

# Armagh City, Banbridge and Craigavon Borough Council Local Development Plan



**Paper 12 : Minerals  
October 2016**



<b>PAPER 12: MINERALS</b>	
<b>CONTENTS</b>	<b>PAGE(S)</b>
Purpose & Contents	4
Section 1: Introduction	5
Section 2: Legislative and Regional Planning Policy Context	6
Section 3: Area Plans	16
Section 4: Economic Role of Minerals in NI	18
Section 5: Minerals in ACBCBC	21
Section 6: Conclusion & Summary	30
Appendices	32
<b>TABLES</b>	
Table 1: ACBCBC Romps	
Table 2: Mineral Planning policy in SPPS (NI) & PSRNI	
Table 3: NI Mineral Production by County (Tonnage)	
<b>DIAGRAMS</b>	
Diagram 1: NI Geology Map (basic bedrock)	
Diagram 2: NI Geology & Quarry Location Map	
Diagram 3: Annual NI Sand & Gravel Production by County	
Diagram 4: Annual NI Limestone Production by County	
Diagram 5: Annual NI Sandstone Production by County	
Diagram 6: Annual NI Basalt & Igneous (other than Granite) Production by County	
Diagram 7: Annual NI 'Other' Mineral Production by County	
Diagram 8: NI Map showing presence of gold in soils	

## **FIGURES**

**Figure 1: NI Quarrying Industrial Employment Figures by LGD**

**Figure 2: NI Annual Average Quarry value (£) by LGD**

## **APPENDICES**

**Appendix 1: ACBCBC List of Quarry Sites**

**Appendix 2: NI Mineral Information by LGD**

**Appendix 3: NI Mineral Resources Map in ACBCBC**

**Appendix 4: ACBCBC Area of Mineral Constraint Map**

**Appendix 5: ACBCBC Quarry Map**

**Appendix 6: ACBCBC Area of Scenic Quality Map**

**Appendix 7: ACBCBC Key Nature Conservation Designation Map**

## **PURPOSE:**

To provide the Council with an overview of matters relating to mineral development in Armagh City, Banbridge and Craigavon Borough Council in preparation for the new Local Development Plan.

## **CONTENTS:**

The paper provides:

- (i) the regional policy and legislative context for minerals development;
- (ii) the existing Area Plan context for minerals development;
- (iii) an overview of economic importance of the mineral industry to Northern Ireland;
- (iv) an overview of minerals in the Borough; and
- (v) a summary of how the plan should address minerals development.

## **1.0 Introduction**

- 1.1** This is one of a series of preparatory study papers on various land use topics to inform the Council in the preparation of the new ACBCBC LDP. The purpose of this paper is to inform the Council of the regional planning context and legislative context for mineral development. The paper also considers the current area plans covering the Borough and how they plan for mineral development and what the issues are for mineral development or protection within the new LDP.
- 1.2** Whilst mineral development and related industry are an important part of the economic make up of Northern Ireland and indeed ACBCBC, the development and exploitation of mineral resources can have significant environmental impacts. By their nature, scale, location and duration of operation, mineral development can impact more severely on the environment than many other forms of development. They can affect or destroy sites of nature conservation or science value and sites of historic and archaeological importance. They can also have a significant visual impact on the landscape and an adverse impact on the amenity of people living nearby. In this context this paper will emphasise the need for the LDP to ensure that the location of mineral development and their operation is controlled provision and that there is a balance between the need for mineral development and the potential impact on the environment. The importance of securing a continuous supply of minerals to support the construction industry is accepted, while ensuring that an appropriate balance is achieved with regard protecting the environment and the safeguarding residential amenity.
- 1.3** In preparing the LDP, it is also important that the Council be aware of the available mineral resources within the Borough so as to ensure that such areas are protected if necessary from surface development in order to safeguard future mineral development potential.

## **2.0 Legislative and Regional Planning Policy Context**

### **Legislative Background**

- 2.1** *The Planning Act (Northern Ireland) 2011* describes minerals as ‘substances which are in or under land of a kind ordinarily worked for removal by underground or surface working except that it does not include turf cut for purposes other than for sale’.
- 2.2** Therefore, any substance which can be extracted from the ground can be classed as a mineral, other than turf which happens to be extracted for personal use.
- 2.3** *The Planning (Interim Development) Order (Northern Ireland) 1944* granted permitted development rights to quarries, under which they operated without planning permission until 1973 when the *Planning (General Development) Order (Northern Ireland) 1973* stated that permitted development rights for quarries would only last for one year, effectively meaning that existing quarries had one year to apply for planning permission.

### **Minerals Licensing**

- 2.4** *The Mineral Development Act (Northern Ireland) 1969* meant that most minerals in the ground in Northern Ireland were vested to the Ministry of Commerce, now known as the Department for the Economy. This enabled the Department to grant licenses for exploration and development of minerals. There are a few exceptions to this legislation which mean that minerals in the following categories were not vested to the Department and do not require the granting of a license from the Department to be extracted:
- Gold and silver resources which belong to the crown estate.
  - Mineral deposits which were being worked at the time of the commencement of the Act. These were mainly salt deposits.
  - Common substances e.g. Sand, gravel, crushed rock, brick clays, agricultural soil.
  - Mines belonging to any religious or educational institution.

### **Waste from Extractive Industries**

- 2.5** *The Mining Waste Directive (2006/21/EC)* was adopted by the European Union in March 2006 with the goal of regulating waste from extractive industries in order to prevent or reduce as far as possible, any adverse effects on the environment. In order to comply with this directive, the *Planning (Management of Waste from Extractive Industries) Regulations (Northern Ireland) 2010* were introduced. These regulations were intended to ensure that all waste resulting from extractive industries was managed in a way which was compliant with the 2006 directive.
- 2.6** The 2010 regulations were replaced by the *Planning (Management of Waste from Extractive Industries) Regulations (Northern Ireland) 2015* from 1<sup>st</sup> April 2015. Regulation 4 of this legislation states that planning permission will not be granted unless a waste management plan (WMP) has been submitted and approved by the Council.

## **Review of Old Mineral Permissions (ROMPS)**

- 2.7** The Environmental Impact Assessment (EIA) Directive has been in force throughout the EU since 1985. It was implemented in Northern Ireland by the Planning (Assessment of Environmental Effects) Regulations (Northern Ireland) 1989 and later by the Planning (Environmental Impact Assessment) Regulations (Northern Ireland) 1999 (revoked and re-enacted in a 2015 version).
- 2.8** These pieces of legislation mean that when assessing applications for mineral development, there is a more stringent level of consideration given to the environmental impacts of that development than was previously the case.
- 2.9** Because of the introduction of the 1989 regulations along with the formation of a specialised minerals planning unit within Planning Service, it is generally accepted that planning permissions granted for quarrying development since the early 1990's have adequate environmental conditions attached. Permissions granted during the 70's and 80's, following the implementation of the 1973 Order (see para 2.3) do not always have adequate conditions attached and subsequently need to be reviewed (Review of Old Mineral Permissions / ROMPS). For instance, it is accepted that very few conditions granted in the 1970's have adequate conditions relating to noise impacts attached.
- 2.10** The Planning Act (Northern Ireland) 2011 makes provision for these reviews of old permissions to be undertaken. The legislation makes provision for mineral sites to be classed as phase 1 sites if they had been granted approval before 31<sup>st</sup> December 1980 and phase 2 sites if they have been granted approval after 31<sup>st</sup> December 1980 but before 31<sup>st</sup> December 1993. The pieces of legislation both state that all owners of phase 1 and phase 2 sites must apply to the planning authority to have the conditions to which their permission relates reviewed.
- 2.11** However, the Act requires further legislation in the form of an Order, before ROMPS can be undertaken. The Minister under the former DoE has stated that whilst this legislation is not currently being implemented, no decision has been taken NOT to implement the legislation at some point in the future and has instructed Departmental officials to examine how best to implement ROMPS in the new two tier planning system.<sup>1</sup>
- 2.12** Approximately 370 mineral permissions were granted throughout NI between the 1960's and the early 1990's, with ACBCBC Borough having 23 of these which equates to approximately 06% of all the mineral permissions which are to be subjected to ROMPS<sup>2</sup>.

