

# Local Development Plan | 2030

## Draft Plan Strategy

Evidence Paper 14: Flooding

June 2019

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## Executive Summary

- The Regional Development Strategy (RDS) and Strategic Planning Policy Statement (SPPS) urge the Planning System to adopt a precautionary approach to development in areas of flood risk and to use the latest flood risk information to properly manage development.
- The SPPS recognises that the planning system should help to mitigate and adapt to environmental change by working with natural environmental processes, for example the use of SuDS to reduce flood risk and improve water quality.
- The latest UK Climate Change Projections estimate that extreme events such as very heavy rainfall, dry spells and flooding will become commonplace in NI.
- The Local Development Plan (LDP) has an important role to play in helping to address climate change by bringing forward measures that seek to reduce greenhouse gas emissions and build environmental resilience.
- The preparation of the LDP affords the opportunity to bring forward planning policy with the aim of preventing future development that may be at risk from flooding or that may increase the risk of flooding elsewhere.
- The LDP aims to apply a strong presumption against development proposals within flood plains by avoiding flood plains when considering new land allocations for future development in the Local Policies Plan.
- DfI Rivers is responsible for dealing with flood risk and advises on the implications of development proposals on drainage and flood defence issues.
- Antrim and Newtownabbey falls within the North Eastern and Neagh Bann River Basin Districts (RBD). The North Eastern River Basin District (RBD), has a land area of just over 3000km<sup>2</sup> and a further 1000km<sup>2</sup> of marine waters. The Neagh Bann River Basin District (RBD) lies in the centre of Northern Ireland and includes Lough Neagh, the largest lake in Ireland, and the Bann River, which runs into and out of Lough Neagh. The Neagh Bann RBD has a total area of 8,085 km<sup>2</sup> including the marine elements.
- Further details of River Basins can be viewed on the [NIEA River Basin Viewer](#).
- There are 10 main watercourses/ivers in the Borough namely, Ballymartin River, Mallusk; Clady River, Dunadry; Crumlin River, Crumlin; Doagh River, Doagh; Dundesert River, Crumlin; River Maine, Randalstown; Six Mile Water, Antrim; Six Mile Water, Ballyclare; Three Mile Water, Newtownabbey; and Toome Canal, Toome.
- The Reservoir Act (NI) 2015 aims to ensure that controlled reservoirs are managed and operated to minimise any risk of flooding due to an uncontrolled release of water resulting from dam failure and therefore protecting people, the environment, cultural heritage and economic activity.
- Within Antrim and Newtownabbey 12 of these controlled reservoirs are located namely; Artoges Dam; Boghill Dam; Breckenhill Dam; Greenmount College;

Hydepark Dam; Lower Potterswall Reservoir; Millvale; Mossley Mill; Springvale; Straid Dam; Tildarg Dam and Upper Potterswall Reservoir.

- DfI Rivers have prepared an interactive [Reservoir Flood Map](#) showing the location of these reservoirs and the flood extent of these in the event of an uncontrolled release of water due to dam failure. DfI continually updates this interactive map.
- Flood Maps (NI) produced by DfI Rivers as an interactive map viewer, enables users to access the latest flood hazard information available from DfI Rivers. The Flood Maps (NI) provide a general overview of the flood risk in Northern Ireland and can be accessed on the [Flood Maps \(NI\) Viewer](#).
- The 2011 Preliminary Flood Risk Assessment (PFRA) identified 20 Significant Flood Risk Areas (SFRAs) for which detailed Flood Risk Management Plans (FRMPs) were prepared for the period 2015-2021.
- Flood Risk Management Plans highlight the flood hazards and risks in the most significant flood risk areas in Northern Ireland from flooding from rivers, the sea, surface water and reservoirs.
- Concerning the Council Area, the PFRA identified Glengormley/Mallusk, Newtownabbey and Antrim as 3 Significant Flood Risk Areas (SFRAs) with Ballyclare identified as an Area for Further Study (AFS).
- In 2018, the PFRA was updated and the 'The Northern Ireland Flood Risk Assessment (NIFRA) 2018' identified 45 flood risk areas across Northern Ireland.
- Concerning the Borough, Glengormley/Mallusk, Newtownabbey, Antrim and Ballyclare have been classed as flood risk areas, with an Annual Average Damages (AAD) value equating to £4.73 million. AAD value are the theoretical average economic damages caused by flooding.
- Out of the identified 45 Flood Risk Areas, 12 have been identified as Areas of Potential Significant Flood Risk (APSFR) and a further 9 identified as Transitional Areas of Potential Significant Flood Risk (TAPSFR).
- Glengormley/Mallusk, and Newtownabbey have been identified as 2 of the 12 Areas of Significant Flood risk with Antrim being identified as 1 of the 9 Transitional Areas of Potential Significant Flood Risk.
- Terrestrial planning extends to the Mean Low Water Mark while marine planning and licensing extend to the Mean High Water Mark, therefore the LDP will have to be cognisant of the emerging Marine Plan for NI.
- The coast of our Borough abuts Belfast Lough and includes the land, intertidal zone and the sea, and is approximately 7.5km in length.
- According to the North Eastern river basin FRMP 2015-2021 publication, the risk from tidal inundation in the Newtownabbey area is not considered significant. However, it states that the tidal influence on the watercourses should still be taken into account.

# 1 Introduction

- 1.1 This is one of a series of background papers and studies being presented as part of the evidence base to inform the preparation of the Antrim and Newtownabbey Local Development Plan 2030 (LDP). This paper draws together the evidence base used in relation to the topic of the Flooding. The evidence in this paper was collated at a point in time and may be subject to further updates. Evidence papers should be read collectively.
- 1.2 In line with Departmental guidance, the Council has updated its evidence base to inform the next stage of the LDP known as the Plan Strategy. This paper updates the 'Shaping Our Environment' baseline evidence paper, as it relates to Flood Risk, which accompanied the Preferred Options Paper (POP) published in January 2017. It should be noted that the evidence base collected to inform the draft Plan Strategy also forms the basis for additional assessments and appraisals required as part of the plan preparation process, most notably the Sustainability Appraisal.
- 1.3 Flooding is a natural process that cannot be entirely prevented and is defined as the covering or submerging of normally dry land with a large amount of water. The effects of flooding are wide ranging and can impact on a wide range of human activities and interests, the most obvious being the health and well-being of people directly caught up in flood events and the damage caused to property by flood water.
- 1.4 There are principally three sources of flooding:
- Rivers/Watercourses (Fluvial);
  - Coastal; and
  - Surface Water Runoff (Pluvial).
- 1.5 With regard to flood risk and addressing all phases of flood risk management cycle, there are three main themes:
- **Prevention:** The avoidance of, where possible new development in areas of flood risk, promoting appropriate land use, agricultural and forestry practices.
  - **Protection:** Structural and non-structural measures to reduce the likelihood and impact of floods.
  - **Preparedness:** Providing instructions to the general public on what to do in the event of a flood to their property and adapting existing property to the risk of flooding.
- 1.6 The planning system plays an important role in flood risk management insofar as it has a significant bearing on where development takes place and consequently can prevent or restrict new development in flood prone areas. The planning system can also positively contribute to helping address risks associated with environmental change, coastal/fluviol flood risk and measures to help address risks and its harmful impacts associated with surface water, such as Sustainable Drainage Systems (SuDS).

## **2 Legislative Context**

### **The Planning Act (Northern Ireland) 2011**

- 2.1 The Planning Act (Northern Ireland) 2011 (hereafter referred to as the 2011 Act) is the principal planning legislation in Northern Ireland, which underpins the reformed two-tier planning system that commenced on 1 April 2015. It introduced the Plan-Led system, where the LDP is the primary consideration for decision making on all new development schemes and proposals will be required to accord with its provisions unless exceptionally other material considerations indicate otherwise.
- 2.2 Under the new Planning System introduced in 2015, the LDP will comprise of two documents, a Plan Strategy and a Local Policies Plan that will be prepared in sequence. It also requires the LDP to be subject to a Sustainability Appraisal.

### **The Planning (Local Development Plan) Regulations (Northern Ireland) 2015**

- 2.3 These Regulations set out the sequence in which the Council's new LDP is to be prepared and provides detail on the content and procedure of each stage in the plan preparation process and Independent Examination.

### **The Planning (Statement of Community Involvement) Regulations (Northern Ireland) 2015**

- 2.4 These Regulations set out the sequence in which the Council's Statement of Community Involvement (SCI) is to be prepared and provides detail on the content and procedures required. The Council published its SCI in January 2016 the purpose of which is to define how the Council will engage with the community in the delivery of the LDP. It is set within the context of the Council's Corporate Plan and meets the requirements of the 2011 Act.

### **Northern Ireland (Miscellaneous Provisions) Act 2006**

- 2.5 Section 25 of the Northern Ireland (Miscellaneous Provisions) Act 2006 requires all NI Departments and Councils, in exercising their functions, to act in the way they consider best calculated to contribute to the achievement of sustainable development. Section 5 of the 2011 Act copper-fastens this duty by requiring those who exercise any function in relation to LDPs to do so with the objective of furthering sustainable development.

### **Local Government Act (Northern Ireland) 2014**

- 2.6 The Local Government Act (Northern Ireland) 2014 introduced a statutory link between Community Plan and the Council's LDP and requests that the preparation of the LDP must take account of the Community Plan.

### **Section 75 of the Northern Ireland Act 1998**

- 2.7 The Council has a statutory duty under Section 75 of the Northern Ireland Act 1998 as a public authority, in carrying out its functions relating to Northern Ireland, to have due regard to the need to promote equality of opportunity between the nine equality categories of persons of different religious belief, political opinion, racial group, age, marital status or sexual orientation; men

and women generally; persons with a disability and persons without; and persons with dependants and persons without.

- 2.8 Council has engaged and will continue to engage with Section 75 groups throughout the LDP process, adhering to the Council's SCI.

#### **Rural Needs Act (Northern Ireland) 2016**

- 2.9 The Rural Needs Act (NI) 2016 provides a statutory duty on public authorities to have due regard to rural needs when developing, adopting, implementing or revising policies, strategies and plans, and when designing and delivering public services and came into effect for Councils in June 2017.
- 2.10 Rural needs is an ongoing and integral component of the Council's LDP.

#### **The Environmental Assessment of Plans and Programmes Regulations 2004**

- 2.11 It is a statutory requirement that all plans and programmes that are likely to have a significant environmental effect must be subject to a Strategic Environmental Assessment (SEA). The European Union Directive '2001/42/EC' states that a SEA is mandatory and was transposed into local legislation in the form of The Environmental Assessment of Plans and Programmes Regulations (NI) 2004 (the EAPP (NI) Regulations). The objective of the SEA directive is to provide for a high level of protection of the environment and to contribute to the integration of environmental considerations in the Council's LDP, with the view to promoting sustainable development.
- 2.12 The SEA is an ongoing process and must be carried out in conjunction with, and integrated into the LDP process. Under the provisions of the SEA Directive and the Regulations, an Environmental Report is published with the LDP document.

#### **The Conservation (Natural Habitats, etc.) Regulations (Northern Ireland) 1995**

- 2.13 The LDP is required to consider its impact on the integrity of Natura 2000 sites (these comprise Special Areas of Conservation, Special Protection Areas and RAMSAR Sites) and will be subject to a Habitats Regulation Assessment (HRA). Similar to the SEA the HRA is an on-going process, which will take place at key stages during the preparation of the LDP. The Regulations contribute to transposing the requirements of the EC Habitats and Birds Directives.

#### **The Water and Sewerage Services Act (Northern Ireland) 2016**

- 2.14 The Water and Sewerage Services Act (Northern Ireland) 2016 requires any person proposing to connect a sewer or a lateral drain to a public sewer to obtain written approval on the basis of a mandatory sewer adoption agreement. This will be subject to conditions relating to quality standards, adoption and security.
- 2.15 Northern Ireland Water (NIW) is the statutory government authority responsible for the provision and maintenance of facilities for draining and depositing of surface water and run-off from roofs and any paved ground surface within the curtilage of premises. However, the service is only provided if it is within reasonable cost, in accordance with the Water and Sewerage Services (NI) Order 2006.

- 2.16 Clause 4 of the Act provides a definition of sustainable drainage systems for dealing with surface water from premises and provides the power to adopt specified SuDs structures. It places a requirement for SuDs to be considered and constructed where appropriate and for NI Water to refuse surface water connections to a public sewer.
- 2.17 The approval for surface water run-off from development will be under the responsibility of the water course management section of the Department for Infrastructure. With the exception of tidal estuaries and coastal waters, green field run-off should be considered as a normal starting point for design of development surface water drainage systems
- 2.18 NI Water will accept the design standards based on the CIRIA SuDs Manual C753 published in November 2015. It covers the planning, design, construction and maintenance of Sustainable Drainage Systems (SuDs) to assist with their effective implementation within both new and existing developments.

#### **The Reservoir Act (Northern Ireland) 2015**

- 2.19 The Reservoir Act (NI) 2015 aims to ensure that reservoirs are managed and operated to minimise any risk of flooding due to an uncontrolled release of water resulting from dam failure and therefore protecting people, the environment, cultural heritage and economic activity. This legislation applies to reservoirs that are capable of holding 10,000 cubic metres or more of water above the natural level of the surrounding land. These reservoirs are known as controlled reservoirs and their control and maintenance fall under the remit of DfI Rivers.

#### **The Water Environment (Floods Directive) Regulations (Northern Ireland) 2017**

- 2.20 The Flood Risks Directive 2007/60/EC was transposed into local legislation by The Water Environment (Floods Directive) Regulations (Northern Ireland) 2009, superseded by the 2017 legislation. Article 4 of the Directive requires that each member state undertakes a Preliminary Flood Risk Assessment (PFRA) for their respective territories.
- 2.21 Flood Risk Management Plans for Northern Ireland were produced by DfI Rivers (formerly known as Rivers Agency) to comply with the requirements of the Directive and the Regulations. The Directive places more emphasis on non-structural flood management measures (soft engineering techniques), such as using natural flood plains and wetlands to store water during floods and makes flood management a key part of the river basin management process under the Water Framework Directive.
- 2.22 The Flood Risk Management Plans highlight the flood hazards and risks in the most significant flood risk areas in Northern Ireland from flooding from rivers, the sea, surface water and reservoirs. The Plans identify the measures that will be undertaken over a six year period and they set out how the relevant authorities will work together to reduce the risk of flooding.

**Water (Northern Ireland) Order 1999**

- 2.23 DAERA NIEA's Water Management Unit (WMU) under the Water (Northern Ireland) Order 1999, has a duty to promote the conservation of the water resources of Northern Ireland and the cleanliness of the water in waterways and underground.
- 2.24 In doing this, the NIEA must take into account the needs of industry and agriculture, the protection of fisheries, the protection of public health, the preservation of amenities, and the conservation of flora and fauna.
- 2.25 The WMU protects the aquatic environment within the Borough through a number of activities including:
- Monitoring water quality;
  - Preparing water quality management plans;
  - Controlling effluent discharges;
  - Taking action to combat or minimise the effects of pollution;
  - Supporting environmental research; and
  - Co-ordinating the updating of river basin management plans with partners.

### **3 European Legislation**

**Blueprint to Safeguard Europe's Water Resources 2012**

- 3.1 The 'Blueprint' outlines actions that concentrate on better implementation of current water legislation, integration of water policy objectives into other policies, and filling gaps in particular as regards water quantity and efficiency. The objective is to ensure that a sufficient quantity of good quality water is available for people's needs, the economy and the environment.

**Directive 2007/60/EC on the Assessment and Management of Flood Risks 2007**

- 3.2 The Directive introduced in 2009, aims to reduce and manage risk that flooding poses to human health, the environment, cultural heritage and economic activity and applies to inland waters as well as all coastal waters across the whole territory of the EU. This directive provided a new approach to managing flood risk on a catchment wide scale by identifying the relevant river basins, and associated coastal areas at risk of flooding, the drawing up of flood maps and establishing flood risk management plans focused on prevention, protection and preparedness between 2011 and 2015.

**Directive 2000/60/EC - The Water Framework Directive**

- 3.3 The Water Framework Directive as amended by Directives 2008/105/EC, 2013/39/EU and 2014/101/EU established a new integrated approach to the protection of the water environment. The Directive is transposed in Northern Ireland through the Water Environment (Water Framework Directive) Regulations (Northern Ireland) 2009, now superseded by the 2017 version.

- 3.4 The Water Framework Directive (WFD) introduced a holistic approach to the management of water quality and required the protection and improvement of all aspects of the water environment including rivers, lakes, estuaries, coastal waters and groundwater. Following the introduction of the Directive into NI law, the Directive required 3 distinct preparatory stages;
1. **Preliminary Flood Risk Assessment (PFRA)** – The PFRA identified areas in NI which have the most significant flood risk, known as Significant Flood Risk Areas (SFRAs). The PFRA can be accessed via this link: - [Preliminary Flood Risk Assessment \(PFRA\)](#).
  2. **Flood Hazard and Risk Mapping** – These have been prepared for the SFRAs in NI and can be accessed via this link: - [Flood Maps \(NI\)](#).
  3. **Flood Risk Management Planning** - The Flood Risk Management Plans (FRMPs) highlight the flood hazards and risks in the most SFRAs in NI from flooding from rivers, the sea, surface water and reservoirs. They identify the objectives and measures that will be undertaken to address flooding and they set out how the relevant authorities will work together with communities to reduce the flood risks. The FRMPs for NI can be accessed via this link: - [Flood Risk Management Plans](#).
- 3.5 The Directive Timeline is geared to a rolling cycle so its three key stages must be repeated every 6 years to ensure that flood risk is managed effectively and that it takes account of new information and changes in risk.

