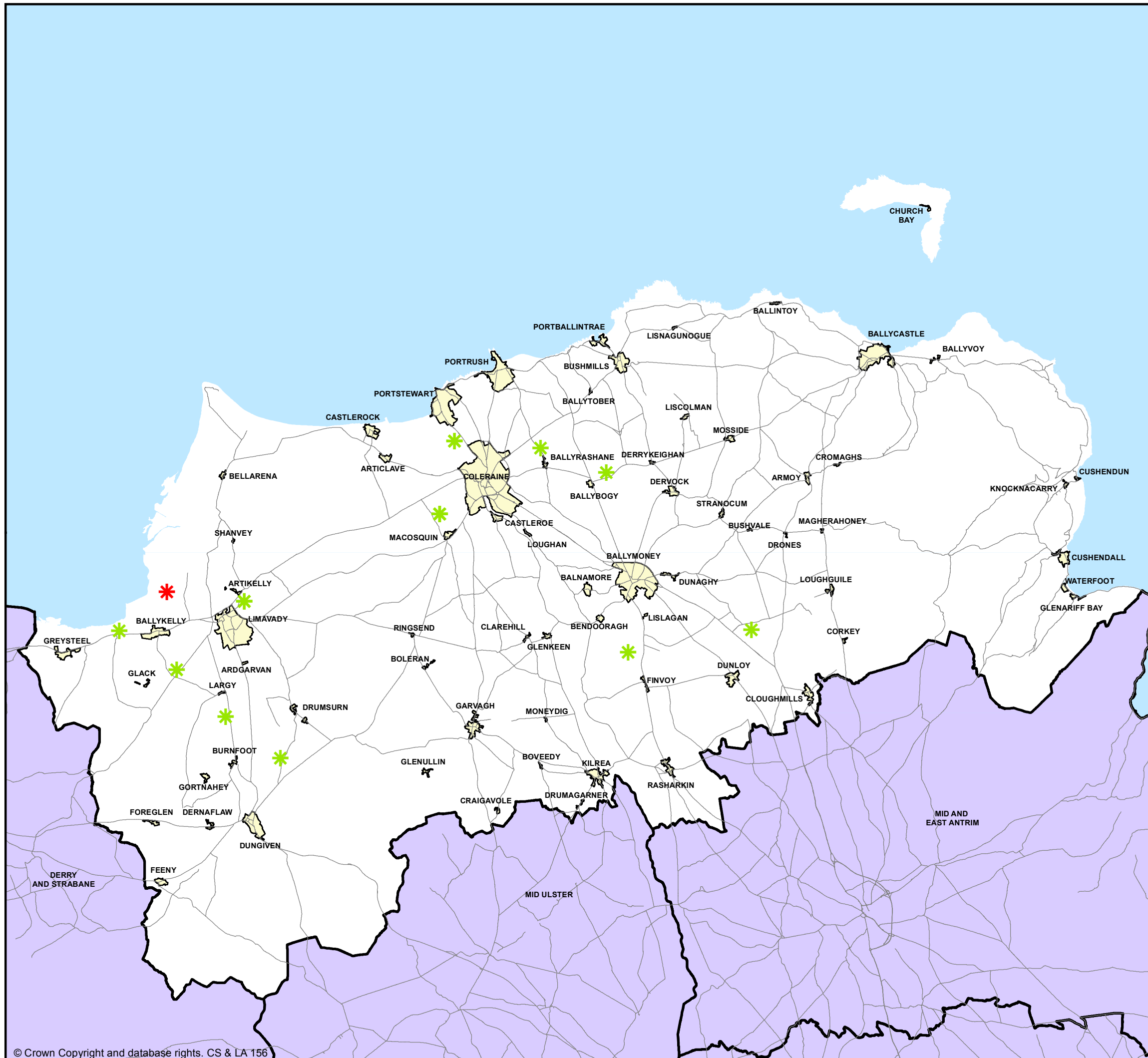


Map No. 8 - Anaerobic Digesters

-  Settlement Development Limit
-  Road Network

Planning Application Status (31/12/2015)