**Table 1: ACBCBC ROMPs**

<b>FORMER LGD</b>	<b>NO OF OLD MINERAL PERMISSIONS</b>	<b>LGD (%) OF NI TOTAL</b>
<b>ARMAGH</b>	18	05%
<b>BANBRIDGE</b>	03	01%
<b>CRAIGAVON</b>	02	01%

## **DoE 'Call for Evidence' for a review of permitted development rights for mineral exploration**

- 2.13** The DoE (now DfI) is undertaking a review of permitted development rights for mineral exploration as set out in part 16 of the Schedule to the Planning (General Permitted Development) Order (Northern Ireland) 2015. They have issued a Call for Evidence in March 2016 to help inform the scope of the review and invited the Council to submit representations regarding the matter.
- 2.14** In exploring their reasons for undertaking the review, DoE state that permitted development rights for mineral exploration have remained unchanged for over two decades. The existing provisions were designed to deal with onshore oil and gas exploration involving the conventional techniques that were used at that time. The industry has progressed since then with modern exploration and excavation techniques. In addition, the recent emergence of unconventional hydrocarbon extraction techniques means this is a timely opportunity for the views of all stakeholders to be considered.
- 2.15** Therefore in light of the changes to technologies and increased pressures for exploitation of natural resources, it is considered that a more stringent approach should be adopted for mineral exploration. Therefore ACBCBC recommended that the existing provisions on permitted development are amended to include the following conditions:
- a) A higher level of protection should be given to European and Ramsar Sites.
  - b) The depths of the boreholes should be limited, and specifications regarding the lining of the boreholes should be stipulated.
  - c) Removal of permitted development rights for petroleum exploration.
  - d) Limitations on the hours of operation.
  - e) Restrictions on horizontal drilling in relation to sensitive receptors.
  - f) Noise limits of plant and machinery to be utilised.

## **The Mineral Resources Map for NI**

- 2.16** The Mineral Resources Map for Northern Ireland was produced by the Geological Survey for Northern Ireland in 2012. It comprises six sheets, one for each county and the relevant information for ACBCBC has been extracted and drawn together in Appendix 3 of this paper. These maps are intended to assist the strategic decision making in respect of mineral extraction and to protect important mineral resources against sterilisation from surface development. Please note that it is expected that further information should become available over the coming months in relation to minerals and the Lough Neagh resource.

## **Planning Policy Context**

### Regional Development Strategy 2035

- 2.17** The Regional Development Strategy 2035 (RDS) does not provide any explicit policy aims or objectives in relation to minerals but does recognise the importance of the rural area and that rural industries and enterprises should be

facilitated at appropriate locations where their impact on the environment and important landscapes are kept to a minimum (SFG 13).

#### Planning Strategy for Rural Northern Ireland (PSRNI)

- 2.18** In the absence of a planning policy statement for mineral development, the PSRNI which was published in September 1993 constitutes prevailing planning policy. The concept of sustainability is a notable element of the strategy, however it does recognise the difficulties this can pose in the context of mineral development. It recommends that the rate of consumption of finite minerals should be reduced by encouraging the use of renewable and recycled alternatives wherever this is economically viable and practical. The PSRNI largely mirrors the provisions of the recently adopted Strategic Planning Policy Statement (as considered in detail below) in that it recognises the need to facilitate mineral development while also affording sufficient protection to the environment. The main difference between the two documents is the stipulation within the Strategic Planning Policy Statement (SPPS) that there is a presumption against development for the extraction of hydrocarbons (including “fracking”).

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<sup>1</sup> AQW 47847/11-15 by Stephen Agnew MLA to Minister Mark H Durkhan – Tabled 26/6/15.

<http://m.niassembly.gov.uk/questions/writtensearchresults.aspx?&qf=0&qfv=1&ref=AQW%2047847/11-15>

<sup>2</sup><http://www.planningni.gov.uk/downloads/news-legislation-planreform-romp.pdf>

**2.19** The provisions of the PSRNI relevant to mineral development are laid out in the table below together with the corresponding paragraphs of the SPPS.

**Table 2: Mineral Planning Policy in SPPS (NI) & PSRNI.**

<b>PSRNI POLICY</b>	<b>POLICY DETAIL</b>	<b>SPPS PARA:</b>
MIN 1 – ENVIRONMENTAL PROTECTION	It is important to identify sites which are subject of mineral proposals and which also have historical, environmental, scientific interest. The impacts which development would have on key sites within these areas are important considerations and extensions of existing sites are preferred to new developments	6.158
MIN 2 – VISUAL IMPLICATIONS	Parts of the country which are of significant beauty tend by their nature to contain minerals for development. Attention must be paid to the impact which mineral development will have on the visual merit of these locations. Development which would damage skylines and lead to stockpiling of plant machinery and other infrastructure, should be resisted.	6.165
MIN 3 – AREAS OF CONSTRAINT	In areas of significant beauty or environmental sensitivity, areas of mineral constraint should be designated wherein there will be a presumption against mineral development. However, some scope may exist for permitting development in these areas if it is short term in nature and has limited impacts.	6.153
MIN 4 – VALUABLE MINERALS	Where minerals which are of significant value to the economy are located in a designated environmental area, then, whilst there is not a presumption against development, due weight and consideration will be given to that zoning.	6.157
MIN 5 - MINERAL RESERVES	Where valuable minerals have been identified, then surface development which would sterilise these minerals and prohibit future development will not be permitted.	6.155

MIN 6 – SAFETY AND AMENITY	Consideration must be given to compatibility with adjacent land uses, particularly housing. Where mineral development would be incompatible in terms of amenity because of things like noise, dust, vibrations, then permission is likely to be refused. Similarly, where over ground development is proposed but is incompatible with existing underground operations, this should be refused.	6.159
MIN 7 - TRAFFIC	Where traffic resulting from mineral development would be sufficient to prejudice road safety, this will mean permission is refused. Consideration must be given to the importance of the mineral to the local economy and whether alternative sites can be found.	6.160
MIN 8 – RESTORATION	Applications for mineral development must include proposals for restoration.	6.167

### Strategic Planning Policy Statement (SPPS)

**2.20** A final form SPPS was published in September 2015 and is intended to consolidate 20 different planning policy statements into one document and set out strategic subject planning policy for a wide range of planning matters. It also provides the core planning principles to underpin delivery of the two-tier planning system with the aim of furthering sustainable development. It sets the strategic direction for the new councils to bring forward detailed operational policies within future local development plans. Therefore the council needs to be mindful of the SPPS strategic objectives for minerals development as detailed below.

- facilitate sustainable minerals development through balancing the need for specific minerals development proposals against the need to safeguard the environment;
- minimise the impacts of minerals development on local communities, landscape quality, built and natural heritage, and the water environment; &
- secure the sustainable and safe restoration, including the appropriate re-use of mineral sites, at the earliest opportunity.

**2.21** The SPPS acknowledges that mineral development can make a significant contribution to the local economy in various ways; not least by providing materials for construction such as sand, gravel and crushed rock. Because of this fact, it is important to facilitate mineral development but in a sustainable fashion which balances its economic importance with the need to protect the environment. It directs that natural mineral resources should still be developed but not at the overriding cost of the environment.

**2.22** The main challenges facing the planning system in relation to mineral extraction include the need to address amenity issues caused by extraction. This can be problematic because mineral development, by its nature, can only happen at specific sites where the minerals are located and therefore the identification of alternative sites can be challenging.

**2.23** Another challenge presented by mineral development is the need to restore sites appropriately after the extraction process has been completed.

***SPPS Strategic Policy regarding preparation of Local Development Plans***

**2.24** The SPPS states that the policy approach for minerals development, including peat extraction from bog lands, must be to balance the need for mineral resources against the need to protect and conserve the environment. The SPPS requires that LDP's should bring forward policies and proposals that reflect the policy approach of the SPPS, tailored to the specific circumstances of the plan area.

**2.25** In particular the plan should ensure that sufficient local supplies of aggregates can be made available for use within the local area and where appropriate the regional market and beyond to meet likely future development needs over the plan period. The plan also should ensure that existing mineral supplies which are of economic or conservation value are safeguarded and seek to ensure that workable mineral resources are not sterilised by other surface development which would prejudice future exploitation.

**2.26** The SPPS states that the LDP should also identify areas which should be protected from minerals development because of their intrinsic landscape, amenity, scientific, or heritage value. These areas are normally referred to as Areas of Constraint on Mineral Development (ACMD). The SPPS states that there should be a general presumption against mineral development in such areas. However, where a designated area such as an Area of Outstanding Natural Beauty (AONB) covers expansive tracts of land, the Plan should carefully consider the scope for some minerals development that avoids key sites and that would not unduly compromise the integrity of the area as a whole or threaten to undermine the rationale for the designation. It should be noted that post RPA, the Borough no longer contains any AONBs after the Slieve Croob area of the Mourne AONB was transferred to Newry/Mourne & Down. The issues concerning minerals in ACBCBC and the approach to be taken to ACMD's is discussed in Section 6.0 of this paper.