## 4 Regional Policy Context

### Draft Programme for Government Framework 2016-2021

- 4.1 The key aim of the draft Programme for Government (PfG) is to grow a sustainable economy through investing in the future, tackling disadvantage, improving health and wellbeing, protecting the people and the environment, building a strong and shared community and delivering high quality services. The delivery of many of the strategic outcomes will be the responsibility of central government, however, the LDP will play a supporting role in helping to deliver many of these.
- 4.2 A key outcome of the PfG is the connection of people and opportunities through infrastructure. This involves improving the physical mobility of people and the provision of essential energy, water and telecommunications services.
- 4.3 Outcome 2 - We live and work sustainably – protecting our environment is the most relevant in relation to flooding. It is about benefiting from the goods and services that our natural environment provides, including food, renewable energy, water purification and flood mitigation. Progress on increasing environmental sustainability will contribute to the achievement of this outcome.

### Sustainable Development Strategy Northern Ireland 2010

- 4.4 The Government's Sustainable Development Strategy (SDS) Everyone's Involved was published in May 2010. The strategic objectives identified in this

strategy include climate change, promoting sustainable land management and managing development in ways that contribute to creating a better environment.

### **Regional Development Strategy 2035**

- 4.5 The Regional Development Strategy 2035 (RDS) recognises the need to avoid, where possible, the zoning of land for employment and housing where it is prone to flooding. It urges the planning system to adopt a precautionary approach to development in areas of flood risk and the use of the latest flood risk information to properly manage development. It also highlights the need to manage soils, protect peat habitats and protect soils in urban areas including the promotion of a more sustainable approach to the provision of water and sewerage services and flood risk management.

### **Strategic Planning Policy Statement 2015**

- 4.6 The aim of the Strategic Planning Policy Statement for Northern Ireland (SPPS) in relation to flood risk is to prevent future development that may be at risk from flooding, or from development that may increase the risk of flooding elsewhere. It aims to identify, develop and promote opportunities to create a more sustainable society elsewhere. The SPPS acknowledges that development can increase the consequences of flooding and identifies the important role of the LDP in zoning land so as to avoid and reduce the risks of flooding.
- 4.7 In the preparation of the LDP the SPPS states that the Council 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.
- 4.8 In addition, the Council must also take account of the most up to date information on flood risk, in particular that which is available on the Strategic Flood Map. It must also take account of the potential risks from flooding over the plan period and beyond, as this is likely to influence decisions on such matters as the zoning of land for development or open space. Furthermore, the Council should also promote sustainable drainage within the LDP area.

### **Regional Transportation Strategy for Northern Ireland 2002-2012**

- 4.9 The Regional Transport Strategy (RTS) for Northern Ireland 2002-2012 identifies strategic transportation investment priorities and considers potential funding sources and affordability of planned initiatives over the strategy period. The RTS is a 'daughter document' of the Regional Development Strategy for Northern Ireland 2035, which sets out the spatial development framework for Northern Ireland up to 2035.
- 4.10 This Strategy was supported by three initiatives namely Belfast Metropolitan Transport Plan 2004, Regional Strategic Transport Network Transport Plan 2015 and the Sub-Regional Transport Plan 2007.

### **Belfast Metropolitan Transport Plan 2004**

- 4.11 The Belfast Metropolitan Transport Plan (BMTP) 2004 is the local transport plan for the Belfast Metropolitan Area (BMA) including Metropolitan Newtownabbey.

This plan delivered a phased and costed implementation programme of transport schemes to 2015. This plan took forward the strategic initiatives of the RTS 2002-2012.

### **Regional Strategic Transport Network Transport Plan 2015 (2005)**

- 4.12 The former Department for Regional Development (DRD), now the Department for Infrastructure (DfI) prepared the Regional Strategic Transport Network Transport Plan (RSTN TP) 2015. The Plan is based on the guidance set out in the RDS 2035 and the RTS 2002-2012. The Plan presents a range of multi-modal transport initiatives to manage, maintain and develop Northern Ireland's Strategic Transport Network. The Regional Strategic Transport Network of Northern Ireland comprises the complete rail network, five Key Transport Corridors (KTCs), four Link Corridors, the Belfast Metropolitan Transport Corridors and the remainder of the trunk road network.

### **Sub-Regional Transport Plan 2007**

- 4.13 The Sub-Regional Transport Plan (SRTP) 2007 covers Antrim and takes forward the strategic initiatives of the Regional Transportation Strategy (RTS) for Northern Ireland 2002-2012. The SRTP deals with the transport needs of the whole of Northern Ireland with the exception of the BMA and the rail and trunk road networks, which are covered, in the BMA and RSTN TP.

### **Ensuring a Sustainable Transport Future – 'A New Approach to Regional Transportation' 2011**

- 4.14 Ensuring a Sustainable Transport Future (ESTF) was developed to build on the RTS for Northern Ireland 2002-2012 and to refocus and rebalance the investment in the future. Unlike the 2002 Strategy, Ensuring a Sustainable Transport Future (ESTF) does not include details of schemes or projects. Rather, the Department has set three High Level Aims for transportation along with twelve supporting Strategic Objectives, covering the economy, society and the environment. The ESTF complements the RDS 2035 and contains high-level aims and strategic objectives to support the growth of the economy, enhance the quality of life for all and reduce the environmental impact of transport. It sets out the approach to regional transportation and is used to guide strategic investment decisions beyond 2015. Work is progressing on the implementation of the ESTF and the Council will ensure that any future transportation projects affecting the Borough are appropriately reflected in the LDP.

### **Forthcoming Transport Plans**

- 4.15 The Department for Infrastructure is currently preparing new Transport Plans which will cover the Borough. This includes a new Regional Strategic Transport Network Plan for all of Northern Ireland and a new Belfast Metropolitan Transport Plan which will cover Belfast City Council, Lisburn and Castlereagh City Council, Ards and North Down Borough Council and Mid and East Antrim Borough Council as well as Antrim and Newtownabbey Borough Council. Antrim and Newtownabbey Borough Council is represented on the Project Boards for both plans along with other Councils.

- 4.16 As part of the preparation for the Belfast Metropolitan Transport Plan, the Department is preparing a Transport Study for the greater Belfast area and the Council has taken the emerging study into consideration in the preparation of its draft Plan Strategy. Work will also continue to bring forward the next stage of the LDP, the Local Policies Plan, alongside the Department's Transport Plans.
- 4.17 Further information on the Transport Study and Transport Plans is available on the Department of Infrastructure's website <https://www.infrastructure-ni.gov.uk/>.

### **Sustainable Water – A Long Term Water Strategy for NI 2015-2040**

- 4.18 This Strategy provides a framework for action, which will facilitate the implementation of a range of initiatives aimed at delivering the long-term vision to have a sustainable water sector in Northern Ireland. To achieve this vision the Strategy encourages a sustainable and integrated approach to managing all our different water needs in a way which promotes regional development, without compromising the environment or increasing flood risk.
- 4.19 Part 3 of the document entitled 'Flood Risk Management and Drainage' makes a number of recommendations to be considered when LDPs are being produced. The key aims identified in this section are:
- Deliver Sustainable Flood Resilient Development;
  - Manage the Catchment to Reduce Flood Risk;
  - Provide Sustainable Integrated Drainage in Rural and Urban Areas;
  - Improve Flood Resistance and Resilience in High Flood Risk Areas; and
  - Be Prepared for Extreme Weather Events.

### **NI Climate Change Adaptation Programme 2014**

- 4.20 As part of the Executive's obligations under the UK Climate Change Act 2008, the relevant Government Department are required to produce programmes to address the risks and opportunities identified in the UK Climate Change Risk Assessment. In response to this, the former Department of the Environment (DOE), now under the Department of Agriculture, Environment & Rural Affairs (DAERA) produced the NI Climate Change Adaptation Programme.
- 4.21 The latest UK Climate Change Projections <sup>1</sup> estimate that extreme events such as very heavy rainfall, dry spells and flooding will become commonplace in NI. The Adaptation Programme identifies flooding as a primary area for action, as it has been identified as potentially one of the most significant and urgent risks to affect Northern Ireland. Five high level actions have been identified to address the challenges of flooding. These actions will ensure that the impact of flooding on people, property, infrastructure and the environment will be reduced through awareness, avoidance, alleviation and assistance:

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<sup>1</sup> (<http://ukclimateprojections.metoffice.gov.uk/>)

- Develop and implement sustainable strategies to explore, address and manage significant flood risk;
- Build resilience of infrastructure to flooding and implement appropriate inspection and monitoring programmes;
- Identify and implement measures to reduce the impact of significant flood risk to people, property and the environment;
- Develop stakeholder understanding and awareness of significant flood risk and potential adaptation measures; and
- Identify the consequences of significant flood risk on the built heritage.

### **Managing Storm water – A Strategy for Promoting the Use of Sustainable Drainage Systems (SuDs) within Northern Ireland 2011**

4.22 The recommendations of this NIEA Strategy have been endorsed by the Northern Ireland Assembly's Environment Committee, and an inter-departmental agency (known as Stormwater Management Group (SMG)) has been established to facilitate implementation.

4.23 The key deliverables identified by the SMG to deliver implementation are as follows:

- Implementation strategy for sustainable drainage in Northern Ireland;
- Legislation which will enforce sustainable drainage;
- Technical guidance for the most effective sustainable drainage systems;
- Approval body which will assess and approve sustainable drainage proposals for new and retrofit schemes. This body will work closely with planning authorities; and
- New companies will be created to service the new sustainable drainage systems, creating new jobs.

### **Marine Plan for Northern Ireland (Draft)**

4.24 The draft Marine Plan for Northern Ireland will inform and guide the regulation, management, use and protection of our marine area. It is a single document made up of two plans, one for the inshore region and one for the offshore region. The LDP will seek to complement the draft Marine Plan where relevant.

### **Preliminary Flood Risk Assessment (PFRA) Northern Ireland**

4.25 A key objective of the PFRA was to identify areas of potentially significant flood risk for which detailed flood maps would be produced. Based on the PFRA, it was determined that detailed flood maps should be produced for 20 Significant Flood Risk Areas and 49 areas for further study. This work was completed in line with the EU Directive in 2013.

**Other Planning Policy**

- 4.26 Current operational planning policy, in relation to aspects of flooding, is primarily included within:
- Planning Policy Statement 15 (Revised) Planning and Flood Risk (DOE, 2014)
  - Planning Policy Statement 7 (Addendum): Safeguarding the Character of Established Residential Areas (DOE, 2010)
- 4.27 These PPSs, as well as the SPPS, have been taken into consideration in the formulation of the detailed development management policies, which are contained within the draft Plan Strategy document.

**Departmental Guidance**

- 4.28 The LDP has been prepared taking account of Departmental policy and guidance. Departmental policy and guidance are available by contacting the Department for Infrastructure.
- 4.29 The Development Plan Practice Note 7 'The Plan Strategy' published in 2015, guides officers and relevant users through the key requirements for the preparation of the Plan Strategy and deals primarily with procedures as well as good practice.

**Technical Advice Note (TAN): The Practical Application of Strategic Planning Policy for 'Development in Proximity to Reservoirs 2018**

- 4.30 This TAN sets out how DfI Rivers will apply its responsibilities with regard to the provisions of planning policy contained within the SPPS, together with the provisions of Policy FLD 5 of Planning Policy Statement (PPS) 15 (Revised 'Development in Proximity in Reservoirs'). The TAN sets out the general approach DfI Rivers will follow when sending advice to Planning Authorities on all relevant applications for development within the flood risk area of a controlled reservoir.

**Technical Flood Risk Guidance in relation to Allowances for Climate Change in Northern Ireland 2019**

- 4.31 The EU Floods Directive requires that Climate Change is taken into account in the assessment of flood risk. This Technical Flood Risk Guidance sets out DfI Roads, DfI Rivers and NI Water's approaches to allowing for Climate Change in the design of their respective road drainage, storm drainage and river infrastructure and in relation to flood risk management. The guidance advises that Climate Change flood mapping should be used for Development Management as opposed to the Present Day flood mapping which is current practice.
- 4.32 The Guidance states that the 2080s Climate Change flood maps have been agreed as a suitable epoch on which to base allowances for Climate Change for Development Planning and flood risk management. Consequently, DfI Rivers are currently revising their current Climate Change flood maps to reflect the agreed 2080 mapping. In the interim period, until the revision is complete, DfI

Rivers will use Climate Change flood mapping where available. Climate Change flood mapping is currently available for all undefended fluvial areas, all undefended coastal areas and all surface water flooding. Please note that DfI Rivers periodically updates its predictive Flood Mapping to take account of new information.

## 5 Local Policy Context

### Legacy Development Plans

- 5.1 The following is a list of the legacy development plans that apply to the Borough:
- Antrim Area Plan 1984-2001 and its alterations (AAP);
  - Belfast Urban Area Plan 2001 (BUAP) ;
  - Carrickfergus Area Plan 2001<sup>2</sup> (CAP);
  - Draft Newtownabbey Area Plan 2005 (dNAP); and
  - Draft Belfast Metropolitan Area Plan 2015 (dBMAP).
- 5.2 It should be noted that the Belfast Metropolitan Area Plan adopted in September 2014 was subsequently quashed as a result of a judgement of the Court of Appeal delivered in May 2017. As a consequence, the BUAP is now the statutory development plan for the Metropolitan Newtownabbey area of the Borough, with dBMAP remaining a material consideration.

### Community Plan – Love Living Here 2017

- 5.3 The Council's Community Plan, 'Love Living Here', sets out a shared vision and agreed outcomes for the area up to 2030. The successful implementation of the Community Plan will be marked by a demonstrable improvement in how services are delivered across our Borough and the quality of life our citizen's experience. As such, the Community Plan is an important document and has been taken into account in the preparation of the Council's LDP.
- 5.4 The Community Plan sets out four outcomes which are as follows:
- Our citizens enjoy good health and wellbeing;
  - Our citizens live in connected, safe, clean and vibrant places;
  - Our citizens benefit from economic prosperity; and
  - Our citizens achieve their full potential.
- 5.5 It also sets out one wildly important goal namely that our vulnerable people are supported. Both the health and education sectors are represented on the Council's Community Plan Working Group.

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<sup>2</sup> Insofar as it relates to that part of the legacy Carrickfergus Borough Council area at Greenisland that transferred to Antrim and Newtownabbey Borough in 2015 under Review of Public Administration (RPA).

## Corporate Plan – Our Borough Your Vision (2019-2030)

- 5.6 The Council's Corporate Plan sets out our vision for the Borough and identifies what we need to do between now and 2030 to achieve this. The Vision for the Borough up to 2030 is defined as,

*'A progressive, smart and prosperous Borough. Inspired by our people;  
Driven by ambition.'*

- 5.7 The Corporate Plan sets out a number of objectives in relation to Place, People and Prosperity. The LDP has a key role to play under the objective of 'Place' and the corporate plan states:

*'We will have succeeded if: People take pride in their surroundings.  
People feel safe. Our environment, natural habitats and built heritage are protected and enhanced. We have vibrant and welcoming towns, villages, neighbourhoods, and rural areas. We have an efficient planning process that promotes positive development and sustainable growth.'*

### Council Masterplans/Village Plans

- 5.8 Through the Village Renewal Scheme as supported by the Rural Development Programme 2014-2020 the Council benefited from funding to devise and update plans for the development of villages in the Borough. These village plans alongside the Council's masterplans will be considered in the preparation of the LDP where relevant.

### Cross Boundary Policy Context

- 5.9 In considering the local policy context, it is important to note that the Borough does not sit in isolation. Accordingly, it will be important to take account of our neighbouring local authorities comprising Belfast City Council; Lisburn and Castlereagh City Council; Armagh, Banbridge and Craigavon Borough Council; Mid Ulster District Council and Mid and East Antrim Borough Council.
- 5.10 Neighbouring Council's Preferred Options Papers, supporting evidence base and draft Plan Strategies have been taken account of, as these are regarded as the main cross boundary documents to be considered in addition to regional guidance.