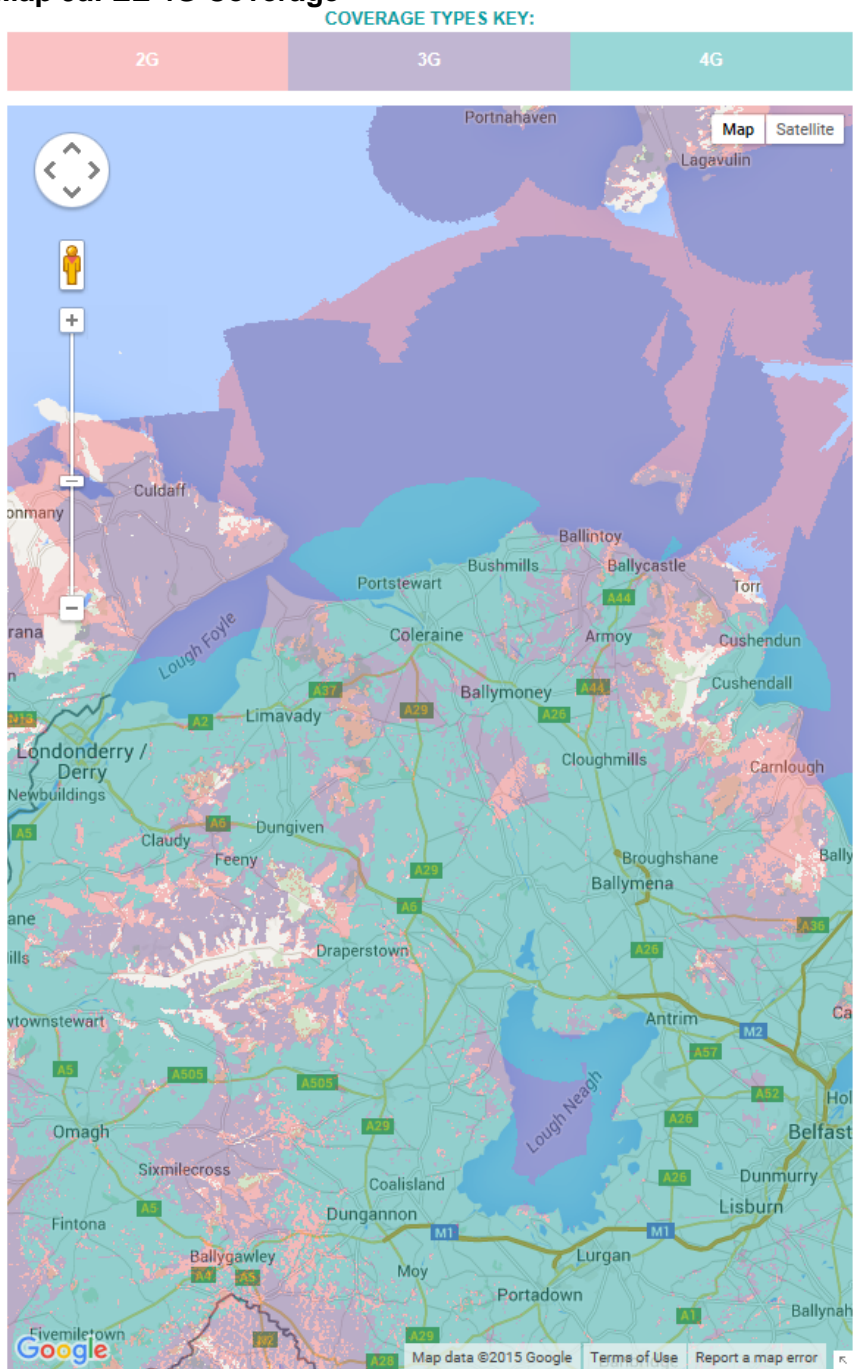
-  Approved
-  Refused





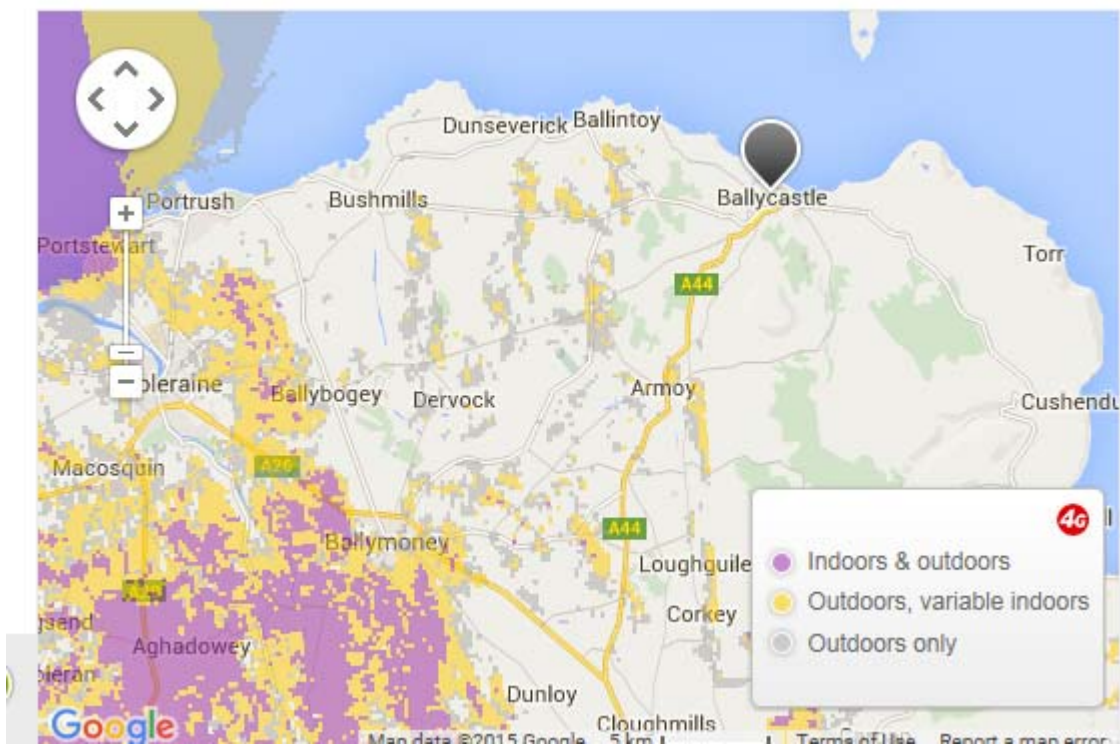