**2.27** The SPPS also states that in addition to specifying areas where mineral development would be less suitable, LDP's may also specify areas where mineral development would be suitable. These will normally be areas where there will be less impacts on nearby amenity or on the environmentally sensitive areas and will have good accessibility to strategic transport networks.

- 2.28** The SPPS notes that from time to time minerals may be discovered where they are particularly valuable to the economy and their exploitation may create environmental effects which are particular to the methods of extraction or treatment. There will not be a presumption against their exploitation in any area, however in considering a proposal where the site is within a statutory policy area due weight will be given to the reason for the zoning. It is important to note however that the SPPS states a presumption against the exploitation of unconventional hydrocarbon extraction (commonly referred to as ‘fracking’) until the Department is satisfied there is sufficient and robust evidence on all environmental impacts.
- 2.29** Proposals for the extraction of peat for sale will only be permitted where the extraction is consistent with the protection of boglands valuable to nature conservation interests, and with the protection of landscape quality particularly in AONB’s. The policies contained in PPS 2 – Planning and Nature Conservation provide protection for a full range of sites of nature conservation importance, including peatlands and it is detailed further in the paper.
- 2.30** Proposals for minerals development must also have particular regard to the safety and amenity of the occupants of developments in close proximity to the mineral workings. Minerals development likely to compromise safety or to significantly impair the amenity of people living or working in proximity to the site will not normally be acceptable. Such adverse impacts could result from noise, vibration and dust arising through excavation, processing or transporting of materials. Where such impacts are judged to be incompatible with standards of amenity acceptable to the planning authority, planning permission should be refused, unless the developer can demonstrate adequate means of mitigation.
- 2.31** Visual intrusion is often the most significant environmental impact and this should be avoided in all mineral development with particular attention being given to the importance of preserving skylines and avoiding unnecessary and unsightly stockpiling of plant machinery and infrastructure.
- 2.32** Where approval is granted for mineral development, appropriate conditions should be attached to ensure that sufficient restoration measures are included as part of the development in order to leave the site in a visually pleasing manner after development has been carried out.

## Planning Policy Statement 2 (PPS2) Planning and Nature Conservation:

- 2.33** PPS2 provides planning policy in relation to development within European (Special Area of Conservation: SAC & Special Protection Areas: SPA) and Ramsar sites. In Policy NH1, it states' planning permission will only be granted for a development proposal that, either individually or in combination with existing and/or proposed plans or projects, is not likely to have a significant effect on' Ramsar sites (International designation) or the European designations, Special Areas of Conservation (SAC) and Special Protection Areas (SPA). The Council shall agree to the development only after having ascertained that it will not adversely affect the integrity of the site. Only in exceptional circumstances as detailed in Policy NH1, will a development proposal which could adversely affect the integrity of a European or Ramsar Site be permitted. The Boroughs International & European nature conservation designations are concentrated within and around Lough Neagh.
- 2.34** PPS2 also provides planning policy in relation to development within National Sites of Nature Conservation Importance. In Policy NH3, it states that planning permission will only be granted for a development proposal that is not likely to have an adverse effect on the integrity, including the value of the site to the habitat network, or special interest of:
- an Area of Special Scientific Interest;
  - a Nature Reserve;
  - a National Nature Reserve; or
  - a Marine Nature Reserve.
- A development proposal which could adversely affect a site of national importance may only be permitted where the benefits of the proposed development clearly outweigh the value of the site.  
In such cases, appropriate mitigation and/or compensatory measures will be required.
- 2.35** Additionally, PPS2 is an important consideration in relation to cases regarding peat extraction and Policy NH5 Habitats, Species or Features of Natural Heritage Importance is of direct relevance. This policy states planning permission will only be granted for a development proposal which is not likely to result in the unacceptable adverse impact on, or damage to known: priority habitats; priority species; active peatland; ancient and long-established woodland; features of earth science conservation importance; features of the landscape which are of major importance for wild flora and fauna; rare or threatened native species; wetlands (includes river corridors); or other natural heritage features worthy of protection.
- 2.36** A development proposal which is likely to result in an unacceptable adverse impact on, or damage to, habitats, species or features may only be permitted where the benefits of the proposed development outweigh the value of the

habitat, species or feature. In such cases, appropriate mitigation and/or compensatory measures will be required.

### **3.0 Area Plans**

#### Armagh Area Plan (AAP) 2004 & Alteration No 1.

- 3.1** AAP & Alteration No 1 do not designate any Areas of Constraint on Mineral Development. The AAP 2004 does however contain direction in applications for mineral development in relation to:
- Nature Reserves or Areas of Special Scientific Interest (ASSI) – planning permission will not normally be given where they would be likely to damage the essential character of the area;
  - In relation to amenity of neighbours, planning applications will be given more favourable consideration which contain effective measures to avoid or alleviate environmental disturbance;
  - Where a proposed mineral development would result in increased traffic, planning permission will normally be refused unless those issues are addressed;
  - Where reserves of a mineral (of limited occurrence and has some uncommon or valuable property) have been proven, the Department will seek to ensure surface development does not sterilise the reserves and prejudice their future exploitation;
  - New mineral development permissions will be conditional upon the the rehabilitation of sites to a safe and tidy condition;
  - Applications for peat extraction will be considered favourably where they are consistent with the protection of boglands, valuable to conservation interests, watercourses and amenity.

#### Banbridge / Newry & Mourne Area Plan (BNMAP) 2015

- 3.2** BNMAP does not contain any mineral policy or designate any Areas of Constraint on Mineral Development (ACMD). This follows the PAC report into the draft plan in 2012 which is discussed at Section 6.0 of this paper.

#### Craigavon Area Plan (CAP) 2010

- 3.3** The CAP 2010 designates two Areas of Constraint on Mineral Development (AoCMD) around the Lough Neagh Ramsar Site and Montiaghs Moss under Policy MIN 1: Areas of Constraint on Mineral Developments. The Plan refers to Policy MIN 3 of A Planning Strategy for Rural NI in relation to AoCMD Plan Policy.
- 3.4** The CAP 2010 also contains Plan Policy Min 2: Hydrocarbon Exploration and states that ‘applications for planning permission to sink wells, for the purpose of appraising the nature or extent of the discovery, will be considered in the context of of the long term suitability of the site for production purposes’. There will not be a presumption against development, rather each application will be treated on its own merits. However, the provisions of the newly published SPPS, in relation to hydrocarbon exploitation, will take precedence over this plan policy.