**Table 1: Neighbouring Council Position**

Council	Document
Armagh City, Banbridge and Craigavon Borough Council (ACBCBC)	ACBCBC in their POP acknowledges the need to prevent inappropriate new development in areas known to be at risk of flooding, especially where it may increase the flood risk elsewhere. They also recognise the need to incorporate flood risk management measures in forthcoming developments. As stated in their POP, Key Issue 7 'Developing within areas of flood risk and Key Issue 8 'Encouraging Sustainable Drainage Systems (SuDS) relate specifically to flooding and are supported by two preferred options. The preferred option for Key Issue 7 is to adopt a precautionary approach (to areas currently subject to flood risk or in the future) in line with existing policy and regional

	<p>direction by having a presumption against development in flood plain other than in exceptional circumstances. ACBCBC understand that this approach will ensure that new development does not cause or exacerbate flooding elsewhere, now and into the future. The preferred option for Key Issue 8 is to bring forward a policy to encourage the use of Sustainable Drainage Systems (SuDS) in new development where appropriate. SuDS is the preferred method of managing surface water drainage within new urban development. ACBCBC consider this approach in keeping with the SPPS and RDS where they encourage a more sustainable approach to the provision of water and sewerage serviced and flood risk management. ACBCBC is currently working towards publication of its draft Plan Strategy publication.</p>
Belfast City Council (BCC)	<p>BCC Draft Plan Strategy sets out 4 themes, of which flooding is considered under the theme of 'Building a smart connected and resilient place'. Under this theme, BCC seeks to adapt to emerging environmental challenges through the encouragement of flood resilient design in new developments and through improvements to green and blue infrastructure networks as a means of managing future flood risk. Supporting this approach is set out under Policy ENV 4 Flood Risk. This policy deals with development in flood risk areas and sets out BCC's approach in determining planning applications within flood risk areas. This policy also seeks to take account of the SPPS planning policies relating to flood risk. BCC also recognise the benefits of implementing SuDS in development proposals, which is reflected in Policy ENV5 Sustainable Drainage Systems (SuDS). This policy sets out the requirements for SuDS with the onus on the applicant/developer to demonstrate that SuDS have been considered and appropriate measures have been incorporated into the design of proposals.</p>
Lisburn and Castlereagh City Council (LCCC)	<p>LCCC in their POP seeks to contribute towards reducing climate change by building in flood resilience, they also recognise the value of blue infrastructure in the form of SuDS. Concerning flood risk LCCC in their policy approach will continue to take account of the precautionary principle and seek to manage development to reduce the risks and impacts of flooding by;</p> <ul style="list-style-type: none"> <li>• Consulting with DfI Rivers;</li> <li>• Taking account of the most up to date information on flood risk;</li> <li>• Promoting sustainable drainage within the LDP area;</li> <li>• Applying 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; and</li> <li>• Ensuring LDPs do not bring forward sites or zone land that may be susceptible to flooding, unless in exceptional circumstances.</li> </ul> <p>LCCC is currently working towards publication of its draft Plan Strategy publication.</p>

Mid and East Antrim Borough Council (MEA)	<p>MEA in their POP highlight the need to manage development to avoid building in areas prone to flooding, coastal erosion and land instability. MEA understand that the most effective means of managing flood risk is to avoid the risk, by locating development outside the flood risk area, particularly where this is associated with a river or coastal flooding. MEA seeks to use the most up to date information on flood risk to take account of the potential risks from flooding over the Plan period and seek to adopt a precautionary approach in the identification of land. The POP also highlights MEA position to ensure that land identified as being at risk of flooding is not zoned for development, unless in exceptional circumstances. MEA through their preferred option 'Promote SuDS within the LDP' aims to encourage and developers to use SuDS as the preferred option for managing surface water in all new developments, where feasible either through general criteria based policy, or through key site requirements. MEA is currently working towards publication of its draft Plan Strategy.</p>
Mid Ulster District Council (MUDC)	<p>MUDC in their draft Plan Strategy under the theme of 'Enhancing the environment and improving Infrastructure' seeks to reduce flood risk and the adverse consequences of flooding, by promoting a more sustainable approach to flood risk management. MUDC have stated that it is their intention to adopt a precautionary approach to flood risk, regarding developments in areas susceptible to flooding. They state that their policies will only facilitate development in areas of surface water flooding when it is demonstrated through a Drainage Assessment that the risk can be effectively controlled and mitigated and will not create the potential for surface water flooding elsewhere. The Draft Plan Strategy also states that development within the flood inundation area of a controlled reservoir will be avoided unless it has been demonstrated that appropriate controls and safeguards are in place. Furthermore, as a general principle, MUDC is to encourage developers to use SuDS in areas susceptible to surface water flooding. Supporting MUDC approach to flood risk the draft Plan Strategy includes several policies namely;</p> <ul style="list-style-type: none"> <li>• Policy FLD 1 – Fluvial Floodplains</li> <li>• Policy FLD 2 – Development And Surface Water (Pluvial) Flood Risk Outside Flood Plains</li> <li>• Policy FLD 3 – Protection Of Flood Defence And Drainage Infrastructure</li> <li>• Policy FLD 4 – Development In Proximity To Reservoirs</li> <li>• Policy FLD 5 – Artificial Modification Of Watercourses</li> </ul>

5.11 The Council has responded to neighbouring Council's Preferred Options Papers and LDP documents as they are published. In addition, the Council is also represented on a number of working groups and Project Boards to discuss cross boundary issues. This includes the Metropolitan Area Spatial Working Group and the Belfast Metropolitan Plan Project Board.

- 5.12 In terms of growth across the region, it is the Council's view that no neighbouring Council's growth strategy should have a negative impact on Antrim and Newtownabbey Borough Council's Strategy in terms of resources for infrastructure provision provided for by statutory providers, including any necessary flooding requirements.
- 5.13 In consideration of neighbouring Council's documents as well as regional policy, it is the opinion of the Council that Antrim and Newtownabbey Borough Council's draft Plan Strategy is sound and is not in conflict with neighbouring Council's emerging LDPs.

## **6 Preferred Options Paper**

- 6.1 The Council's Preferred Options Paper (POP) was published in 2017 and was the first formal stage in the preparation of the LDP for the Borough and was designed to promote debate in relation to key strategic planning issues arising in the area. The POP set out a range of strategic options in relation to how and where development should be located within the Borough. It included options for our settlements, our centres, employment land and housing locations, as well as a number of other key planning issues.
- 6.2 In addition, the Council asked the public for their views on a range of planning topics and issues. A total of 148 representations were received which were considered during the development of the draft Plan Strategy document and, where relevant, these will also be considered during the preparation of the Local Policies Plan. Details are set out in the Council's published 'Preferred Options Paper Public Consultation Report 2019'.

## **7 Soundness**

- 7.1 The LDP is prepared to meet the tests of soundness as set out in the Department for Infrastructure's Development Plan Practice Note 6: Soundness (Version 2, May 2017).

## **8 Borough Context**

- 8.1 One of the most serious and complex challenges facing society today is climate change. A rise in greenhouse gas emissions and the resultant long-term changes in global weather patterns have increased the frequency of severe weather in recent years, resulting in flooding events originating both from rivers and from accumulations of surface water. When combined with rising sea-levels and the risk of seawater inundation, the impacts of global warming have the potential to harm people, property, infrastructure and the environment. Dealing with these impacts and undertaking associated remedial works is also extremely costly for the public and private sectors and this will only increase in the future if no action is taken. The LDP has an important role to play in helping

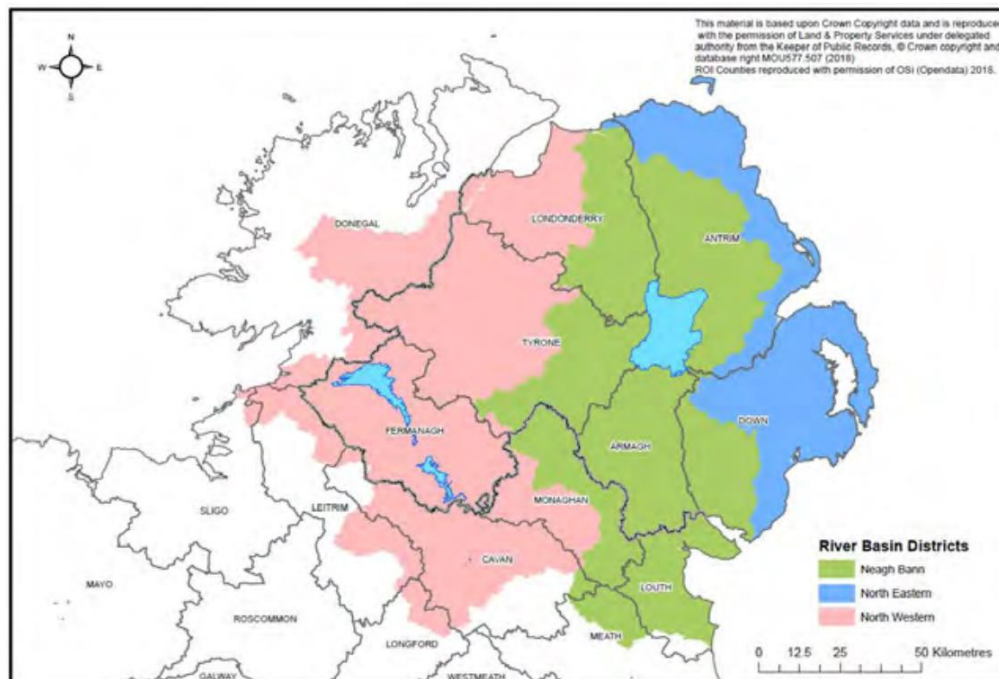
to address the challenges we now face by bringing forward measures that seek to reduce greenhouse gas emissions and build environmental resilience.

- 8.2 Environmental change is most likely to be observed in coming years by changing weather patterns and as a result, the frequency, pattern and severity of flooding events are expected to increase. New development itself can also exacerbate the problems of flooding by accelerating and increasing surface water run-off, altering watercourses and removing flood plain storage. Planning recognises that measures must be taken now to deal with the impacts of flooding and will encourage mitigation and adaptation, by encouraging development which builds environmental resilience.
- 8.3 There are a number of sources of flooding that may impact on our Borough. Both Antrim and Ballyclare as well as parts of Metropolitan Newtownabbey, have all been affected by fluvial (river) flooding in recent years, whilst parts of our short coastline onto Belfast Lough may be impacted by sea level rise in the future. There is an increasing risk of surface water flooding within our urban areas associated with an increase in impermeable surfaces and heavier rainfall events. In addition, controlled reservoirs represent a potential source of flood risk that can have serious consequences in the event of a breach or overtopping.

### River Basin Districts

- 8.4 Antrim and Newtownabbey falls within the North Eastern and Neagh Bann River Basin Districts as seen in Figure 1.

**Figure 1: River Basin Districts**



Source: *The Northern Ireland Flood Risk Assessment (NIFRA) 2018*

- 8.5 The North Eastern River Basin District (RBD), has a land area of just over 3000km<sup>2</sup> and a further 1000km<sup>2</sup> of marine waters. It takes in large parts of County Antrim, County Down and a small portion of County Londonderry. North of the Borough is flanked by the Antrim Plateau and Glens of Antrim and to the South is the Mourne Mountains, which include Slieve Donard, the highest peak in Northern Ireland. Over 0.7 million people live in the District which includes the most densely populated region of Northern Ireland, the Belfast Metropolitan Area, and the surrounding commuter areas including Lisburn, Newtownabbey, Carrickfergus, Bangor and Newtownards.
- 8.6 The Neagh Bann River Basin District (RBD) lies in the centre of Northern Ireland and includes Lough Neagh, the largest lake in Ireland, and the Bann River, which runs into and out of Lough Neagh. The Neagh Bann RBD has a total area of 8,085 km<sup>2</sup> including the marine elements. It drains parts of counties Louth, Meath, Cavan, Monaghan, Armagh, Tyrone, Derry / Londonderry, Antrim and Down.
- 8.7 Further details of River Basins can be viewed on DAERA's [River Basin Viewer](#).

### **Rivers and River Water Bodies**

- 8.8 A river is a natural flowing watercourse, usually freshwater, flowing towards an ocean, sea, lake or another river. The passage where the river flows is the riverbed and the earth on each side is a riverbank. A river begins on high ground or in hills or mountains usually beginning as a small stream, and gets bigger the farther it flows to lower ground.
- 8.9 DfI Rivers maintain and inspect watercourses in Northern Ireland to make sure these are free flowing to help prevent flooding and improve land drainage.
- 8.10 Within Antrim and Newtownabbey there are 10 main watercourses/ivers which are seen to be important environmental assets and resources, but also a source of flood risk. These comprise of;
- Ballymartin River, Mallusk
  - Clady River, Dunadry
  - Crumlin River, Crumlin
  - Doagh River, Doagh
  - Dundesert River, Crumlin
  - River Maine, Randalstown
  - Six Mile Water, Antrim
  - Six Mile Water, Ballyclare
  - Three Mile Water, Newtownabbey
  - Toome Canal, Toome
- 8.11 These main watercourses/ivers can be seen in Appendix 1 and are available to view on DAERA's [River Basin Viewer](#). The remaining watercourses in the Borough relate to drains, streams and burns, which can also be seen on the River Basin Viewer.
- 8.12 Water bodies are the basic management units for reporting and assessing compliance with the Water Framework Directive environmental objectives. There are 571 water bodies in Northern Ireland, of these, 496 are surface water bodies: including 450 rivers, 21 lakes, and 25 transitional and coastal waters

(Marine); the remaining 75 are groundwater bodies. The 2015 classification results<sup>3</sup> indicate 36.78% of are at good or better status. By 2021 DAERA aim to increase this to 69.8% with 99.1% at good or better status by 2027.

- 8.13 Antrim and Newtownabbey is broken down into 29 water bodies, for which watercourses within each area, as directed by the Water Framework Directive are assessed in terms of their quality. The breakdown of these water bodies is shown in Appendix 2, with Appendix 3 illustrating their quality and status.

### **Preliminary Flood Risk Assessment (PFRA) 2011**

- 8.14 In Northern Ireland, the then Department of Agriculture and Rural Development (DARD) now Department of Agriculture, Environment and Rural Affairs (DAERA) completed a Preliminary Flood Risk Assessment (PFRA) for river basins districts in December 2011.
- 8.15 The 2011 PFRA identified 20 Significant Flood Risk Areas (SFRAs) for which detailed Flood Risk Management Plans (FRMPs) were prepared for the period 2015-2021. In addition to identifying the SFRAs, any area, which was estimated to have a moderate risk of flooding, was classified as an Area for Further Study (AFS). In total, 49 AFS, were identified through the PFRA process. Concerning the Council Area, Glengormley/Mallusk, Newtownabbey and Antrim were identified as 3 Significant Flood Risk Areas (SFRAs) with Ballyclare identified as an Area for Further Study (AFS).
- 8.16 The Flood Risk Management Plans (FRMPs) highlight the flood hazards and risks from rivers, the sea, surface water and reservoirs and set out how the relevant authorities will work together, and with communities, to reduce flood risk. The relevant FRMPs relating to the Borough are North Eastern river basin FRMP and Neagh Bann river basin FRMP, both of these including the others can be found on the DfI website at the following link [Flood Risk Management Plans 2015-2021](#).
- 8.17 These plans provide a wide array of data on flood risk, which enables discussion to take place with other stakeholders on alternative methods of flood mitigation and for the wider impacts on the environment to be better understood. The Council must, therefore, ensure that the LDP is compatible with these Flood Risk Management Plans as they contain specific advice relating to the Council area.

### **The Northern Ireland Flood Risk Assessment (NIFRA) 2018**

- 8.18 The Floods Directive requires that the PFRA is reviewed and updated. This has been carried out and an updated technical assessment 'The Northern Ireland Flood Risk Assessment (NIFRA) 2018'<sup>4</sup> has been produced. According to the NIFRA, approximately 5% of the 861,000 properties in Northern Ireland are located within either the 1% AEP fluvial floodplain or the 0.5% AEP coastal floodplain or are sited in areas at risk of flooding from a 0.5% AEP pluvial event with a flood depth greater than 300mm.

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<sup>3</sup> [Northern Ireland Water Body Status 2015](#)

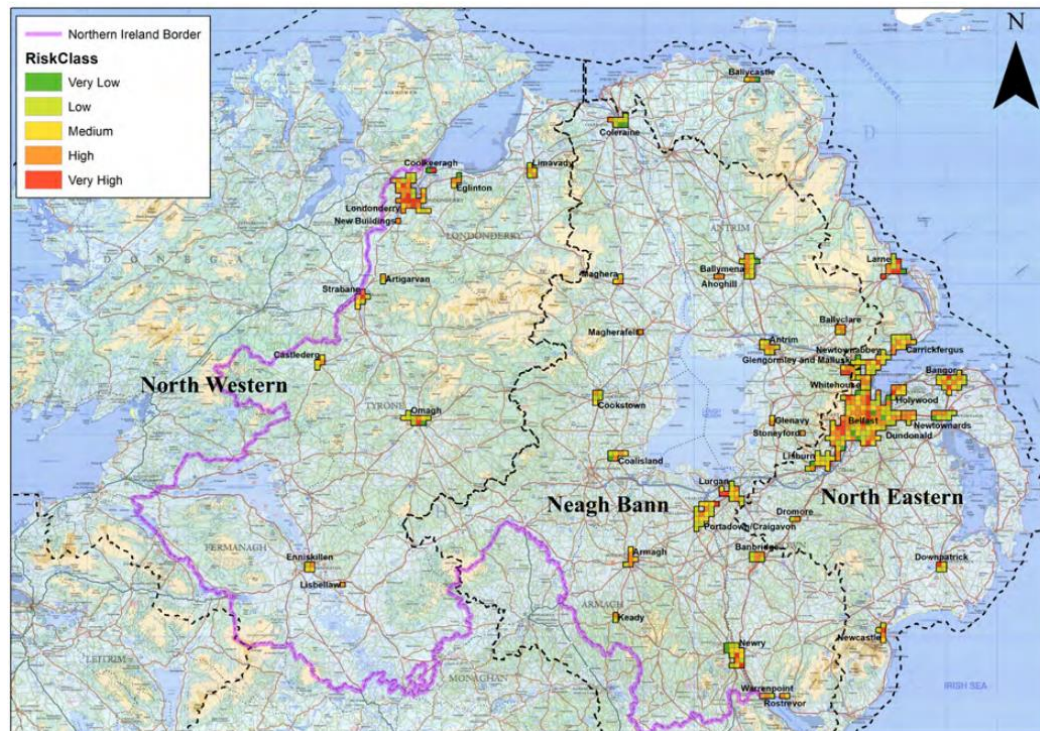
<sup>4</sup> [The Northern Ireland Flood Risk Assessment \(NIFRA\) 2018](#)

8.19 Following a review of the 2011 PFRA, the NIFRA 2018 has identified 45 flood risk areas. These are shown in Table 2 and Figure 2 including the Aggregated Annual Average Damages (AAAD) value (£) for each area. Annual Average Damages are the theoretical average economic damages caused by flooding when considered over a very long period. The table indicates that Glengormley and Mallusk, Newtownabbey, Antrim and Ballyclare have been classed as flood risk areas, with an AAAD value equating to £4.73 million.