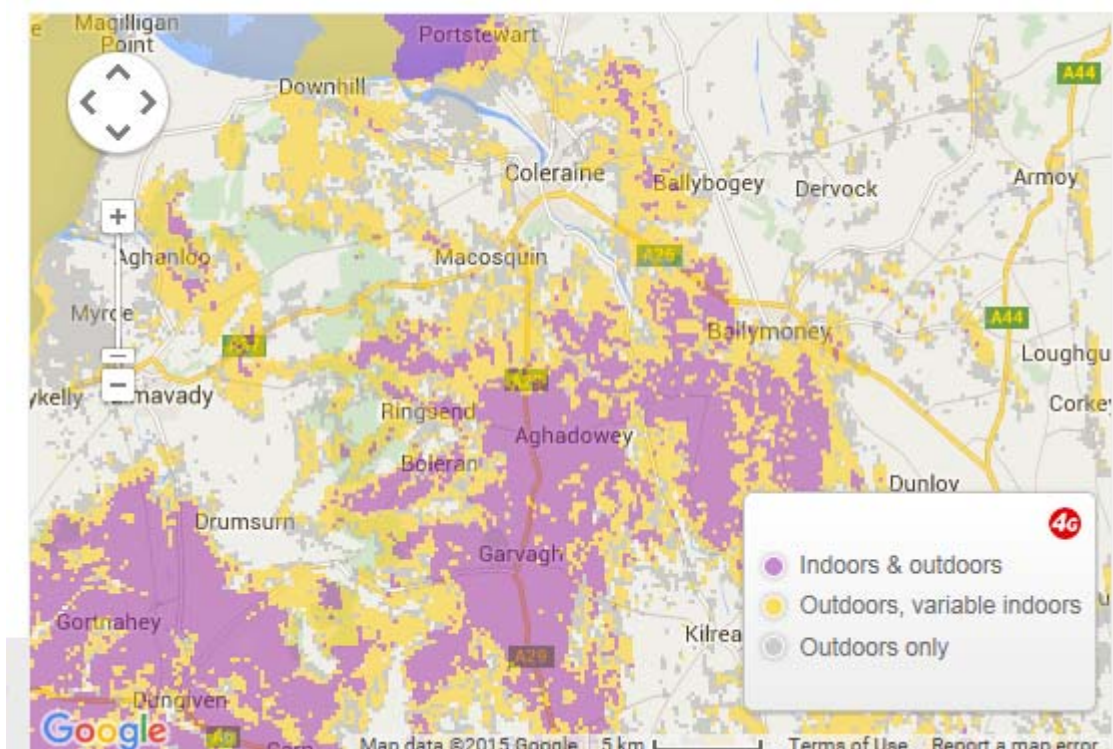
## Appendix 6: Maps 9a-f: 4G Mobile Data Coverage by Provider