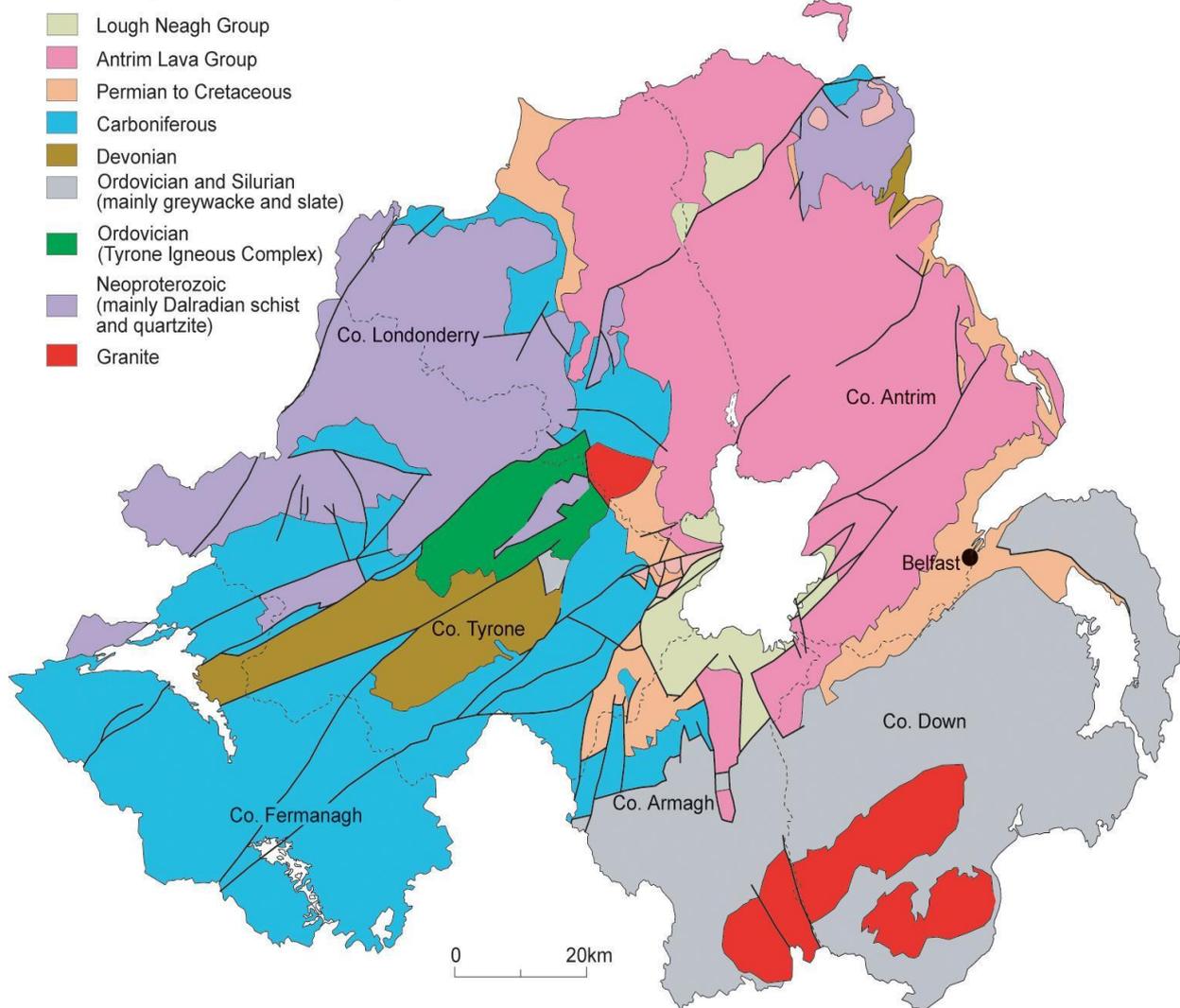
### Dungannon and South Tyrone Area Plan (DSTAP) 2010

- 3.5** An area within Dungannon and South Tyrone District east of the Blackwater River was transferred to ACBCBC post-RPA in April 2015. This element equated to the County Armagh portion of the former council area and included the settlements of Clonmore, Derrylee and Tamnamore.
- 3.6** DSTAP designates six areas of mineral constraint and two mineral policy areas within the Plan area. Only one DSTAP area of mineral constraint falls within the area transferred to ACBCBC. It is the Lough Neagh Western Shores area which is drawn from the boundary of the Lough Neagh & Beg Ramsar site and includes that part of Co. Armagh north of the M1 and east of the Blackwater River.
- 3.7** DSTAP Plan Policy MN3 states that where hydrocarbon extraction is identified, sink wells will be considered to identify the exact extent of any potential benefits. There will not be a presumption against development, rather each application will be treated on its own merits. However, the provisions of the newly published SPPS, in relation to hydrocarbon exploitation, will take precedence over this plan policy.

## 4.0 Economic Role of Minerals in Northern Ireland

4.1 The geology of Northern Ireland is very diverse for such a relatively small area. There is tremendous variability in the types of naturally occurring rock that may be used as aggregate. The simplest classification is based on whether they are of igneous (basalt, granite, dolerite), sedimentary (clays, chalk, sandstone, limestone, shale, greywacke) or metamorphic (schist). See map below that presents NI geology by the basic bedrock geology.

**Diagram 1: NI Geology Map (basic bedrock) – source QPANI.**



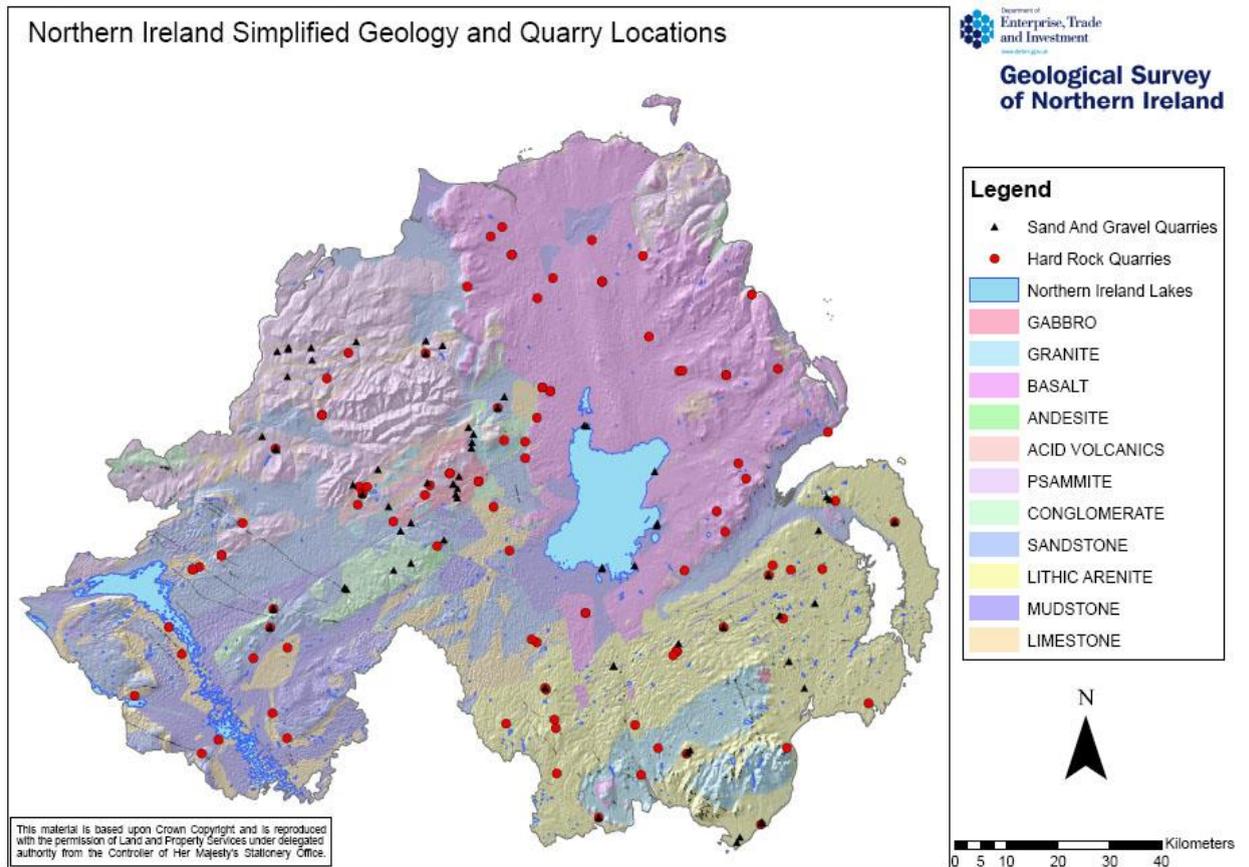
4.2 As stated in the SPSS, minerals play a vital economic role in Northern Ireland. Minerals provide raw materials for the construction, manufacturing, energy creation and agricultural sectors. Each of these sectors generate employment and stimulate other parts of our economy. In Northern Ireland the extraction of minerals and their exploration makes a very significant contribution to property and quality of life given the large proportion of income derived from this industry and particularly in rural areas.