**Table 2: Northern Ireland Flood Risk Areas**

Rank	Area Name	AAAD (£ Millions)	Rank	Area Name	AAAD (£ Millions)
1	Belfast	16.18	23	Ballyclare	0.58
2	Londonderry	5.56	24	Coolkeeragh	0.54
3	Newry	4.07	25	Downpatrick	0.53
4	Lurgan	2.31	26	Coalisland	0.49
5	Glengormley and Mallusk	2.09	27	Limavady	0.46
6	Larne	2.03	28	Coleraine	0.46
7	Bangor	1.84	29	Warrenpoint	0.40
8	Portadown and Craigavon	1.81	30	Cookstown	0.40
9	Omagh	1.70	31	Eglinton	0.35
10	Newtownabbey	1.44	32	Maghera	0.32
11	Carrickfergus	1.17	33	Ahoghill	0.30
12	Ballymena	1.07	34	Enniskillen	0.29
13	Whitehouse	0.93	35	Castlederg	0.28
14	Strabane	0.91	36	Rostrevor	0.26
15	Dundonald	0.88	37	Lisbellaw	0.25
16	Lisburn	0.79	38	Glenavy	0.23
17	Newtownards	0.77	39	Keady	0.21
18	Holywood	0.75	40	Ballycastle	0.21
19	Armagh	0.71	41	Stoneyford	0.18
20	Newcastle	0.66	42	Dromore	0.18
21	Banbridge	0.63	43	New Buildings	0.15
22	Antrim	0.62	44	Artigarvan	0.15
			45	Magherafelt	0.12

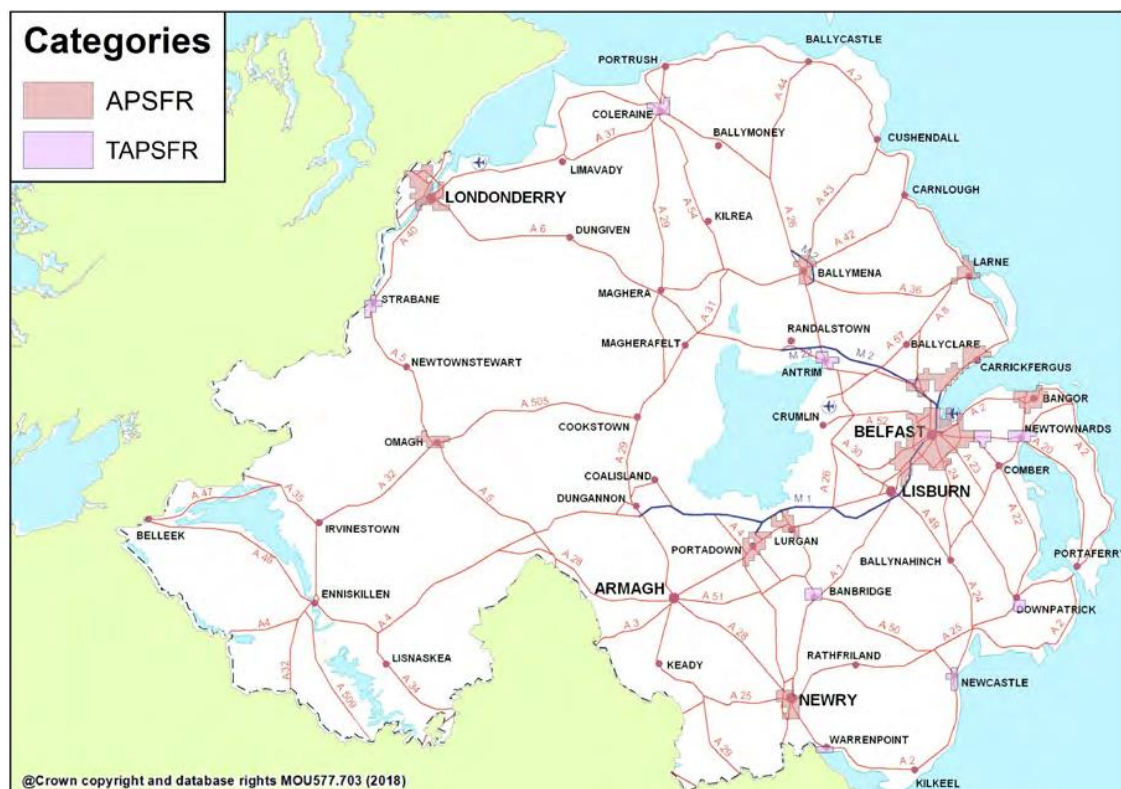
Source: *The Northern Ireland Flood Risk Assessment (NIFRA) 2018*

**Figure 2: Northern Ireland Flood Risk Areas**

Source: The Northern Ireland Flood Risk Assessment (NIFRA) 2018

- 8.20 Out of the identified 45 Flood Risk Areas, 12 have been identified as Areas of Potential Significant Flood Risk (APSFR) and a further 9 identified as Transitional Areas of Potential Significant Flood Risk (TAPSFR). These 9 areas were assessed in the 2011 PFRA as APSFR and have been given this classification to ensure continuity between Flood Risk Management Plans (FRMPs) and facilitate the implementation of any outstanding commitments arising from delivery of objectives and measures within the 2015 – 2021 FRMPs.
- 8.21 For each APSFR identified, the Floods Directive Regulations require that flood hazard and flood risk maps are reviewed and updated. Flood Risk Management Plans (FRMPs) for the period 2021 – 2027, aimed at managing and mitigating the risk of flooding within APSFRs, are currently being prepared by DfI Rivers and will be published for public consultation by 22 December 2020. These FRMPs will supersede the existing 2015-2021 FRMPs. For further information on the new FRMPs, visit [Flood Risk Management Plan 2021-2027](#).
- 8.22 In relation to the Borough, Glengormley/Mallusk, and Newtownabbey have been identified as 2 of the 12 Areas of Significant Flood risk with Antrim being identified as 1 of the 9 Transitional Areas of Potential Significant Floods Risk. These areas are seen in Figure 3 and the associated summary reports are included in Appendix 4.

**Figure 3: Areas of Potential Significant Flood Risk (APSFR) and Transitional Areas of Potential Significant Flood Risk (TAPSFR)**



Source: The Northern Ireland Flood Risk Assessment (NIFRA) 2018

- 8.23 With increasing incidents of flooding occurring due to the effects of ongoing climate change it is essential that the policies of the LDP address flood risk matters and take account the existing and forthcoming Flood Risk Management Plans (FRMPs).

## 9 Flood Maps NI

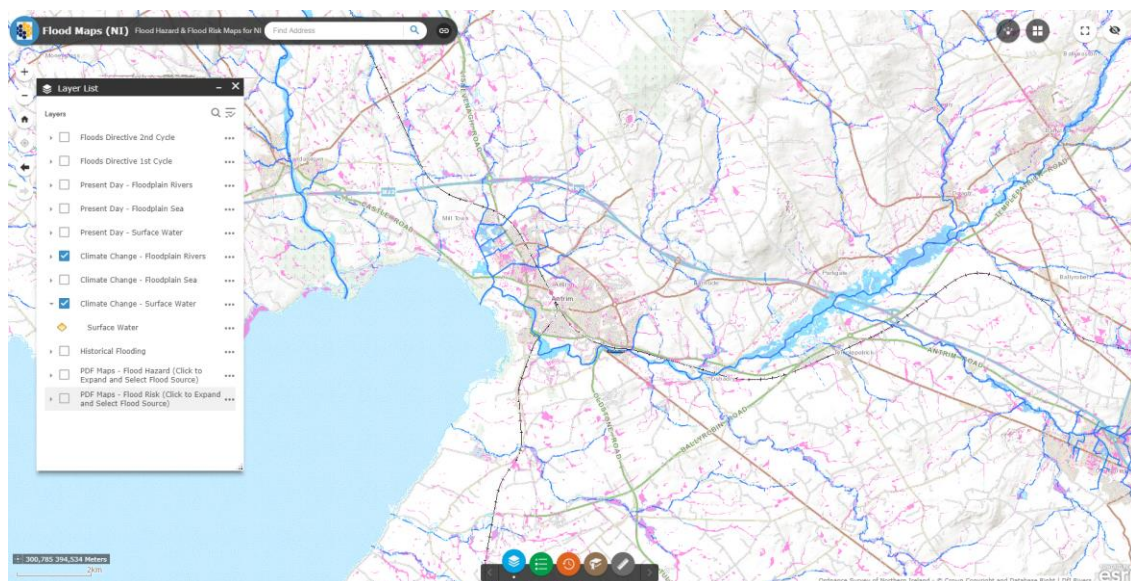
- 9.1 DfI Rivers is responsible for dealing with flood risk and advice on the implications of development proposals on drainage and flood defence issues.
- 9.2 Flood Maps (NI)<sup>5</sup> are produced by DfI Rivers as an interactive map viewer which enables users to access the latest flood hazard information available and provide a general overview of the flood risk in Northern Ireland. The maps have been produced in accordance with the requirements of the EU Floods Directive. Its main aim is to increase awareness among the general public, local authorities and other organisations, of the likelihood of flooding and to encourage them to take appropriate action to manage the risk.
- 9.3 DfI Rivers first published flood maps in November 2008. This first generation of maps, known as the Strategic Flood Map (NI) Rivers & Sea, was developed to provide an indication of the general areas throughout Northern Ireland that may be prone to flooding from rivers and the sea. A strategic surface water

<sup>5</sup> [Flood Maps NI](#)

flood map was subsequently published in December 2011 and the name of the map service was changed to the Strategic Flood Map (NI).

- 9.4 The Strategic Flood Map was used in the Preliminary Flood Risk Assessment for NI (PFRA), which was completed in December 2011 in compliance with the EU Floods Directive. On the basis of the PFRA, it was determined that detailed flood maps should be produced for 20 Significant Flood Risk Areas and 49 Areas for Further Study and this work was completed as required by the EU Directive in December 2013. The detailed maps for the 69 areas are now hosted within Flood Maps (NI).
- 9.5 Figure 4 shows an extract from the Flood Map NI interactive web viewer. The information shown on the map relates to Climate Change mapping for rivers and surface water. It's important to note that this mapping service is managed and updated continually by DfI Rivers.
- 9.6 There are two main elements to the Flood Maps (NI), the Indicative Flood Maps and the Detailed Flood Hazard Maps incorporating Flood Hazard and Flood Risks maps.

**Figure 4: Extract from Flood Maps NI**



Source: DfI Flood Maps NI

### Indicative Flood Maps

- 9.7 The purpose of the interactive Indicative Flood Maps is to illustrate the general areas that have flooded in the past and those which are considered to be at a medium risk of flood now and in the future. They should be used only to identify 'general areas' that may be prone to flooding from medium probability flood events, and cannot be used to predict flood risk at a particular property or specific point location. Users are unable to view the map at a scale that would enable them to identify individual properties.

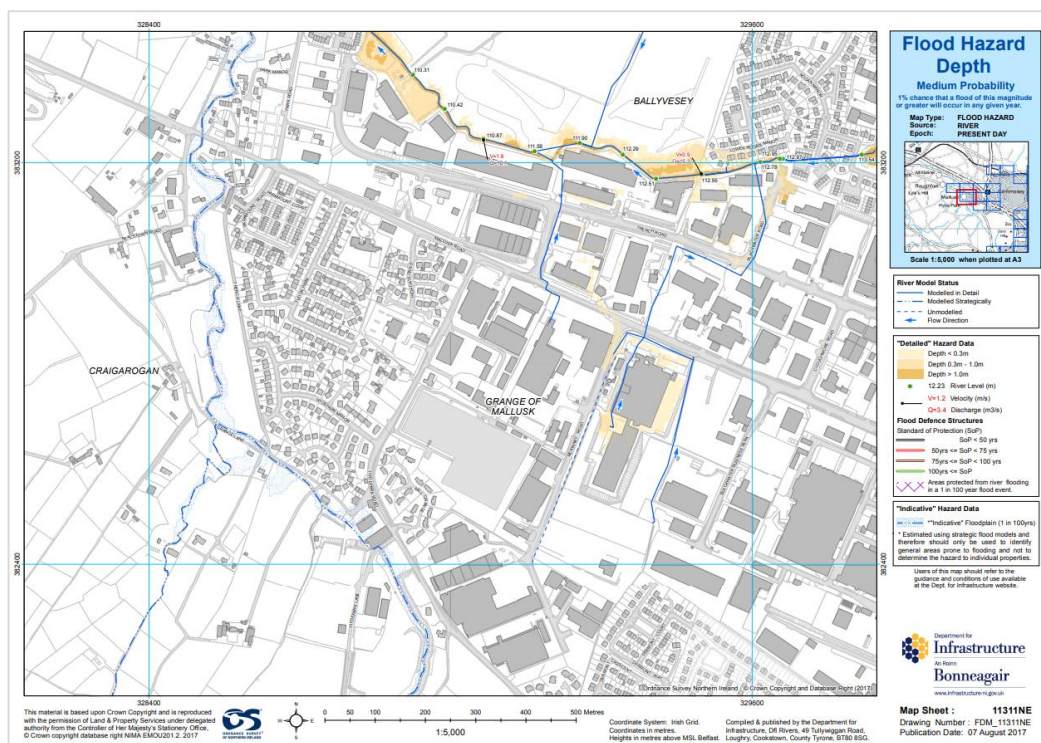
- 9.8 Indicative flood maps for rivers, sea and surface water are available for the Present Day and Climate Change (2030-year) epochs. These are presented as two distinct map layers on the interactive map viewer.
- 9.9 The Present Day map layer illustrates the floodplains and inundation areas that have been predicted by the predictive models using meteorological input data that is representative of the current climate conditions. The Climate Change maps have been produced to highlight the estimated floodplains for the year 2030 and are based on the best available predictions for the meteorological conditions and sea levels for that time.
- 9.10 The River Floodplain map provides an illustration of river floodplains, which are the relatively flat areas of land adjacent to rivers that are subject to periodic flooding. The outlines of the floodplains highlighted in the map identify the areas that in any year have a 1% AEP (1 in 100) or greater chance of flooding from rivers.
- 9.11 The Sea Floodplain map provides an illustration of the coastal floodplains, which are the relatively flat areas of land around the shoreline that are subject to periodic coverage by the sea. The outlines of the floodplains highlighted in the map identify the areas around the coastline that in any year have a 0.5% (1 in 200) or greater chance of flooding from the sea.
- 9.12 The Surface Water Flood map illustrates the low-lying areas and hollows that are estimated to be prone to flooding from an extreme 1 in 200yr rainfall event. Surface water flooding is usually related to short duration high intensity rainfall. The flooding occurs when the ground is unable to absorb the rainwater, causing it to flow over the surface and fill depressions and low spots in the landscape where local natural and engineered drainage systems are overwhelmed.
- 9.13 The Flood Maps NI also contain a Historical map layer, which illustrates areas that are known to have flooded in the past. The flooded area outlines depicted on this map have been generated from archived field data and aerial photographs that were collected by DfI Rivers at the time of the actual flood events. The Historical Flood Map is useful insofar as it can serve as a strong visual reminder that the risk of flooding is very real.

#### **Detailed Flood Hazard/ Flood Risk Maps**

- 9.14 The preparation of Flood Hazard maps and Flood Risk maps are a specific requirement of the EU Floods Directive. Under the Directive, the Government is obliged to produce Flood Hazard maps and Flood Risk maps for each of the twenty Significant Flood Risk Areas (SFRA), which it reported to the European Commission subsequent to the completion of the Preliminary Flood Risk Assessment for NI in December 2011. In addition to the legal requirement to produce maps for the SFRA, the government determined that it would produce hazard and risk maps for another 49 settlements named Areas for Further Study (AFS). The locations of the SFRA and AFS can be viewed via the Flood maps (NI) interactive map viewer.