### Map 9a: EE 4G Coverage



Source: <http://ee.co.uk/ee-and-me/network/4gee/coverage-checker>

## Maps 9b & c: Vodafone 4G Coverage



Source <https://www.vodafone.co.uk/explore/network/uk-coverage-map/index.htm>

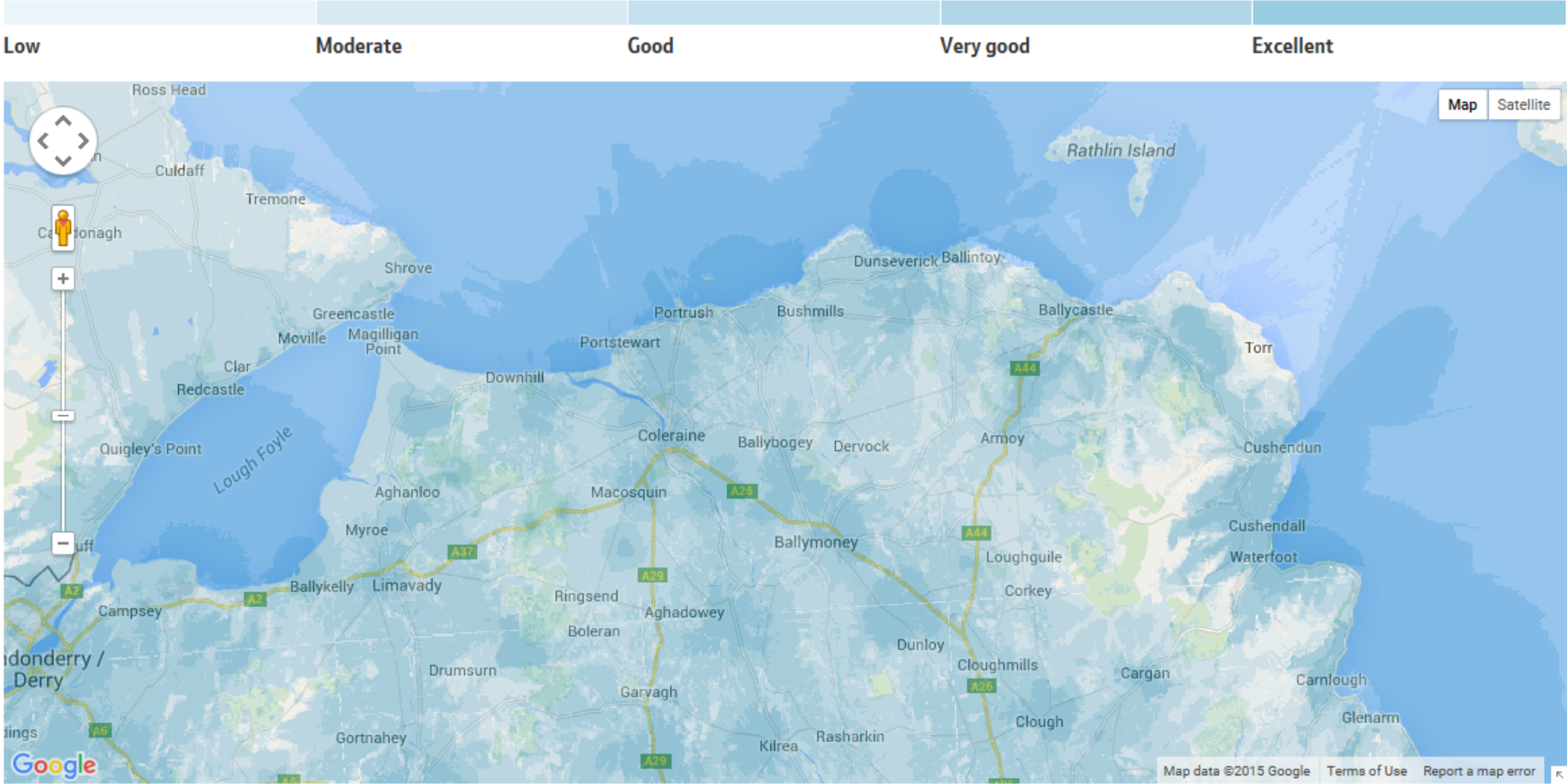
### Map 9d: O2 4G Coverage



Source: <http://www.o2.co.uk/coveragechecker>

# Map 9e: BT 4G Coverage

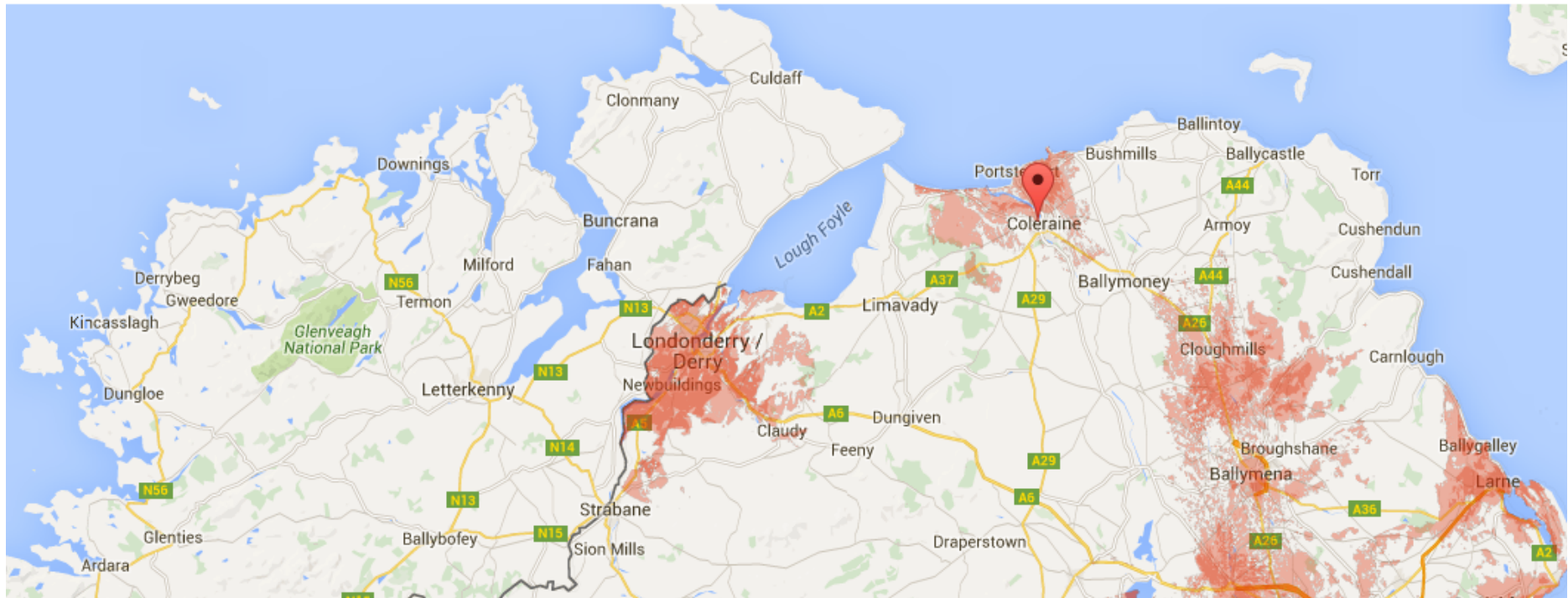
## Quality of coverage



Source: <http://www.productsandservices.bt.com/products/4g-coverage-checker>

### Map 9f: 4G Coverage by Three

● Indoor & Outdoor. ● Outdoor. ○ No Coverage.



Source: <http://www.three.co.uk/Discover/Network/Coverage?postcode=bt51+3hs>

**Appendix 7:**


**Map 10: City of Derry Airport: Notification Area, Critical Operational Area and Significant Operational Area**


**Map No. 10**  
**City of Derry Airport: Notification Areas**

 Settlement Development Limit





 Road Network

City of Derry Airport: Notification Areas.

 Critical Operational Area  
(No development)

 Significant Operational Areas  
(Robust Safety Mitigation Required)

Planning Application Status - Single Turbine  
(31/12/2015)

-  Approved
-  Refused
-  Pending
-  Withdrawn

Planning Application Status - Wind Farm  
(31/12/2015)

-  Approved
-  Refused
-  Pending
-  Withdrawn

0 2.5 5 Kilometres



**Appendix 8:**

**Map 11: Distribution of Council Waste Management and Recycling Facilities**



### Map No. 11 Council Waste Management and Recycling Facilities

- Settlement Development Limit
- Road Network

Type of Facility

- Civic Amenity Site
- Craighuliar Landfill Site
- Letterloan Compost Facility