- 4.3** The Quarry Products Association Northern Ireland (QPANI) have estimated that quarries in Northern Ireland produce aggregates to the value of around £84 million each year<sup>3</sup> and the Geological Survey of Northern Ireland (GSNI) estimate that the total turnover from the Quarry and Quarry Products Sector in NI is around £630 million, which equates to about 3% of the GDP<sup>4</sup>. See Diagram 2 below which details NI simplified geology and quarry locations.
- 4.4** QPANI also estimate that the total number of people employed by the quarrying industry is 4,276.<sup>5</sup> The Quarterly Employment Survey (QES) produced by NISRA in March of 2015 estimates the amount of people employed directly in quarrying is around 1,790 and the amount of people employed in the manufacture of mineral products is 4,450<sup>6</sup>. This would suggest that 6,240 jobs are created either directly or indirectly by the quarrying and mineral industries. Given that the QPANI figures are based on incomplete data from the 2011 Mineral Statement, the QES figure of 6,240 may be more accurate.
- 4.5** QPANI states that the local quarry products industry is the main supply chain into the local construction industry with approximately 25 million tonnes of aggregate produced annually. Approximately 25% of this (6 million tonnes) is exported in the form of aggregates and processed products into construction markets in the Republic of Ireland (RoI) and Great Britain (GB). Of the remaining 19 million tonnes an estimated 60% (10 million tonnes) would be supplied to the public sector in Northern Ireland.
- 4.6** There are around 160 quarries and sand pits in Northern Ireland and they produce approximately 24 million tonnes of aggregates each year. In a typical year, Northern Ireland's quarry network supports:
- The building of 12,000 new homes (a new home requires approximately 50 tonnes of aggregates);
  - Improvements to airports, roads and the rail network; and
  - Improvements to schools, universities, hospitals.
- 4.7** In other words, the construction industry in Northern Ireland, which provides considerable employment and is responsible for around 10% of the country's GDP<sup>8</sup>, is reliant on quarrying and the development of minerals. Without mineral development, the construction industry would not have the local fundamental materials it needs such as sand, gravel, limestone and crushed rock. A successful local quarrying industry means raw materials come to local projects sooner and cheaper, lowering the cost of construction and supporting jobs.

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<sup>3</sup> Spreadsheet produced by QPANI for ACBCBC, based on information taken from DETI's 2011 Mineral Statement. Information has been calculated on a "pro rata" basis from the last 10 mineral statements, given that not all quarries in Northern Ireland responded to the 2011 Mineral Statement. See Appendix 2 for Spreadsheet.

**Diagram 2: NI Geology & Quarry Location Map**



**4.8** It is clear that the development of mineral resources has indisputable benefits for the Northern Ireland economy in terms of direct and indirect job creation as well as allowing us to continually improve our housing stock and infrastructure. Whilst minerals are therefore essential to support economic growth in Northern Ireland their development and operation must be balanced against the significant effects they can have on the environment and on amenity. Continued mineral development, which is sustainable and respects the environment and the amenity of residents is an essential part of the economic outlook for Northern Ireland.

<sup>4</sup> Information taken from presentation given to ACBCBC by GSNI

<sup>5</sup> Spreadsheet produced by QPANI for ACBCBC, based on information taken from DETI's 2011 Mineral Statement. Information has been calculated on a "pro rata" basis given that not all quarries in Northern Ireland responded to the 2011 Mineral Statement. See Appendix 1 for Spreadsheet. Figure also provided in the above presentation from GSNI

<sup>6</sup> Quarterly Employment Survey (QES), NISRA, 17/6/15, P. 4-5

<sup>7</sup> [www.qpani.org/pro\\_figures01.htm](http://www.qpani.org/pro_figures01.htm)

<sup>8</sup> See above link

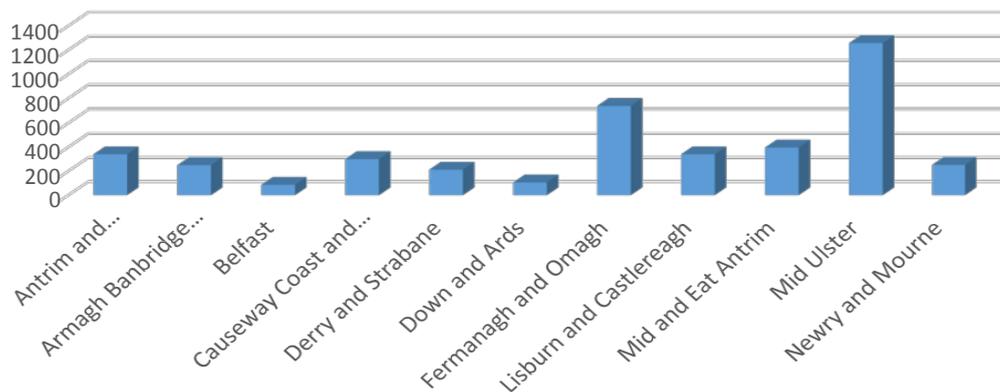
## 5.0 Minerals in ACBCBC

### Economic Role

- 5.1 Figures obtained from QPANI and GSNI suggests that there are 25 quarry sites operating in the ACBCBC Borough and that there are approximately 3.2 million tonnes of aggregates produced each year. This equates to an annual value of approximately £14.5 million and creates employment for 250 people in the quarry industry. The value (£) of the annual quarrying aggregate within ACBCBC Borough is the highest of all 11 NI council areas. The number of quarry related employees (250) in ACBCBC is markedly low compared to other districts with comparable annual values/tonnage (eg. Mid Ulster which QPANI states employs 1257 people or Fermanagh Omagh which employs 737 people). This may be explained by the type of quarry operation or larger quarries which are more mechanized requiring less labour. The graph below shows the relative importance of mineral related activity as a quarry value and in terms of employment across the 11 NI LGDs.

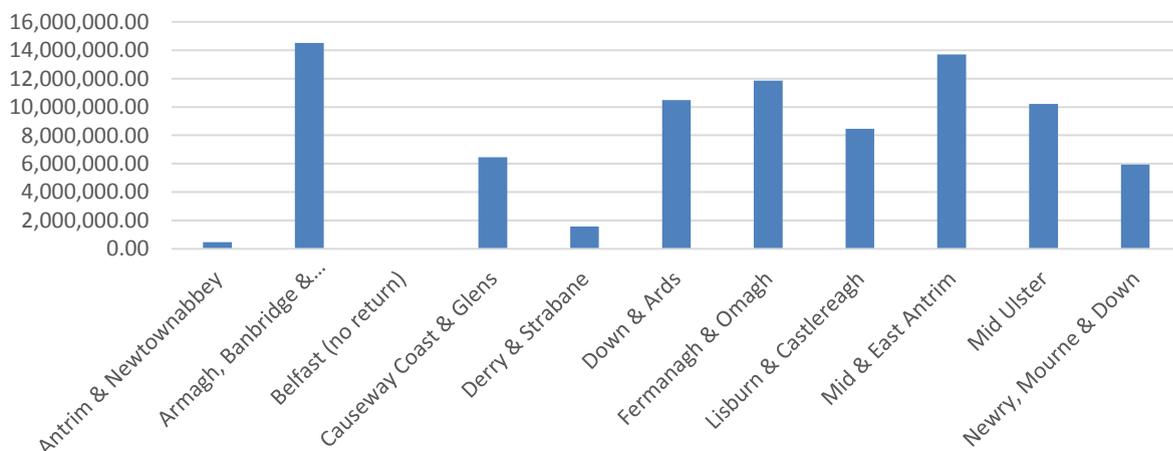
**Figure 1: NI Quarrying Industry Employment Figures by LGDs 2010**

(Source: QPANI figures – See Appendix 2)



**Figure 2: NI Annual Average Quarry Value (£) by LGDs 2001-2011**

(Source: QPANI figures - See Appendix 2)



- 5.2** The QPANI information on annual mineral production is provided on a county basis. Initially, we should highlight that ACBCBC Borough contains the majority of Co. Armagh north of the Newry Mourne & Down District boundary, a small portion of County Antrim from Aghagallon to Portmore Lough adjacent to Lough Neagh and the north western portion of Co. Down as far north as Bleary and Magheralin. Therefore, the figures for Counties Armagh, Antrim and Down will only give an indication of mineral production in ACBCBC. Considering the small area of Co. Antrim and the low number of Co. Antrim quarries within ACBCBC, this paper will mainly focus on the QPANI mineral production figures within counties Armagh and Down.
- 5.3** QPANI figures reveal that counties Armagh and Down were the sources of the vast majority of sandstone production in NI (98-99%) in 2009-2010 and the source of approximately 40% of those classified as 'other' minerals over the same period. Counties Armagh and Down were also the source of approximately 24% of basalt and igneous rock (other than granite) production in NI in 2009. Additionally, County Armagh was also a significant source of limestone production in 2009 with 19% of the NI total. The two counties also produced a small percentage of the NI total of sand and gravel (approximately 6% of NI total in 2009 and 11% in 2010).
- 5.4** Following a commission from the DoE, the British Geological Survey and its counterpart the Geological Survey of Northern Ireland have produced a Mineral Resources Map of Northern Ireland in 2012. The map is intended to assist strategic decision-making in respect of mineral extraction and the protection of important mineral resources against sterilisation. It will provide planners, industry and local communities with a powerful tool to assist future decisions on a county-by-county basis in relation to the continued supply of minerals and in the protection of the environment. In essence, local industry will be able to use local minerals more effectively.
- 5.5** The Minerals Resources Map of Northern Ireland comprises six sheets, one for each county. The six digitally generated maps at a scale of 1:100 000 scale are now available from the following link source:  
<http://www.bgs.ac.uk/mineralsuk/planning/resource.html>  
The map has been produced by the collation and interpretation of mineral resource data principally held by the Geological Survey of Northern Ireland. The major elements of information presented on the map are:
- The geological distribution of all onshore (above low water mark) mineral resources;
  - The extent of mineral planning permission and their current planning status (extant or expired);
  - The recorded occurrences of metallic minerals;
  - The recorded location of building stone quarries; and
  - The extent of selected landscape and nature-conservation designations (SACs, SPAs, RAMSAR sites, AONBs, ASSIs, NNR and scheduled monuments) and planning designations (Area of Constraint on Mineral Developments).