- 9.15 The detailed Flood Hazard maps for rivers and the sea have been derived from flood models produced using the best available flood modelling techniques, tools and data. Consequently, the Flood Hazard Maps for rivers and the sea are considered suitable for predicting the level of flood risk to individual properties or point locations and as a consequence the maps are available at a scale that will enable users to identify individual properties.
- 9.16 Flood Hazard maps essentially describe the characteristics of the predicted flood for each of the flood event scenarios and includes information such as:
- The geographical extent of the flood inundation areas;
  - The water depth or height; and
  - Where appropriate the velocity or flow of the floodwater.
- 9.17 Figure 5 shows an example snippet of a Flood Hazard map from medium probability flood events relating to rivers at present day.
- 9.18 The Flood Risk maps essentially describe the main adverse consequences of the predicted flood for each of the flood event scenarios. The data used to describe the adverse consequences is collated and displayed on a 250m grid and includes information such as:
- The number of inhabitants who could be adversely affected;
  - The effect on economic activity (in terms of the monetary damage); and
  - The locations of flood prone industrial sites that might cause accidental pollution and in particular where this could impact nationally important environmental areas.

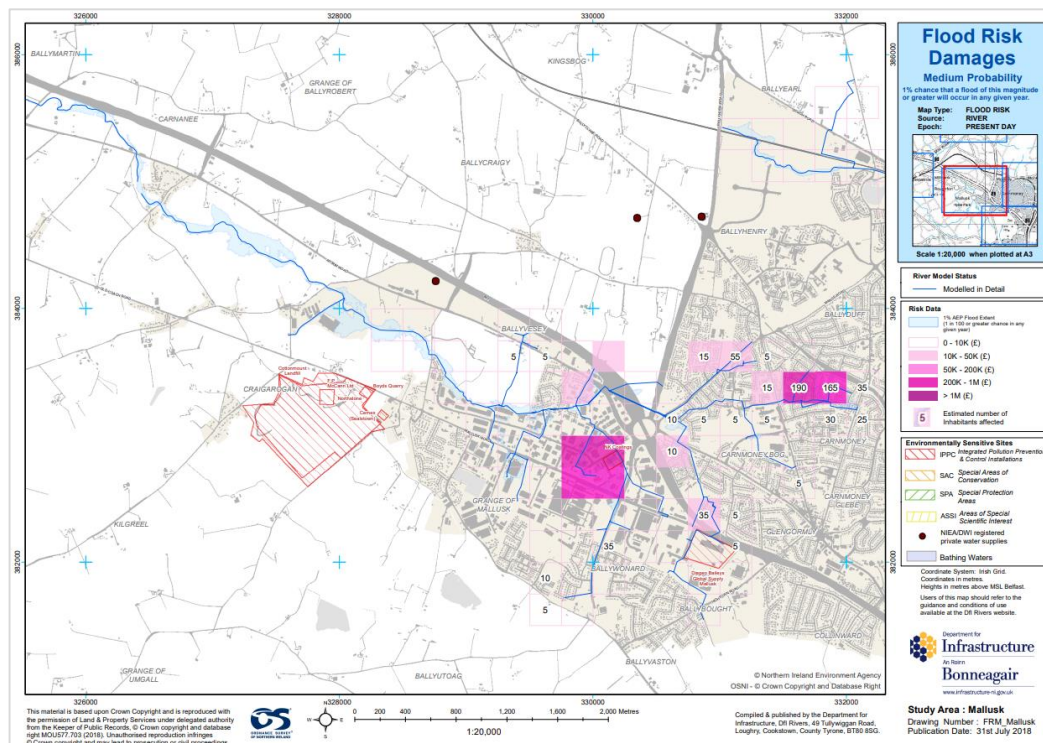
**Figure 5: Example of Flood Hazard Map**



Source: DfI Flood Maps NI

9.19 Figure 6 shows an example of a Flood Risk Map from medium probability flood events relating to rivers at present day.

**Figure 6: Example of Flood Risk map**



Source: DfI Flood Maps NI

## Climate Change Flood Mapping

9.20 The Current Climate Change maps contained within the Flood Maps (NI) are those for the year 2030, however, with the introduction of DfI's Technical Flood Risk Guidance in relation to Allowances for Climate Change in Northern Ireland in February 2019<sup>6</sup> these maps are being revised by DfI to represent climate change for the period up to 2080. Until the revision is complete, DfI Rivers will use Climate Change flood mapping where available. Mapping is currently available for all undefended fluvial areas, all undefended coastal areas and all surface water flooding.

9.21 The guidance sets out DfI Rivers approach to Climate Change in Flood Risk Management. A key change involves the approach to hydrological and hydraulic modelling/design which now requires the allowance for Climate Change to be made separately to any additional allowance for freeboard. Previously guidance recommended 'testing' for Climate Change within the freeboard envelope. Any queries on the technical guidance should be directed to [waterpolicy@infrastructure-ni.gov.uk](mailto:waterpolicy@infrastructure-ni.gov.uk).

9.22 With increasing incidents of flooding occurring due to the effects of ongoing climate change, it is essential that the LDP policies address flood risk matters. The Council will make reference to the most up to date flood risk information

<sup>6</sup> [Technical Flood Risk Guidance in relation to Allowances for Climate Change in Northern Ireland \(2019\)](#)

and maps available from DfI, in particular, Flood Maps (NI) and forthcoming Climate Change 2080 maps. The Council will also require detailed information in the form of Flood Risk Assessments and Drainage Assessments to accompany relevant proposals.

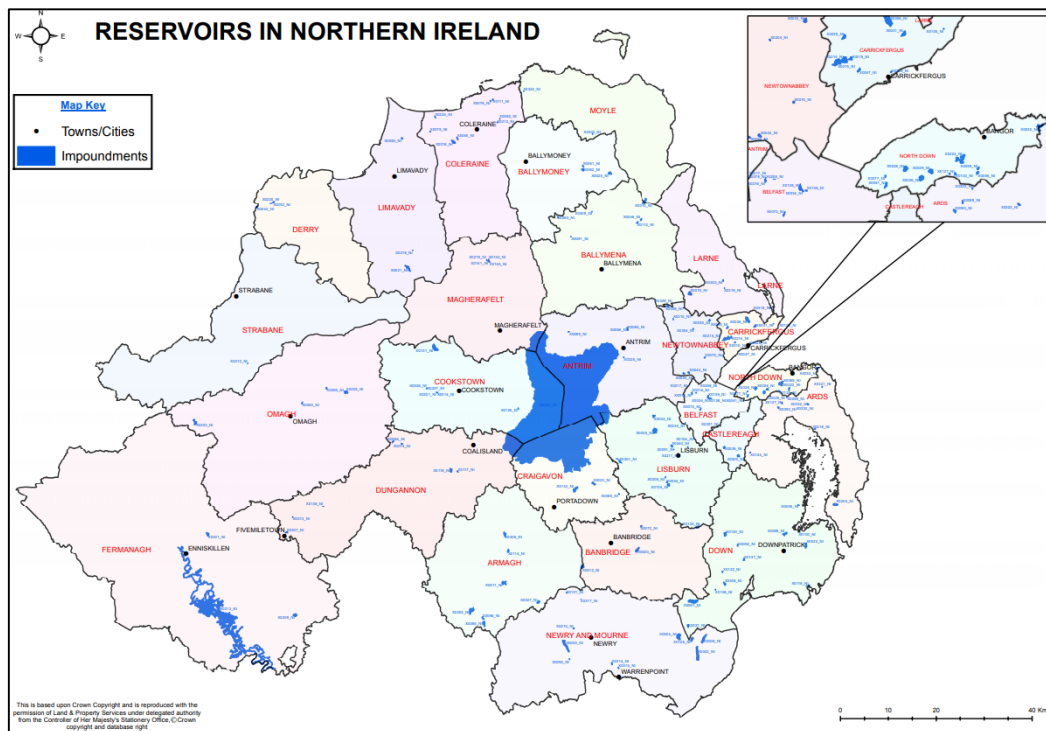
## 10 Reservoir Flooding

- 10.1 A reservoir is, most commonly, an enlarged natural or artificial lake, pond or impoundment created using a dam or lock to store water. Reservoirs can be created in a number of ways, including controlling a watercourse that drains an existing body of water, interrupting a watercourse to form an embayment within it, through excavation, or building any number of retaining walls or levees.
- 10.2 The Reservoirs Act (NI) 2015<sup>7</sup> provides a proportionate regulatory framework for the maintenance and management of controlled reservoirs in order to protect people, economic activity, the environment and cultural heritage from flooding caused by an uncontrolled release of water due to reservoir failure. Sections 1 to 5 of the Act defines a controlled reservoir as any structure or area that is capable of holding 10,000 cubic metres or more of water above the natural level of any part of the surrounding land.
- 10.3 There are over 140 controlled reservoirs in Northern Ireland as seen in Figure 7. Within Antrim and Newtownabbey 12 of these reservoirs are located, namely:
- Artoges Dam;
  - Boghill Dam;
  - Breckenhill Dam;
  - Greenmount College;
  - HydePark Dam;
  - Lower Potterswall Reservoir;
  - Millvale;
  - Mossley Mill;
  - Springvale;
  - Straid Dam;
  - Tildarg Dam;
  - Upper Potterswall Reservoir.
- 10.4 These reservoirs constitute a potential source of flood risk that can have serious consequences due to flooding of downstream areas within what is known as the area of inundation. This may ensue if the structure fails or is overtopped, or it may also arise from the controlled release of water from the reservoir, which is necessary to avoid capacity exceedance and overtopping. In any of these circumstances, there is potential for rapid inundation of downstream areas and response times to flooding are likely to be short.
- 10.5 Information regarding these reservoirs, including their location and ownership, are attached in Appendix 5. Such information has been extracted from the Reservoirs in Northern Ireland information booklet published in 2014<sup>8</sup> by the then Rivers Agency and is broken down into the Legacy Council areas.

<sup>7</sup> [Reservoirs Act \(NI\) 2015](#)

<sup>8</sup> [Reservoirs in Northern Ireland](#)

10.6 DfI Rivers have prepared an interactive Reservoir Flood Map showing the location of these reservoirs and the flood extent of these in the event of an uncontrolled release of water due to dam failure. DfI continually updates this interactive map.



**Figure 7: Reservoirs in Northern Ireland**

## 11 Coastal Flooding

- 11.1 DfI Rivers has sole responsibility for dealing with flooding from sea inundation, often arising through storm surge. See Evidence Paper 19 Coast, for further information.
- 11.2 The Northern Ireland marine area is made up of an inshore and an offshore region. The marine area comprises all marine waters including seabed, subsoil, sea loughs and tidal rivers, as far as the tide flows at Mean High Water Spring Tide. The inshore region extends from the Mean High Water Spring Tide mark out to, at most, 12 nautical miles (nm) and includes tidal rivers and sea loughs. The offshore region is the area that extends south-eastwardly from the 12nm territorial limit to the outer boundary of the Northern Ireland marine area (31nm at the farthest point).
- 11.3 Terrestrial planning extends to the Mean Low Water Mark while marine planning and licensing extend to the Mean High Water Mark, therefore the LDP will have to be cognisant of the emerging Marine Plan for NI.
- 11.4 The RDS recognises that the coastal area around Belfast needs to be protected from coastal squeeze, to safeguard against the loss of distinctive habitats and adapt to climate change. The SPPS aims to reinforce what is stated within the RDS in that any development within the coastal area should be highly sensitive to its environmental surroundings.

- 11.5 The coast of our Borough abuts Belfast Lough and includes the land, intertidal zone and the sea, and is approximately 7.5km in length. The coast is classified as the 'Developed Coast' and is located adjacent to the M5 Motorway and A2 Shore Road, Newtownabbey. The shoreline is characterised by a series of mudflats, shell dominated banks and artificial lagoons.
- 11.6 The coastal area is a biologically diverse ecosystem and an important natural heritage asset that regularly supports significant numbers of wintering birds and waders. This importance is recognised by the multiple international and national environmental designations applying to Belfast Lough, which is a RAMSAR site, Special Protection Area and an Area of Special Scientific Interest.
- 11.7 To help protect this important natural heritage asset and landscape feature the Council has identified a Coastal Policy Area that comprises the intertidal zone from the shoreline to the Mean Low Water Mark.
- 11.8 According to DFI Rivers, significant coastal flooding is a relatively infrequent occurrence in Northern Ireland. Nevertheless, there have been witnessed rises in major weather related storm events that have caused significant pressures to the coastal zone. Most notably was the tidal surge of January 2014, which caused almost £1.4m infrastructure damage and nearly resulted in a major catastrophe flood event within Belfast City Centre, through tidal surges in Belfast Lough.
- 11.9 According to the North Eastern river basin FRMP 2015-2021 publication<sup>9</sup>, the risk from tidal inundation in the Newtownabbey area is not considered significant, however, the tidal influence on the watercourses should still be taken into account.

## 12 Flood Resilience Measures

- 12.1 Surface water or pluvial flooding occurs because of high intensity rainfall, which overwhelms natural or human constructed drainage systems, resulting in water flowing overland, and ponding in depressions. It is a particular problem in urban areas, which are dominated by non-permeable surfaces (i.e. roads, pavements, patios) that restrict infiltration of water into the ground and promote run-off. New development proposals can also exacerbate the problems of pluvial flooding, by accelerating and increasing surface water run-off.
- 12.2 The Council recognises the potential harmful impacts of surface water flooding and will seek to promote a more sustainable approach to drainage and flood risk management. One way this can be utilised is through Sustainable Drainage Systems (SuDS).

### **Sustainable Drainage Systems (SuDS)**

- 12.3 The SPPS recognises that the planning system should help to mitigate and adapt to environmental change by working with natural environmental

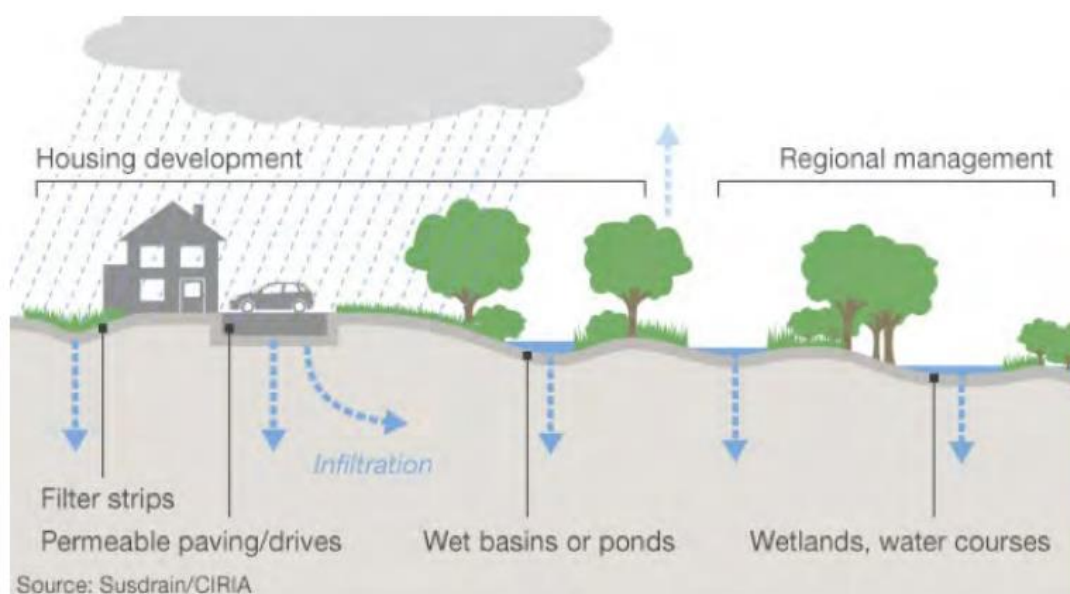
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<sup>9</sup> [DARD, 2015 - North Eastern River Basin FRMP](#)

processes, for example, the use of SuDS to reduce flood risk and improve water quality. The Water Environment (Water Framework Directive) Regulations (Northern Ireland) 2003 also provide a legal imperative to consider the introduction of measures such as SuDS and water level control to mitigate against floods.

- 12.4 SuDS are defined as management practices and control systems designed to drain surface water in a more sustainable way than conventional systems. They are designed to 'slow the flow' of water during periods of intense rainfall, resulting in a more manageable transfer of water. Reducing and decreasing the amount of surface water run-off helps to manage water resources more sustainably.
- 12.5 SuDS vary in size and composition and depending on the development proposal can be used in most developments where the flow of water would be large enough to be readily reduced. Appropriate techniques include soakaways, green roofs, permeable surfaces, water storage (e.g. Ponds), swales (shallow drainage channels), wetlands and groundwater infiltration or a combination of such solutions. Figure 8 below shows an example of how SuDS can be incorporated into new developments.

**Figure 8: Example of SuDS in new development**



## 13 Key Findings

- The RDS and SPPS urge the Planning System to adopt a precautionary approach to development in areas of flood risk and to use the latest flood risk information to properly manage development.
- The SPPS recognises that the planning system should help to mitigate and adapt to environmental change by working with natural environmental

processes, for example, the use of SuDS to reduce flood risk and improve water quality.

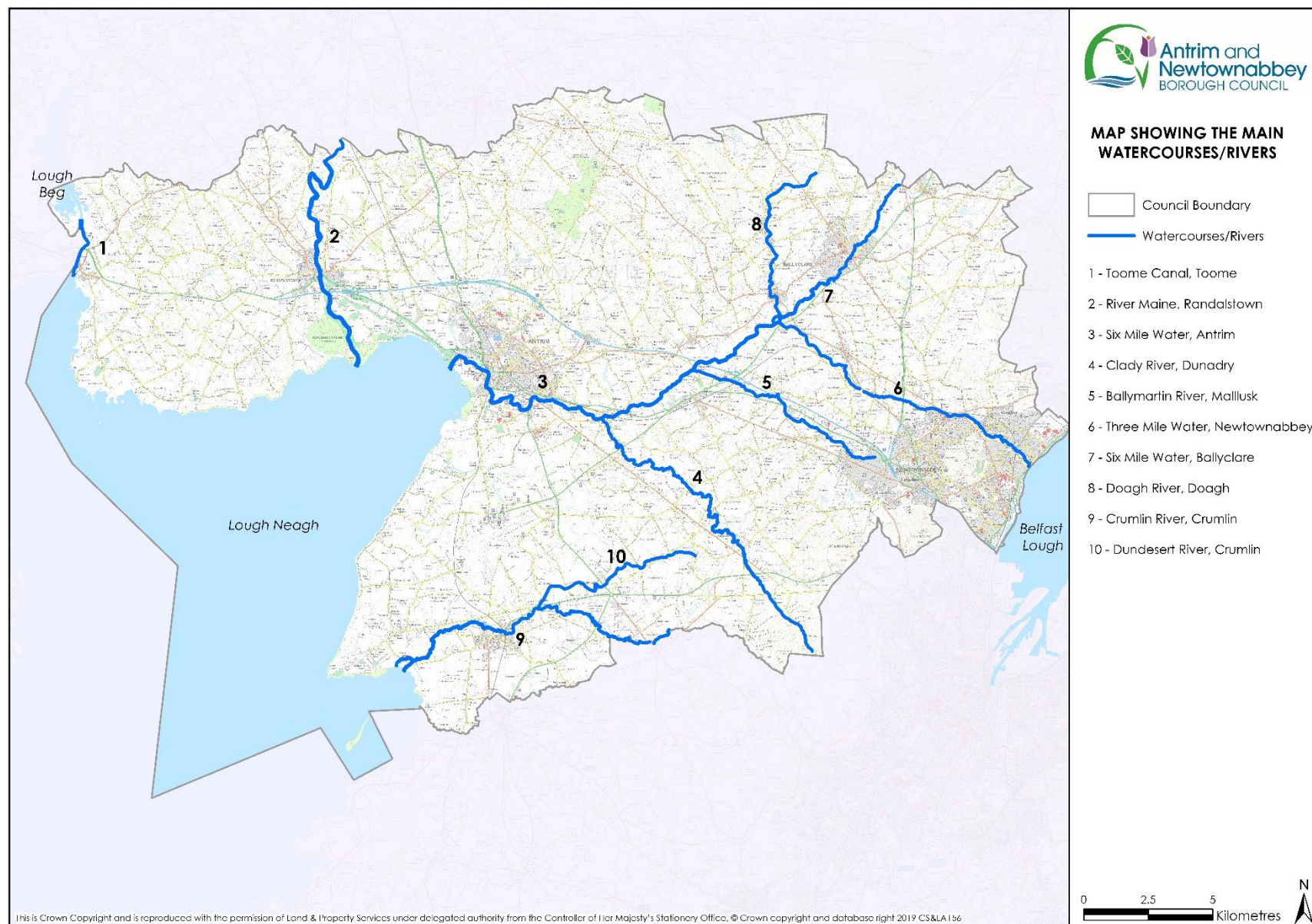
- SuDS are designed to 'slow the flow' of water during periods of intense rainfall, resulting in a more manageable transfer of water.
- The latest UK Climate Change Projections estimate that extreme events such as very heavy rainfall, dry spells and flooding will become commonplace in NI.
- Environmental change is most likely to be observed in coming years by changing weather patterns and as a result, the frequency, pattern and severity of flooding events are expected to increase.
- The LDP has an important role to play in helping to address climate change by bringing forward measures that seek to reduce greenhouse gas emissions and build environmental resilience.
- DfI Rivers is responsible for dealing with flood risk and advice on the implications of development proposals on drainage and flood defence issues.
- Antrim and Newtownabbey falls within the North Eastern and Neagh Bann River Basin Districts (RBD). The North Eastern River Basin District (RBD), which has a land area of just over 3000km<sup>2</sup> and a further 1000km<sup>2</sup> of marine waters. The Neagh Bann River Basin District (RBD) lies in the centre of Northern Ireland and includes Lough Neagh, the largest lake in Ireland, and the Bann River, which runs into and out of Lough Neagh. The Neagh Bann RBD has a total area of 8,085 km<sup>2</sup> including the marine elements.
- Further details of River Basins can be viewed on the [NIEA River Basin Viewer](#).
- There are 10 main watercourses/rivers in the Borough namely, Ballymartin River, Mallusk; Clady River, Dunadry; Crumlin River, Crumlin; Doagh River, Doagh; Dundesert River, Crumlin; River Maine, Randalstown; Six Mile Water, Antrim; Six Mile Water, Ballyclare; Three Mile Water, Newtownabbey; and Toome Canal, Toome.
- The Reservoir Act (NI) 2015 aims to ensure that reservoirs are managed and operated to minimise any risk of flooding due to an uncontrolled release of water resulting from dam failure and therefore protecting people, the environment, cultural heritage and economic activity.
- Within Antrim and Newtownabbey 12 of these reservoirs are located namely; Artoges Dam; Boghill Dam; Breckenhill Dam; Greenmount College; Hydepark Dam; Lower Potterswall Reservoir; Millvale; Mossley Mill; Springvale; Straid Dam; Tildarg Dam and Upper Potterswall Reservoir.
- DfI Rivers have prepared an interactive [Reservoir Flood Map](#) showing the location of these reservoirs and the flood extent of these in the event of an uncontrolled release of water due to dam failure. DfI continually updates this interactive map.
- Flood Maps (NI) produced by DfI Rivers as an interactive map viewer enables users to access the latest flood hazard information available from DfI Rivers. The

Flood Maps (NI) provide a general overview of the flood risk in Northern Ireland and can be accessed on the [Flood Maps \(NI\) Viewer](#).

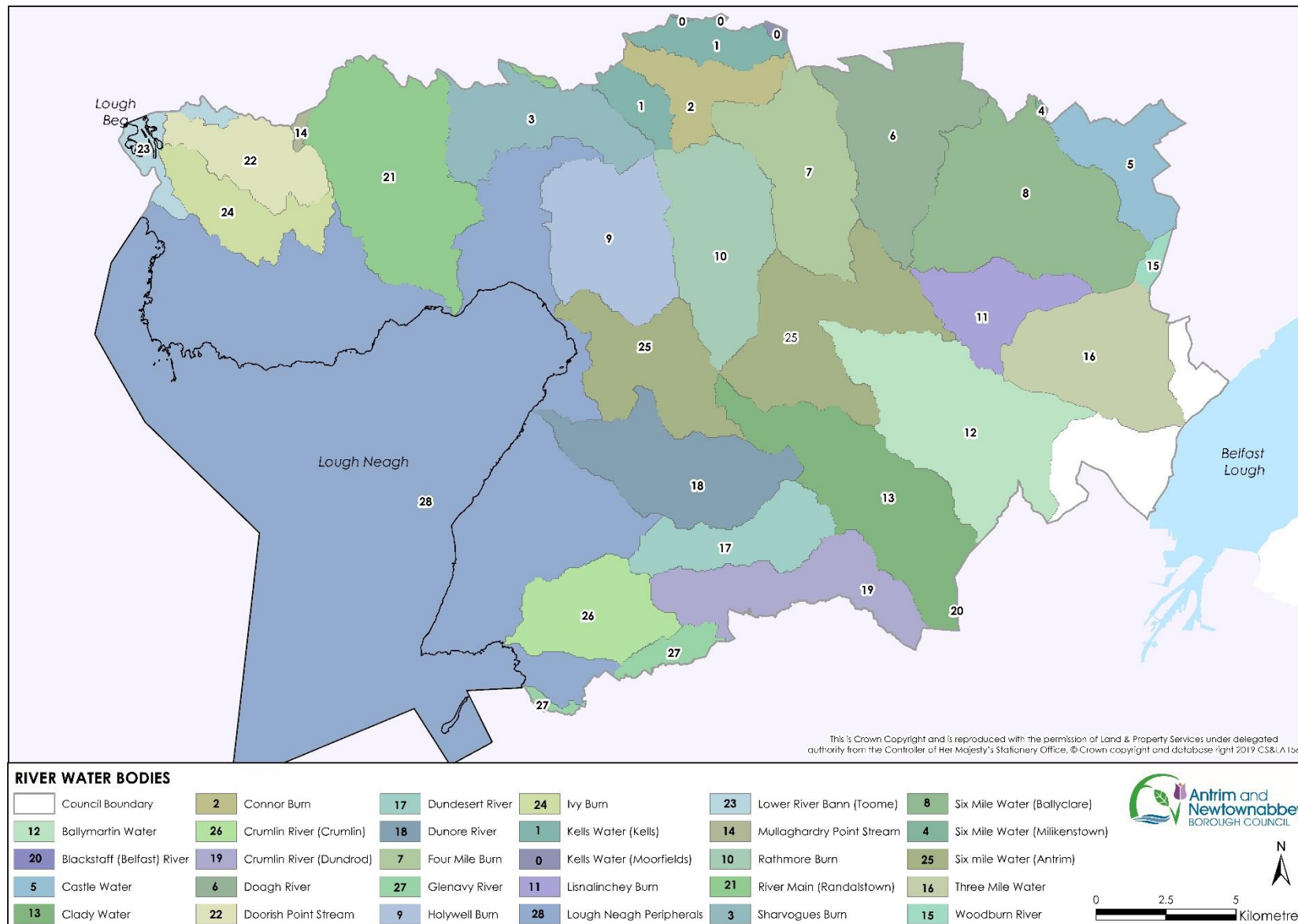
- There are two main elements to the Flood Maps (NI), the Indicative Flood Maps and the Detailed Flood Hazard Maps incorporating Flood Hazard and Flood Risks maps.
- The 2011 PFRA identified 20 Significant Flood Risk Areas (SFRAs) for which detailed Flood Risk Management Plans (FRMPs) were prepared for the period 2015-2021.
- Flood Risk Management Plans highlight the flood hazards and risks in the most significant flood risk areas in Northern Ireland from flooding from rivers, the sea, surface water and reservoirs.
- Concerning the Council Area, the PFRA identified Glengormley/Mallusk, Newtownabbey and Antrim were identified as 3 Significant Flood Risk Areas (SFRAs) with Ballyclare identified as an Area for Further Study (AFS).
- In 2018, the PFRA was updated and the 'The Northern Ireland Flood Risk Assessment (NIFRA) 2018' has been produced, identifying 45 flood risk areas.
- Concerning the Borough, Glengormley/Mallusk, Newtownabbey, Antrim and Ballyclare have been classed as flood risk areas, with an AAAD value equating to £4.73 million. Annual Average Damages (AAAD) value are the theoretical average economic damages caused by flooding.
- Out of the identified 45 Flood Risk Areas, 12 have been identified as Areas of Potential Significant Flood Risk (APSFR) and a further 9 identified as Transitional Areas of Potential Significant Flood Risk (TAPSFR).
- Glengormley/Mallusk and Newtownabbey have been identified as 2 of the 12 Areas of Significant Flood risk with Antrim being identified as 1 of the 9 Transitional Areas of Potential Significant Floods Risk.
- Terrestrial planning extends to the Mean Low Water Mark while marine planning and licensing extend to the Mean High Water Mark, therefore the LDP will have to be cognisant of the emerging Marine Plan for NI.
- The coast of our Borough abuts Belfast Lough and includes the land, intertidal zone and the sea, and is approximately 7.5km in length.
- According to the North Eastern river basin FRMP 2015-2021 publication, the risk from tidal inundation in the Newtownabbey area is not considered significant, however, the tidal influence on the watercourses should still be taken into account.

# APPENDICES

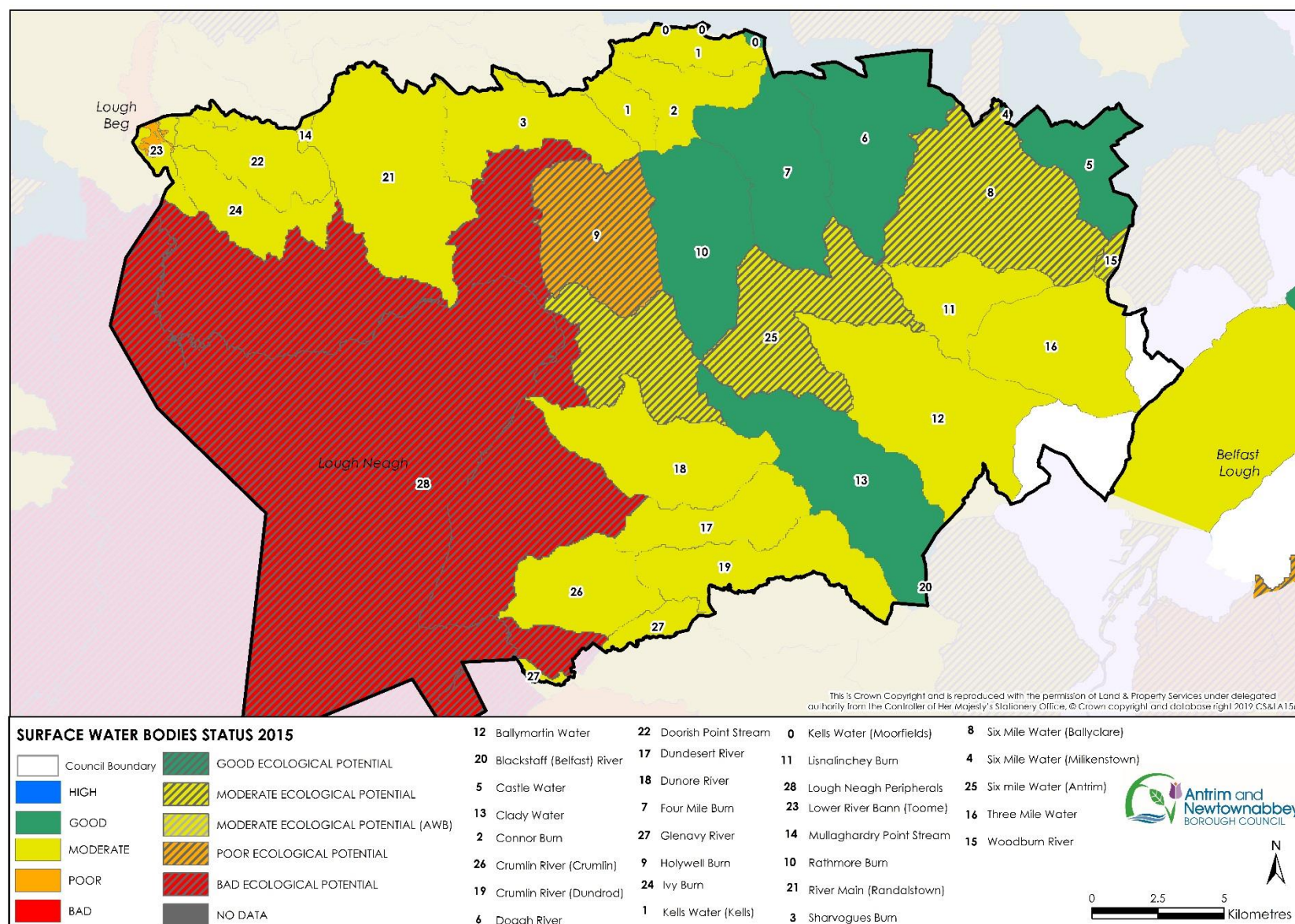
## Appendix 1 Main Watercourses/Rivers in the Borough