- 5.6** The Minerals Resource Map of NI has been produced at a county level for the six counties. The following is a summary of the key geology within the parts of counties Armagh, Down & Antrim that make up ACBCBC Borough.
- 5.7** The portion of County Armagh within ACBCBC includes the lands:
- east of the Blackwater River and Mid-Ulster council area;
  - north-east of the Republic of Ireland between Tynan and Carnagh;
  - north of Newry, Mourne & Down district council boundary between Carnagh and Drumbanagher, Poyntzpass; and
  - west of an approximate line from Drumbanagher, Poyntzpass to Tandragee to Lurgan to Castor Bay at Lough Neagh.
- 5.8** The minerals resource map text highlights the following key geology containing quarries and areas of potential within the County Armagh portion of ACBCBC:
- Areas of limestone east and west of Armagh City;
  - Significant areas of sandstone north and south of Armagh City;
  - Areas of Lough Neagh & Brick Clay south of Lough Neagh southern shores; &
  - Localised areas around Lough Neagh shores for sand and gravel;
- 5.9** There is also a widespread resource of peat in raised bogs overlying the Lough Neagh clay geology and glacial tills in the northern part of County Armagh which are worked for horticulture.
- 5.10** Additionally, in relation to metalliferous minerals in Co. Armagh, there are historic lead mines around Derrynoose and the presence of gold in the Derrynoose / Clay Lake areas as detailed below in paragraph 5.25.
- 5.11** The portion of County Down within ACBCBC includes the lands:
- east of an approximate line from Drumbanagher, Poyntzpass to Tandragee to Lurgan to Castor Bay at Lough Neagh;
  - north of Newry, Mourne & Down council boundary between Drumbanagher, Poyntzpass and Rathfriland;
  - west of the Slieve Croob AONB boundary and Newry, Mourne & Down District council area between Ballyrone and Ardtanagh; and
  - west of an approximate line from Ardtanagh to Kinallen to Magheralin to the small finger of County Down that reaches Lough Neagh between Ellis's Cut and the Gowdy River near Magheralin.
- 5.12** The minerals resource map text highlights the following key geology containing quarries and areas of potential within the County Down portion of ACBCBC:
- Significant areas of sandstone north and south of Banbridge Town;
  - Areas of Lough Neagh & Brick Clay on the Lough Neagh south eastern shores;
  - Area of granite within the Mourne foothills, north east of Glasker and south of Katesbridge;
- 5.13** The small portion of County Antrim within ACBCBC includes the lands:
- north of the Gowdy River and Prospect hall including Aghagallon;
  - west of Aghalee and Lower Ballinderry settlements ; and

- south west of Portmore Lough and Tunny Cut including the Deer park, Montiaghs , Derrymore & Derryclone areas.

**5.14** The minerals resource map text highlights the following key geology containing quarries and areas of potential within the small County Antrim portion of ACBCBC:

- Areas of Lough Neagh Clay on the Lough Neagh south eastern shores;
- Localised areas around Lough Neagh shores for sand and gravel; and
- Small area of igneous rock around Aghagallon.

#### Availability of Minerals in ACBCBC

**5.15** Existing information in relation to mineral reserves available within ACBCBC is contained within the general estimates produced by the Geological Survey of Northern Ireland (GSNI) for the full counties of Armagh, Down and Antrim. Information on the availability of minerals at county level is derived from the Mineral Resource Map (MRP) produced by GSNI (Appendix 3 shows that portion of the Map covering ACBCBC). The MRP is intended to assist the strategic decision making in respect of mineral extraction and to protect important mineral resources against sterilisation from surface development. It should also be noted that the data depicted on the map relates only to inferred extent and location of a particular mineral resource. Inferred resources are those defined from geological information and assumed, but not verified geological continuity. Thus the inferred boundaries are approximate and only indicate the areas within which potentially working workable minerals may occur. It should also be noted that there is no exact information on the amount of permitted mineral reserves ie that associated with existing permissions that are currently being worked. Similarly, figures regarding the % output of counties in relation to various types of mineral are taken from the Mineral Statement of 2009/2010 and DETI have advised that not all quarries in NI provide information.

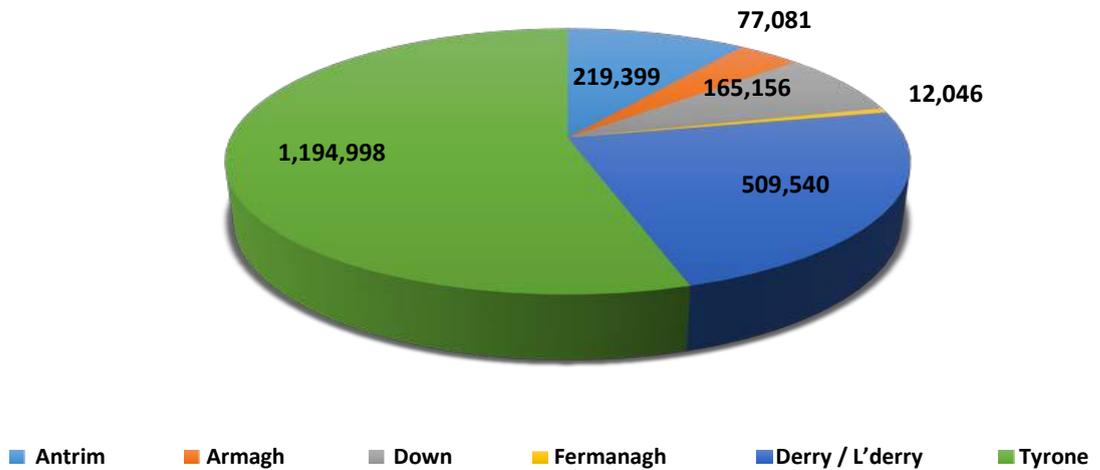
**5.16** The ACBCBC Borough contains portions of counties Armagh, Down and Antrim. The total production of the three counties are responsible for producing almost 56% of all minerals in Northern Ireland. The two counties which contribute most to Northern Ireland’s mineral production are Antrim (25%) and Down (22%), whilst Armagh produces the least of the six NI counties (9%).

**Table 3: NI Mineral Production by County (Tonnage)**

County	Tonnes	(% of Total)
Antrim*	3989905	24.69
Armagh*	1425670	8.82
Down*	3628429	22.45
Fermanagh	2618129	16.20
Derry / L’derry	1831038	11.33
Tyrone	2668309	16.51
<b>NI Total</b>	<b>16161480</b>	<b>100.00</b>

(Source: DETI 2010 Mineral Statement. \*ACBCBC Borough contains a portion of counties Antrim, Armagh & Down).