## Appendix 2 River Water Bodies in the Borough



### Appendix 3 Quality of the Surface Water Bodies in the Borough

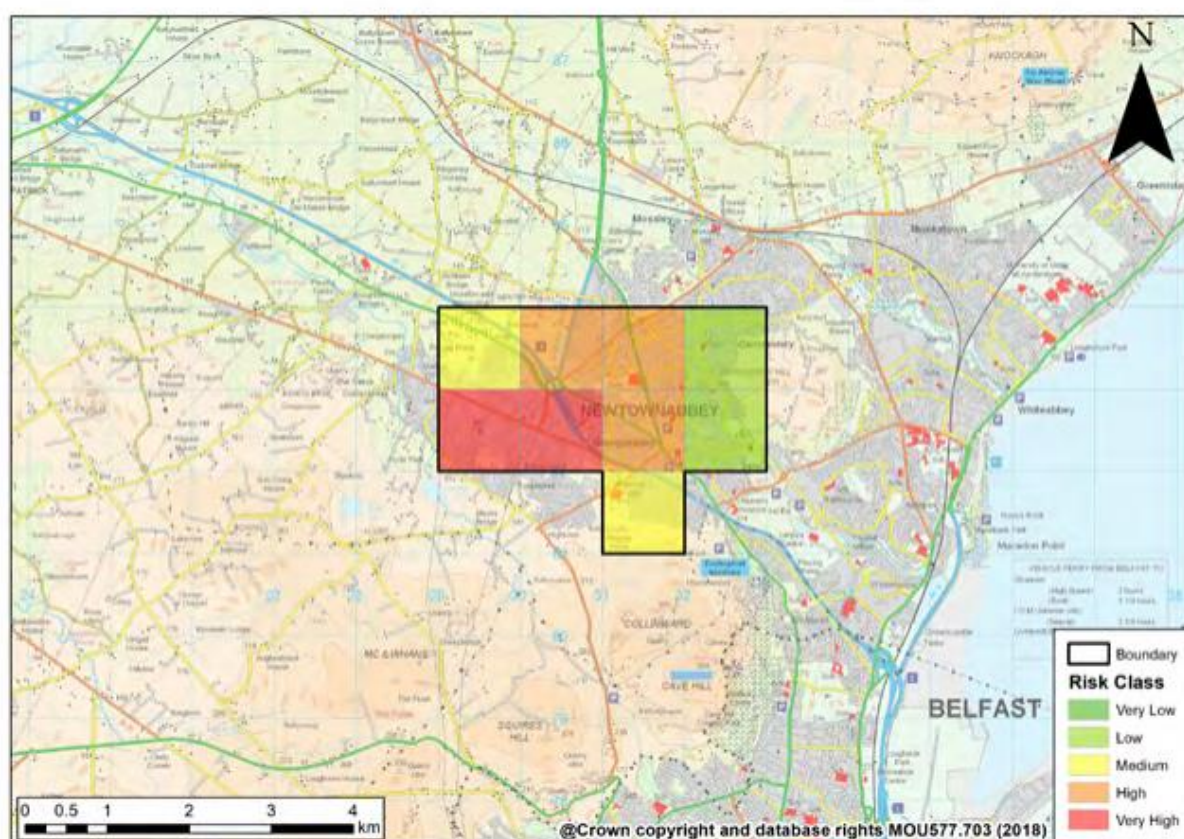


## Appendix 4 Areas of Potential Significant Flood Risk (APSFR) and Transitional Areas of Potential Significant Flood Risk (TAPSFR) Summary Reports

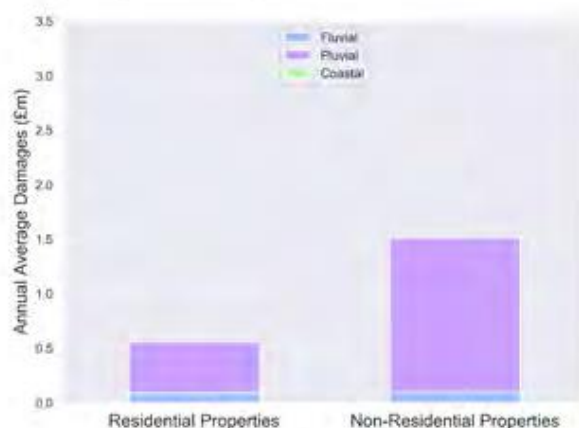
RBD	Area Name	Area (km2)	Designation
Neagh Bann	Glengormley and Mallusk	9	APSFR

### Summary

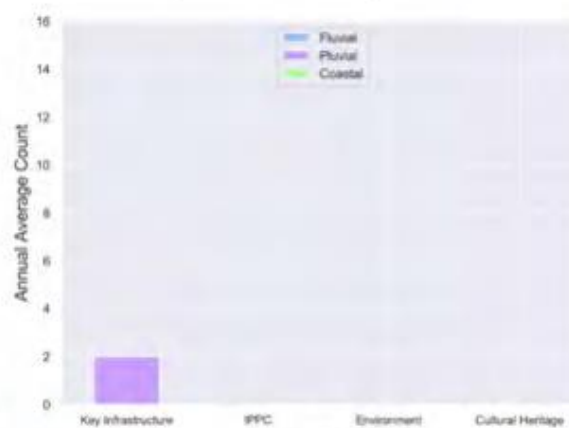
Glengormley and Mallusk are situated in the Neagh Bann River Basin District. These areas are at risk of flooding from fluvial and pluvial sources which could adversely impact on people and property in the area.



### Property at risk by source



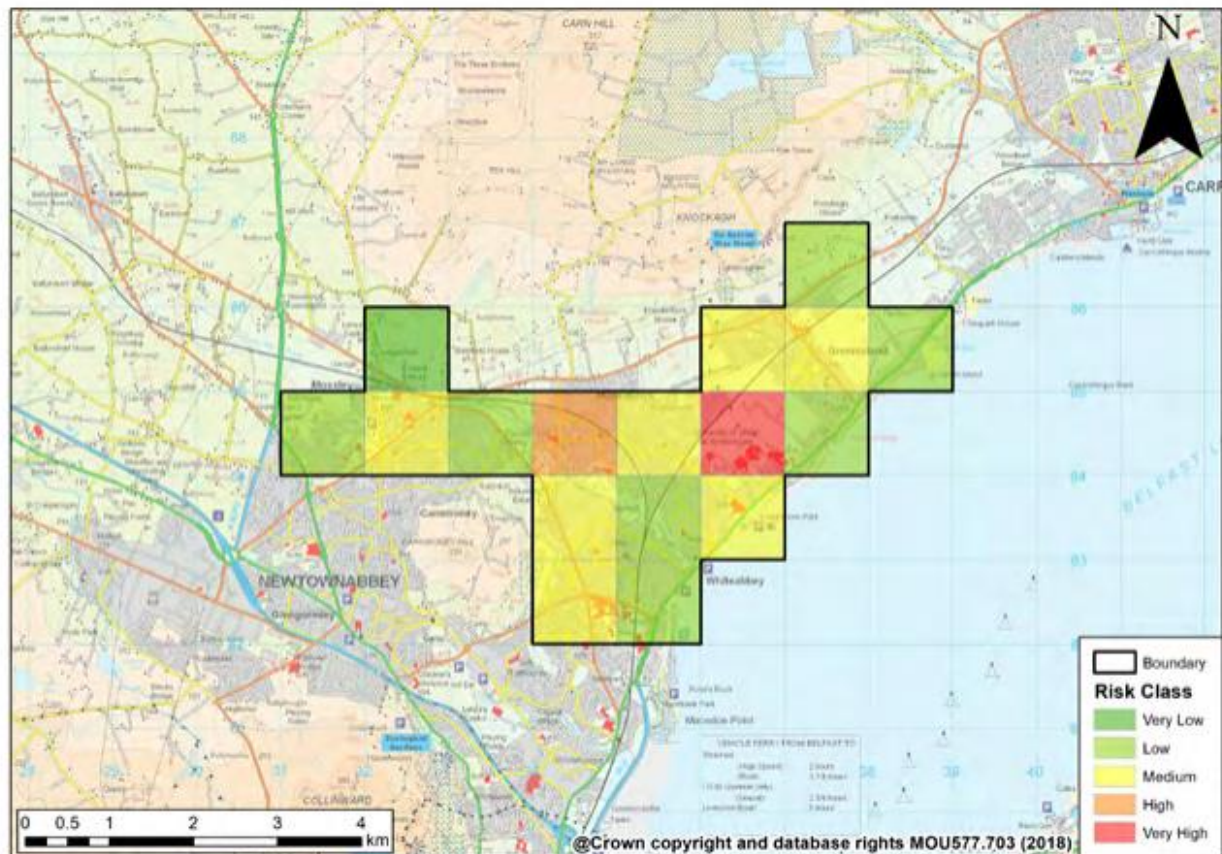
### Other receptors at risk by source



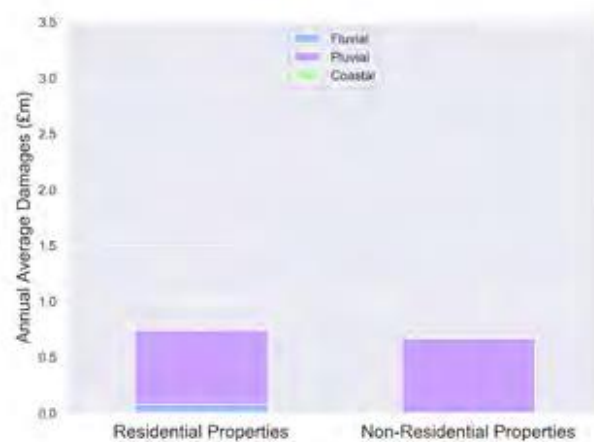
RBD	Area Name	Area (km2)	Designation
North Eastern	Newtownabbey	17	APSFR

## Summary

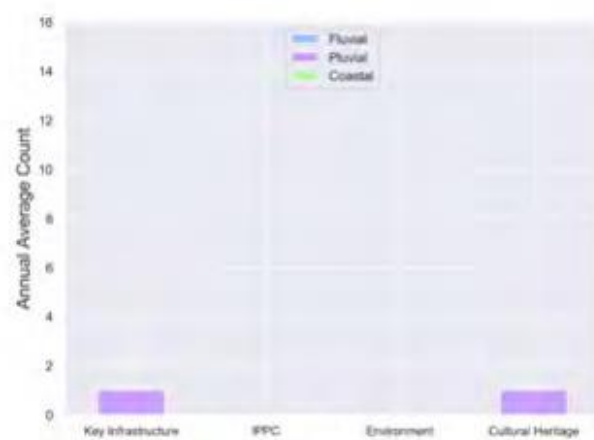
Newtownabbey is situated in the North Eastern River Basin District. It is at risk of flooding from fluvial and pluvial sources which could adversely impact on people and property in the area.



## Property at risk by source



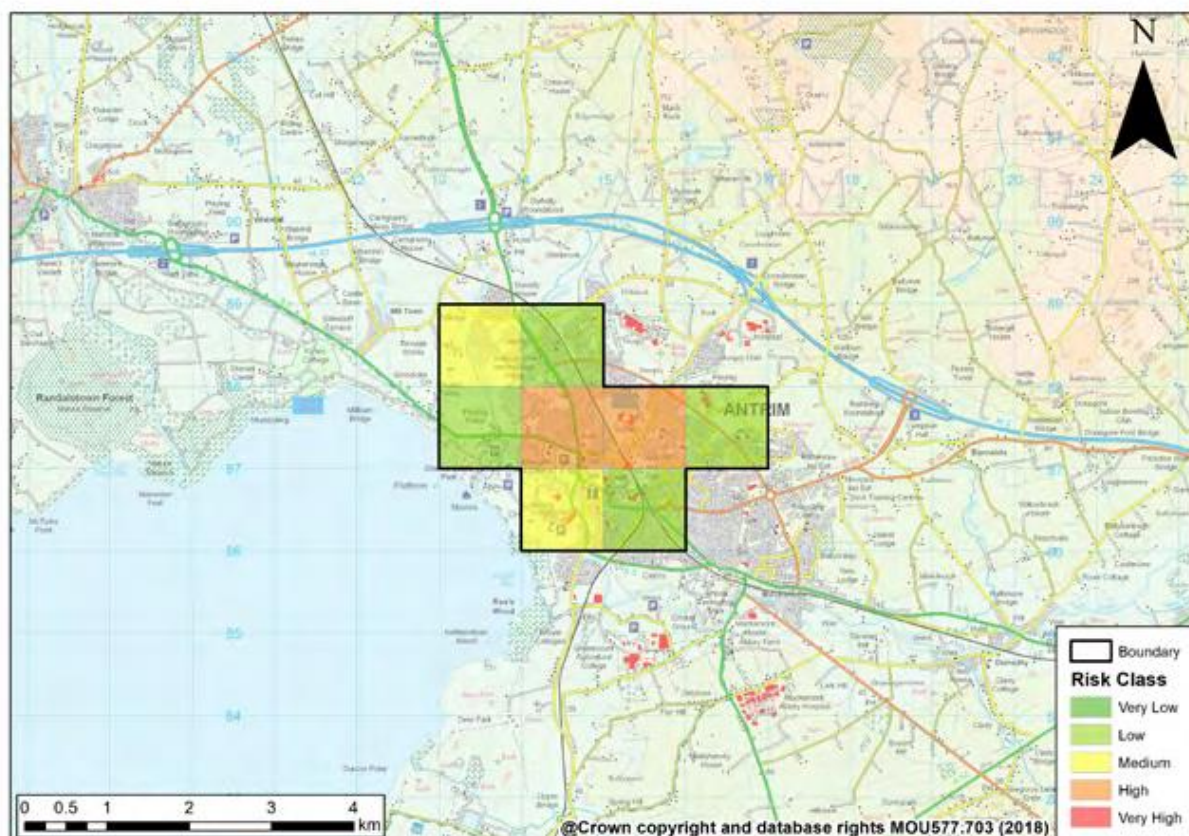
## Other receptors at risk by source



RBD	Area Name	Area (km2)	Designation
Neagh Bann	Antrim	8	TAPSFR

## Summary

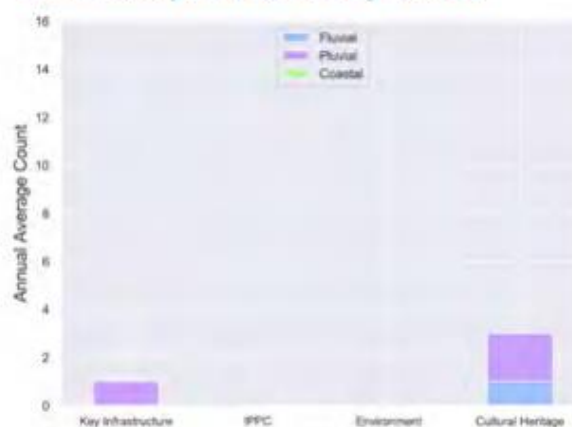
Antrim is situated in the Neagh Bann River Basin District. It was highlighted in the 2011 PFRA and has been designated a TAPSFR in the NIFRA 2018. Flood risk stems from fluvial and pluvial sources.



## Property at risk by source



## Other receptors at risk by source



## Appendix 5 Reservoirs in Antrim and Newtownabbey

# Reservoirs in Antrim Borough Council Area



### Index

Artoges Dam	X0069
Greenmount College	X0325
Lower Potterswall Reservoir	X0065
Upper Potterswall Reservoir	X0066

This booklet has been prepared from publically available information. Rivers Agency accepts no responsibility for the accuracy of the information presented.

### Artoges Dam



Address: Artlone Road, Randalstown BT41 3HX

Grid X:303764 Y:390187 Ref Number: X0069

**Ownership** Private Owner.

#### Construction and purpose

- This reservoir was constructed prior to 1858.
- The original natural lake shown on maps from 1829 show delivery of the water to a Corn Mill.
- The maps from 1858 show the location of a flax mill beside the original corn mill and it is reasonable to assume that the natural lake was increased in capacity to provide motive power to both premises.

#### Environmental Considerations

- There are no designate environmental features within the vicinity of this reservoir.
- There are no designated monuments / antiquities within the immediate vicinity of the reservoir.

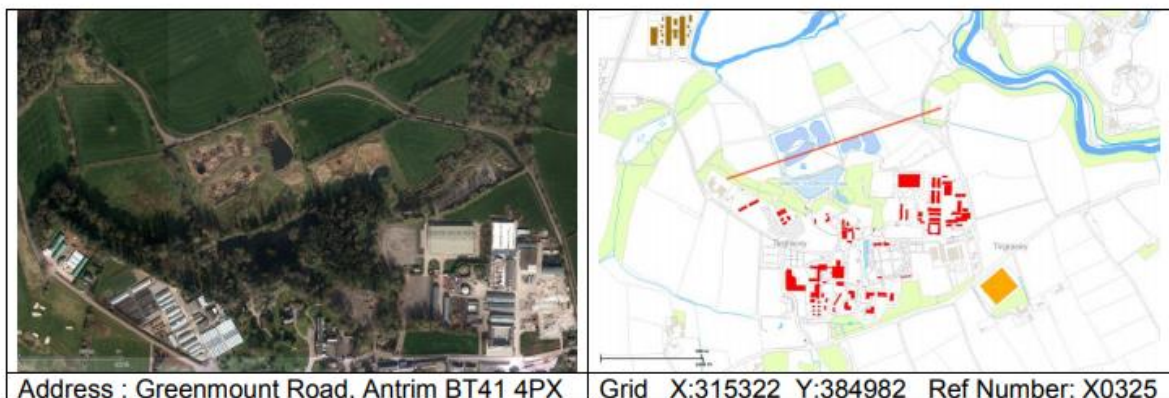
#### Access

- The reservoir is bordered by the Artlone Road on its north western shore line.
- The remainder of the reservoir is bordered by rough uncultivated lands.

#### Recreation & Leisure

- There are no reported or promoted water leisure or sporting activities at this reservoir.

### Greenmount College



Address : Greenmount Road, Antrim BT41 4PX

Grid X:315322 Y:384982 Ref Number: X0325

**Ownership** Department of Agriculture & Rural Development (CAFRE)  
Greenmount Campus, Greenmount Road, Antrim BT41 4PX

#### Construction and purpose

- This reservoir was originally constructed, possibly around 1801 as an ornamental pond for the "Gentleman's Residence" that was the Greenmount estate of the 1700's.
- During 1982 Greenmount College revamped the pond area, creating additional wetland habitat and the award winning "Nature Trail".