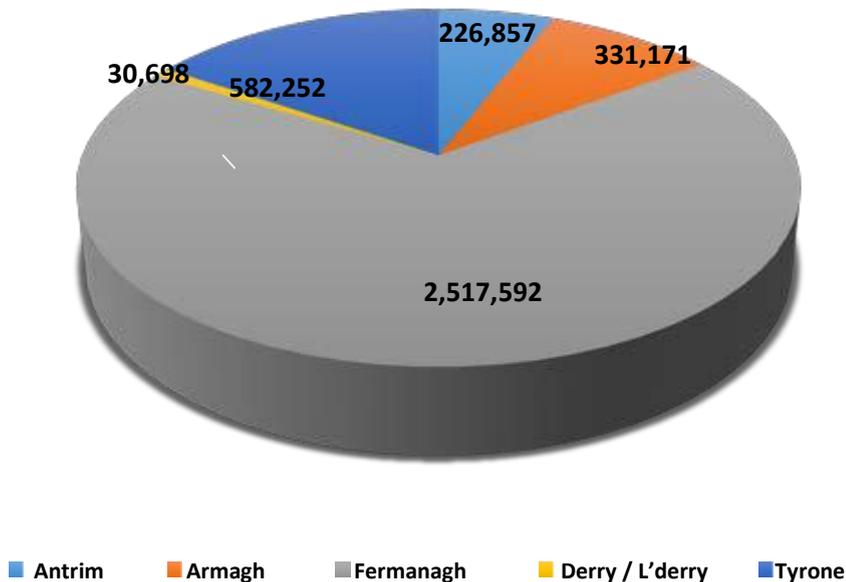
**Diagram 3: Annual NI Sand & Gravel Production by County (Tonnage)**



**(Source: DETI 2010 Mineral Statement)**

**5.17** Sand and Gravel – DETI figures reveal that the counties of Tyrone and Derry/L'derry are the main producers of sand and gravel in Northern Ireland (approximately 78% of NI total) but there are a number of notable sand pits on the shores of Lough Neagh such as Mulhollands at Derryclone and Emersons at Ardmore. The location and type of all quarries in ACBCBC is detailed in Appendix 1.

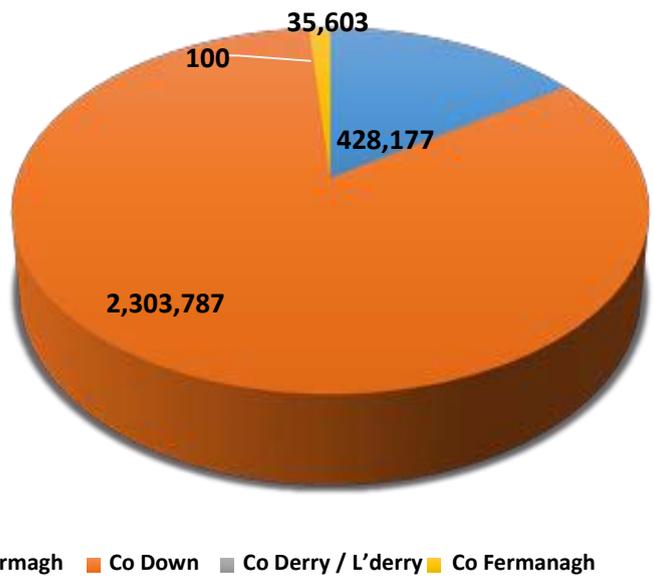
**Diagram 4: Annual NI Limestone Production by County (Tonnage)**



(Source: DETI 2010 Mineral Statement)

**5.18 Limestone** – according to DETI figures, Fermanagh is the largest producer of limestone in NI (68%) whilst Armagh produces approximately 9%. The main areas of Co. Armagh where there is limestone geology are within ACBCBC, east and west of Armagh City. Notable limestone quarries include Tynan, Navan and Annacramp. There are no significant areas of limestone geology within ACBCBC in counties Antrim or Down.

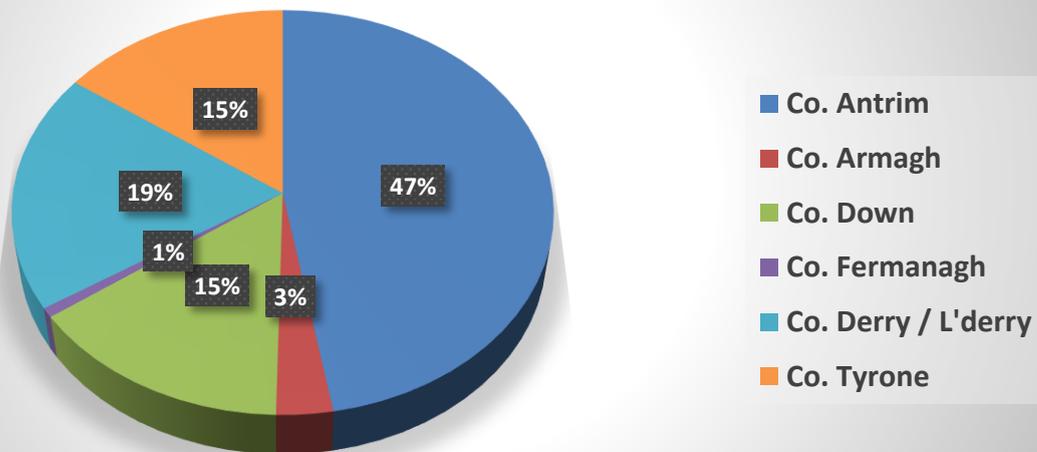
**Diagram 5: Annual NI Sandstone Production by County (Tonnage)**



(Source: DETI 2010 Mineral Statement)

**5.19 Sandstone** – Counties Armagh and Down produce the vast majority of Northern Ireland’s sandstone (almost 99%). The main sandstone areas in Co. Armagh are south of a line from Acton to Ballymacnab to Middletown and a separate area north of Armagh City. The large sandstone area in Co. Down surrounds Banbridge as far north as Magheralin and as far south as the foothills of the Mourne around Rathfriland. Notable sandstone quarries include Outlack, Glebe Hill, Clady in Co. Armagh and Loughbrickland, Edentrillick and Tynan, Navan and Annacraup. There are no significant areas of sandstone geology within ACBCBC in Co. Antrim.

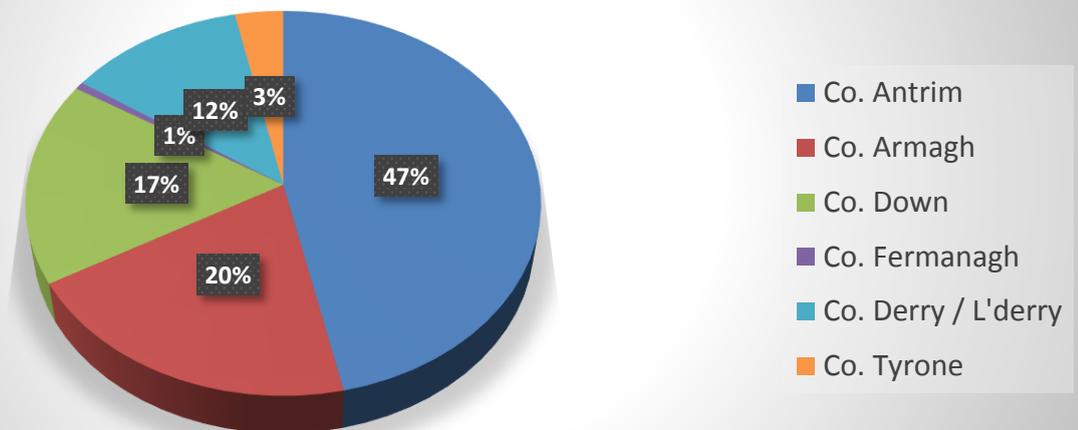
**Diagram 6: Annual NI 'Basalt & Igneous (other than Granite) ' Production by County (Tonnage)**



(Source: DETI 2010 Mineral Statement)

**5.20 Basalt & Igneous Rock (other than Granite) –** Counties Antrim, Armagh and Down produce the majority of Northern Ireland’s basalt & igneous rock (other than granite: almost 63%). The NI Minerals Resource Map show two areas of igneous rock and meta-igneous rocks within ACBCBC. The first area straddles Portadown to the west and east, either side of a brick clay vein. The second area is north east of Rathfriland in the foothills of the Mourne Mountains.

**Diagram 7: Annual 'Other'\* Mineral Production by County (Tonnage)**



\* Other minerals include rock salt, chalk, dolomite, fireclay and granite. (Source: DETI 2010 Mineral Statement)

**5.21 ‘Other’ Rock Types (includes rock salt, chalk, dolomite, fireclay and granite) –** Counties Antrim, Armagh and Down produce the majority of Northern Ireland’s ‘other’ rock types (84%). The NI Minerals Resource Map show that the vast majority of other rock types produced within counties Antrim, Armagh & Down are beyond the ACBCBC Borough boundaries.