- The pond and nature trail are still actively used by school groups and college students studying courses in Countryside Management.
- The constructed Wetland System is also used for filtration of "Dirty Water" from the farm yard. Water samples are taken regularly to test and demonstrate the effectiveness of this natural filtration solution to a potential pollution risk faced by many farms.

#### Environmental Considerations

- There are no designated environmental areas within the immediate vicinity of this reservoir.
- There are designated suspected antiquity sites marked within the immediate downstream inundation area.
- Details are available at: <http://apps.ehsni.gov.uk/ambit/Details.aspx?MonID=3584> & <http://apps.ehsni.gov.uk/ambit/Details.aspx?MonID=3585>

#### Access

- The site is serviced by hardcore access paths from the college buildings as part of a designed "Nature trail".

#### Recreation & Leisure

- School Groups and other parties make extensive use of the area for nature education studies.
- There is no facility for water borne activities such as swimming or boating

#### Lower Potterswall Reservoir



#### Ownership

Angling Club

#### Construction and purpose

- This reservoir was constructed after the neighbouring Upper Potterswall.
- The exact date of construction is not known but is thought to be between 1921 and 1965.
- The original use of the reservoir is unknown.
- The reservoir is now used exclusively for angling.
- The owners have attempted to maintain and manage the reservoir in the spirit of the Reservoirs Act 1975 and may have a recent inspection report available.

#### Environmental Considerations

- There are no designated environmental areas within the vicinity of this reservoir.
- There is a designated monument downstream of this reservoir in the immediate inundation area.
- Details are available at: <http://apps.ehsni.gov.uk/ambit/Details.aspx?MonID=2991>

#### Access

- Authorised access only.

#### Recreation & Leisure

- The reservoir is used exclusively for angling.
- No other recreational activities are promoted.

### Upper Potterswall Reservoir



#### Ownership

Public Sector

#### Construction and purpose

- This reservoir was constructed during 1903 - 1921.
- The reservoir supplied water to Holywell Hospital.
- The historic maps of 1921 indicate that this reservoir supplied water to the Holywell Hospital site.
- Holywell Hospital have leased the reservoir to a Belfast Angling club but are considering the use of the water once again for general hospital cleaning.

#### Environmental Considerations

- There are no designated environmental areas within the vicinity of the reservoir.
- There is a designated monument within the immediate inundation area.
- Details are available at: <http://apps.ehsoni.gov.uk/ambit/Details.aspx?MonID=3014>

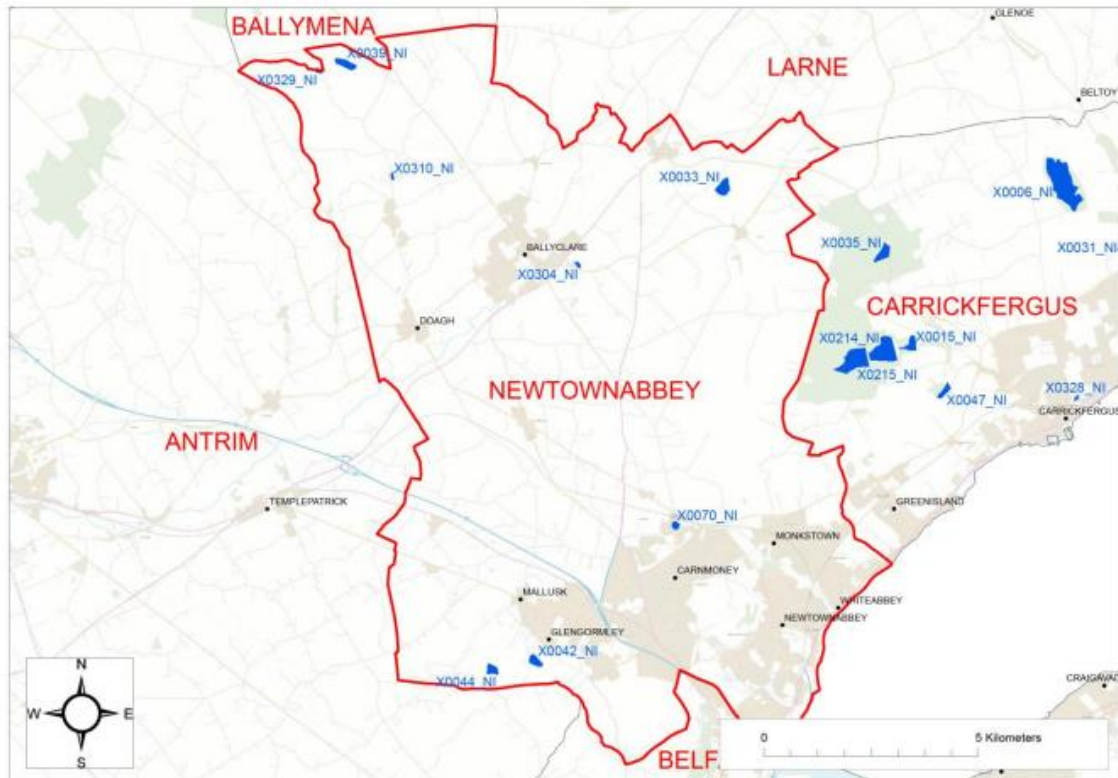
#### Access

- No public access.

#### Recreation & Leisure

- An angling club holds fishing rights for this reservoir.
- No other known recreational activity.

# Reservoirs in Newtownabbey Borough Council Area



## Index

Boghill Dam	X0044
Breckenhill Dam	X0329
Hydepark Dam	X0042
Millvale	X0304
Mossley Mill	X0070
Springvale	X0310
Straid Dam	X0033
Tildarg Dam	X0039

This booklet has been prepared from publically available information. Rivers Agency accepts no responsibility for the accuracy of the information presented.

### Boghill Dam



**Ownership** Private Owner

#### Construction and purpose

- This reservoir was constructed during the 18<sup>th</sup> Century to supply water for the Hydepark Bleaching and Finishing Works.
- The reservoir is now operated as a private fishery.

#### Environmental Considerations

- The area of the reservoir is an Area of Local Conservation Interest. Details are available at:  
[http://www.planningni.gov.uk/index/policy/dev\\_plans/devplans\\_az/bmap\\_2015/bmap\\_district\\_proposals/bmap\\_newtownabbey/bmap\\_newtownabbey\\_library/bmap\\_newtownabbey\\_library\\_countryside.htm](http://www.planningni.gov.uk/index/policy/dev_plans/devplans_az/bmap_2015/bmap_district_proposals/bmap_newtownabbey/bmap_newtownabbey_library/bmap_newtownabbey_library_countryside.htm)
- There are no recorded antiquities / monuments within the expected inundation area of the reservoir.

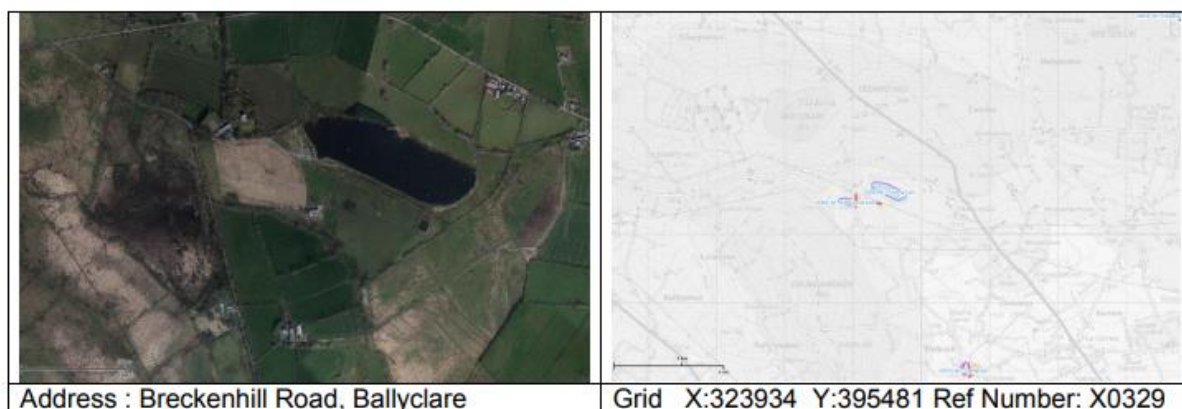
#### Access

- Controlled access via a gated lane off the Boghill Road.
- The reservoir does not have any surfaced paths on its perimeter.
- The surroundings lands are privately owned.

#### Recreation & Leisure

- Mallusk Angling Society manages the reservoir as a private fishery.
- No other water based activities are promoted at this reservoir.

### Breckenhill Dam



**Ownership** Private Owner

**Construction and purpose**

- The date of construction of Brekenhill Dam is not known.
- The dam is likely to have been constructed to store and supply water in conjunction with the neighbouring Tildarg dam to a local mill.

**Environmental Considerations**

- The area immediately downstream of the reservoir is designated as a site of Local Conservation Interest.
- Information held by Planning Service at ([http://www.planningni.gov.uk/index/policy/dev\\_plans/devplans\\_az/bmap\\_2015/bmap\\_district\\_proposals/bmap\\_newtownabbey/bmap\\_newtownabbey\\_library/bmap\\_newtownabbey\\_library\\_countryside.htm](http://www.planningni.gov.uk/index/policy/dev_plans/devplans_az/bmap_2015/bmap_district_proposals/bmap_newtownabbey/bmap_newtownabbey_library/bmap_newtownabbey_library_countryside.htm))
- The reservoir has become silted and does not appear to be in use.

**Access**

- No public access; private site.
- Whilst adjacent to the Tildarg Road, there is no specific access to the reservoir.

**Recreation & Leisure**

- There are no known recreation activities around this reservoir.
- Shooting opportunities are privately owned.

**Hydepark Dam**

	
Address : Hydepark Road, Newtownabbey BT36 4PY	Grid X:328845 Y:381891 Ref Number: X0042

**Ownership**

Private Owner

**Construction and purpose**

- This reservoir was constructed during the 18<sup>th</sup> Century to supply water for the Hydepark Bleaching and Finishing Works.
- Water was supplied from the dam in pipes to the factory rather than driving onot a Mill Wheel directly.
- The reservoir is now a wildlife sanctuary.

**Environmental Considerations**

- The area of the reservoir is an Area of Local Conservation Interest. Details are available at: [http://www.planningni.gov.uk/index/policy/dev\\_plans/devplans\\_az/bmap\\_2015/bmap\\_district\\_proposals/bmap\\_newtownabbey/bmap\\_newtownabbey\\_library/bmap\\_newtownabbey\\_library\\_countryside.htm](http://www.planningni.gov.uk/index/policy/dev_plans/devplans_az/bmap_2015/bmap_district_proposals/bmap_newtownabbey/bmap_newtownabbey_library/bmap_newtownabbey_library_countryside.htm)
- Within the vicinity of the reservoir is a Fortified House and Earthworks antiquity. Details held by NIEA are available at: <http://apps.ehnsi.gov.uk/ambit/Details.aspx?MonID=4323>
- This is not within the expected inundation area of the reservoir.

**Access**

- The dam can be accessed via a lane off the Hydepark Road.
- The reservoir does not have any surfaced paths on its perimeter.
- The surroundings lands are privately owned.

**Recreation & Leisure**

- The reservoir is marked as part of the "Mallusk Nature and Heritage Trail" and is promoted by Newtownabbey Borough Council.
- There are no promoted angling or other water based activities on this reservoir.

**Millvale (KBL Mill)**

Address : Green Road, Ballyclare



Grid X:329958 Y:390952 Ref Number: X0304

**Ownership**

Private Ownership

**Construction and purpose**

- The reservoir is thought to have been constructed in the 1800's as a source of water for the mill.
- A volume of water is diverted from the Green Burn to flow through the reservoir.
- The reservoir was constructed with two parts with the upstream half being used as a settlement area before the water reaches the factory.
- The reservoir has been de-watered and is no longer in use.

**Environmental considerations**

- There are no environmental designations on this site apart from the small island in the middle of the reservoir. It was standard practice to build these small islands in millponds, but this is not an antiquity.

<http://apps.ehsni.gov.uk/ambit/Details.aspx?MonID=3069>

**Access**

- No Public access.
- The reservoir is accessed through the factory premises.

**Commerce, Recreation & Leisure**

- No other recreational activities are encouraged.

### Mossley Mill



**Ownership**      Public Sector

#### Construction and purpose

- The reservoir was created circa 1834 to provide motive power for the flax mill and linen industry on site.
- Further detail of this is available at:  
<http://www.newtownabbey.gov.uk/heritage/mossleymill.asp>
- The reservoir is now an ornamental feature of the Mossley Mill Civic Centre on this site.

#### Environmental Considerations

- The area of the reservoir and mill are designated as an Area of Local Conservation Interest.
- The historic buildings on the site have been listed and are now developed as a museum and civic centre.
- Details are available at: , <http://www.doeni.gov.uk/niea/content-databases-buildview?id=13791&js=true>

#### Access

- Good public access to the Civic Centre grounds and reservoir site.

#### Recreation & Leisure

- Walking is the only activity reported for this reservoir.

### Springvale



**Ownership**      Private Owner: Commercial

#### Construction and purpose

- The date of construction is not currently known.
- The reservoir draws water from the main Doagh River.
- The water is harnessed to generate power for the factory and is still utilised today.

**Environmental Considerations**

- There are no designated areas of conservation or environmental interest in the immediate vicinity of the reservoir.
- There are no listed buildings or scheduled monument sites in the immediate vicinity of the reservoir.

**Access**

- No Public access.
- The site is within the grounds of a factory.

**Recreation & Leisure**

- There are no reported public recreational activities on the reservoir.
- The reservoir is used to provide for industrial needs and as a feature on their site.

**Straid Dam**

	
Address : Straid Road, Ballynure	Grid X:333334 Y:392770 Ref Number: X0033

**Ownership:** Private owner

**Construction and purpose**

- The reservoir first appears on maps from 1832.
- The mill race marked on 1832 maps leads to a mill that is now in ruins.
- The general area has a number of mills connected with the flax and linen trade.
- The reservoir is now operated as a private "put and take" fishery.

**Environmental Considerations**

- There are no environmental designations on or in the immediate vicinity of this reservoir.
- There are no designated monuments or antiquities recorded on or within the immediate inundation area of this reservoir.

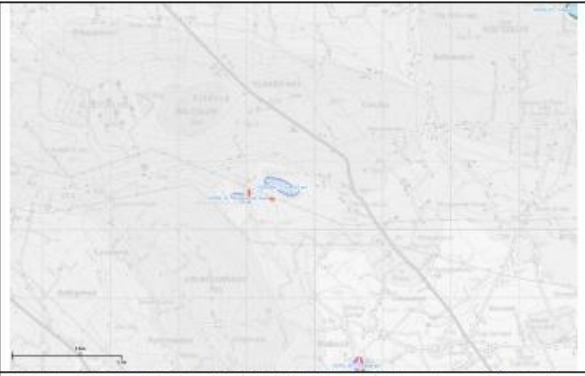
**Access**

- Controlled access.
- There is a surfaced lane to a car park and buildings at the reservoir embankment.
- An unsurfaced lane runs round the northern and eastern shore of the reservoir.

**Recreation & Leisure**

- This reservoir is run as a commercial fishery.
- It would not be open to walkers but facilities are available for anglers to use small boats on the reservoir.

### Tildarg Dam



Address : Breckenhill Road, Ballyclare

Grid X:324510 Y:395654 Ref Number: X0039

**Ownership** Private Owner

#### Construction and purpose

- Tildarg Dam was constructed between 1832 and 1857 to provide power for linen mills that were developed in the area.
- The reservoir is privately owned and operated as a commercial "Put and Take" fishery.

#### Environmental Considerations

- The area of the reservoir and immediately downstream of the reservoir is designated as a site of Local Conservation Interest.
- Information held by Planning Service at [http://www.planningni.gov.uk/index/policy/dev\\_plans/devplans\\_az/bmap\\_2015/bmap\\_district\\_proposals/bmap\\_newtownabbey/bmap\\_newtownabbey\\_library/bmap\\_newtownabbey\\_library\\_countryside.htm](http://www.planningni.gov.uk/index/policy/dev_plans/devplans_az/bmap_2015/bmap_district_proposals/bmap_newtownabbey/bmap_newtownabbey_library/bmap_newtownabbey_library_countryside.htm)

#### Access

- Controlled access.
- The reservoir is accessed from the Tildarg Road. A car park is available.
- A firm path exists round the embankment crest but does not extend round the reservoir.
- The site is accessible for launching small boats.

#### Recreation & Leisure

- The reservoir at Tildarg Dam supports an active fishery promoted by Newtownabbey Borough Council. <http://www.newtownabbey.gov.uk/pursuits/fishing.asp> & [www.tildargfishery.com](http://www.tildargfishery.com)
- Whilst the reservoir cannot easily be circumnavigated, a firm path exists on the crest of the impoundment.
- Small boats are permitted on the reservoir for fishing.



Mossley Mill  
Carnmoney Road North,  
Newtownabbey  
BT36 5QA

Antrim Antrim Civic Centre  
50 Stiles Way,  
Antrim,  
BT41 2UB

[www.antrimandnewtownabbey.gov.uk](http://www.antrimandnewtownabbey.gov.uk)