**5.22 Lignite** - Lignite is often referred to as brown coal and is a soft combustible sedimentary rock. It does not have the same heat content as other combustible fuels such as coal or peat and is used mainly in the generation of electricity. Lignite resources have been identified at three main areas in Northern Ireland; Ballymoney, Crumlin and Coagh. The high profile debate that surrounded the Ballymoney lignite proposals are well known because of the nature of the works and the sensitivity of the landscapes. Significant resources also exist under Lough Neagh. However, because of its low energy density and typically high moisture content, brown coal /lignite is inefficient to transport and is not traded extensively on the world market compared with higher coal grades. It is often burned in power stations near the mine. This means that proposals to extract lignite often have significant local environmental consequences and can therefore, be controversial in the local area.

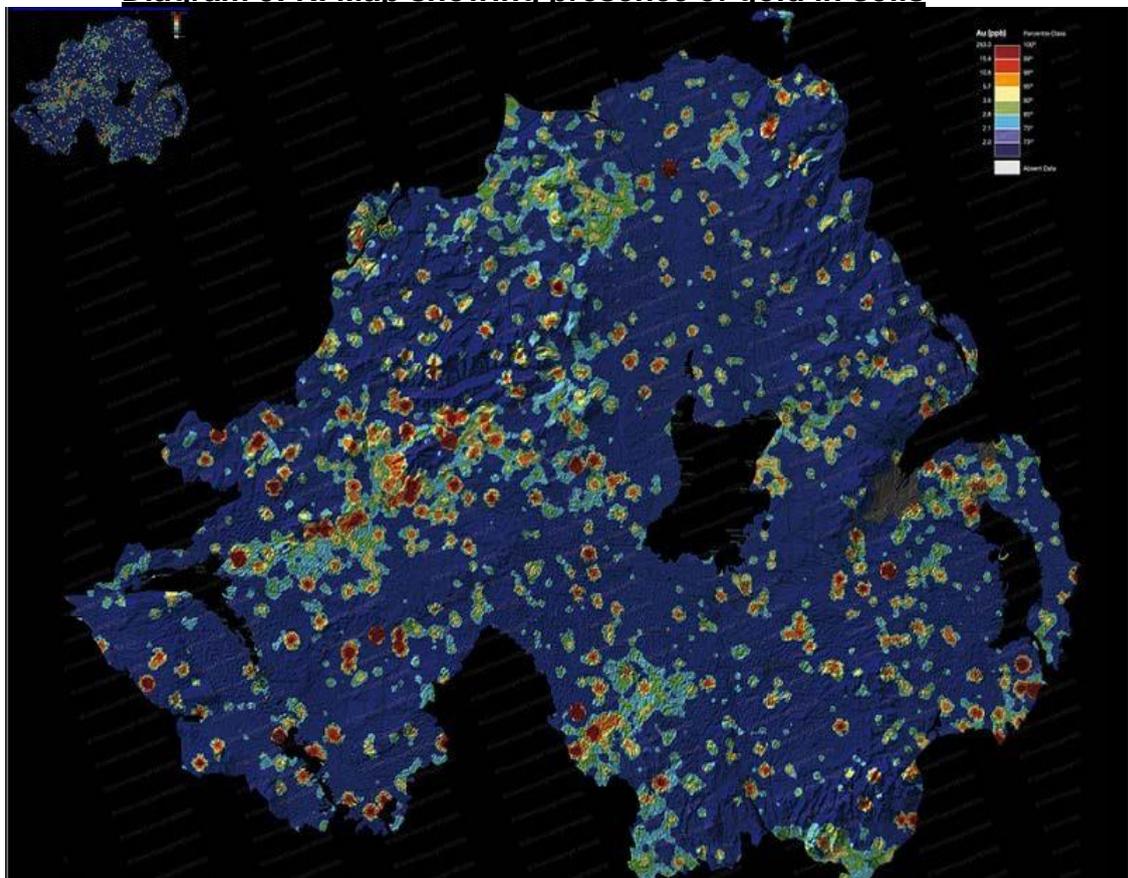
**5.23** It should be noted that a large proportion of the lignite resources identified on the mineral resource map are located in or close to the European RAMSAR site at Lough Neagh and the surrounding wetlands which also include SAC & SPA nature conservation designations. The significance of these designations would be an important factor in the consideration of any interest to exploit the lignite reserves in the area.

### **Valuable Minerals: Gold & Silver in NI**

**5.24** Northern Ireland is arguably the most prospective area of Britain and Ireland for precious metal deposits. Alluvial gold has been recovered since Celtic times when it was used to produce ornate artefacts. Modern-day exploration commenced in the late 1970s. GSNI regional geochemical and geophysical surveys have greatly assisted target selection and have helped exploration companies to define licence areas. The Dalradian basement rocks of the Sperrin Mountains have been the main focus of exploration but recent work has identified additional prospective areas.

**5.25** The British Geological survey map below (Diagram 3) shows the availability of gold in soils across NI. The dark red colours indicate the highest potential for gold to exist. At a glance, it is evident from the map that there are a number of potential gold 'hot-spots' within NI. These areas include the area south of Keady, Co. Armagh.

**Diagram 3: NI Map showing presence of gold in soils**



## 6.0 Conclusion & Summary

6.1 Mineral extraction is an industry within ACBCBC Area which makes an important contribution to the local economy. Although it is not possible to quantify the precise amount of minerals required over the Plan period up to 2030, there will be a need to ensure that supplies of raw materials are provided in pace with any economic growth that occurs. Thus, the LDP will need to accommodate any potential expansion of existing quarries as well as meeting any demonstrable need for new workings. It is therefore important that the Plan achieves a balance between minerals and associated economic development on the one hand, and safeguarding the most valuable and vulnerable areas of the environment from the detrimental effects of mineral extraction, on the other.

6.2 ACBCBC area contains the following natural heritage designations (see Appendix 7 Map):

**International & European Designations:**

- 1 RAMSAR sites (Lough Neagh & Lough Beg)
- 2 Special Areas of Conservation (SAC: Peatlands Park & Montiaghs Moss)
- 1 Special Protected Areas (SPAs: Lough Neagh)

**National Designations:**

- 21 Areas of Special Scientific interest (ASSI's)
- 1 National Nature Reserve (Lough Neagh)
- 4 Nature Reserves

**Local Designations:**

- 3 Local Nature Reserves
- 77 Sites of Local Conservation Importance (SLNCI)

It is therefore critical that our approach to designating / policy for ACMDs is considered against existing protection through planning policy and nature conservation designations. It should also be consistent across the whole Borough, irrespective of the approach in the 4 extant Area Plans.

6.3 The LDP will also be required to safeguard mineral resources which are of economic or conservation value and seek to ensure that workable mineral resources are not sterilised by other surface development. Geological Survey NI will provide advice in this regard along with discussions with the quarry industry in order to help inform the formulation of mineral policies tailored to the Plan area. Given the distribution of existing quarries largely outside the international nature conservation designations such as Ramsar SPAs, SACs and ASSIs, and the general extent of potential resources as indicated in the Minerals Map, it would seem that there is no need to permit mineral developments in these sensitive areas, except in exceptional circumstances.

**6.4** Areas along the southern shores of Lough Neagh were identified as vulnerable landscapes and sensitive to change in the Landscape Assessment Paper presented to council in February 2016. This area should be further considered in relation to appropriate policy for mineral development.

**6.5** In line with the policy provisions in the SPPS, the Plan's overall approach to minerals development should be to balance the demands of the mining and extractive industry with the need to protect and conserve the environment. In light of this, and taking account of the available information presented in this Position Paper, it is suggested that the Plan Strategy in regard to Minerals Development should broadly embrace the following elements:

- Protect important environmental assets from minerals development including Ramsar sites, Special Protection Areas (SPA), Special Areas of Conservation (SAC), Areas of Special Scientific Interest (ASSI), Nature Reserves and Sites of Local Nature Conservation Interest (SLNCI);
- Identify areas suitable for minerals development within the Plan area, as necessary;
- Minimise the adverse impact of mineral workings on neighbouring communities and sensitive land uses, the historic environment, biodiversity and the water environment;
- Identify and safeguard mineral resources which are of economic or conservation value (in consultation with GSNI);
- Encourage and support recycling initiatives and proposals at existing aggregate sites; and
- Ensure that the restoration of redundant mineral workings enhances and complements the natural and historic environment and contributes to strengthening biodiversity.

# **APPENDICES**

## **APPENDIX 1 – ACBCBC LIST OF QUARRY SITES** (Source: QPANI / GSNI)

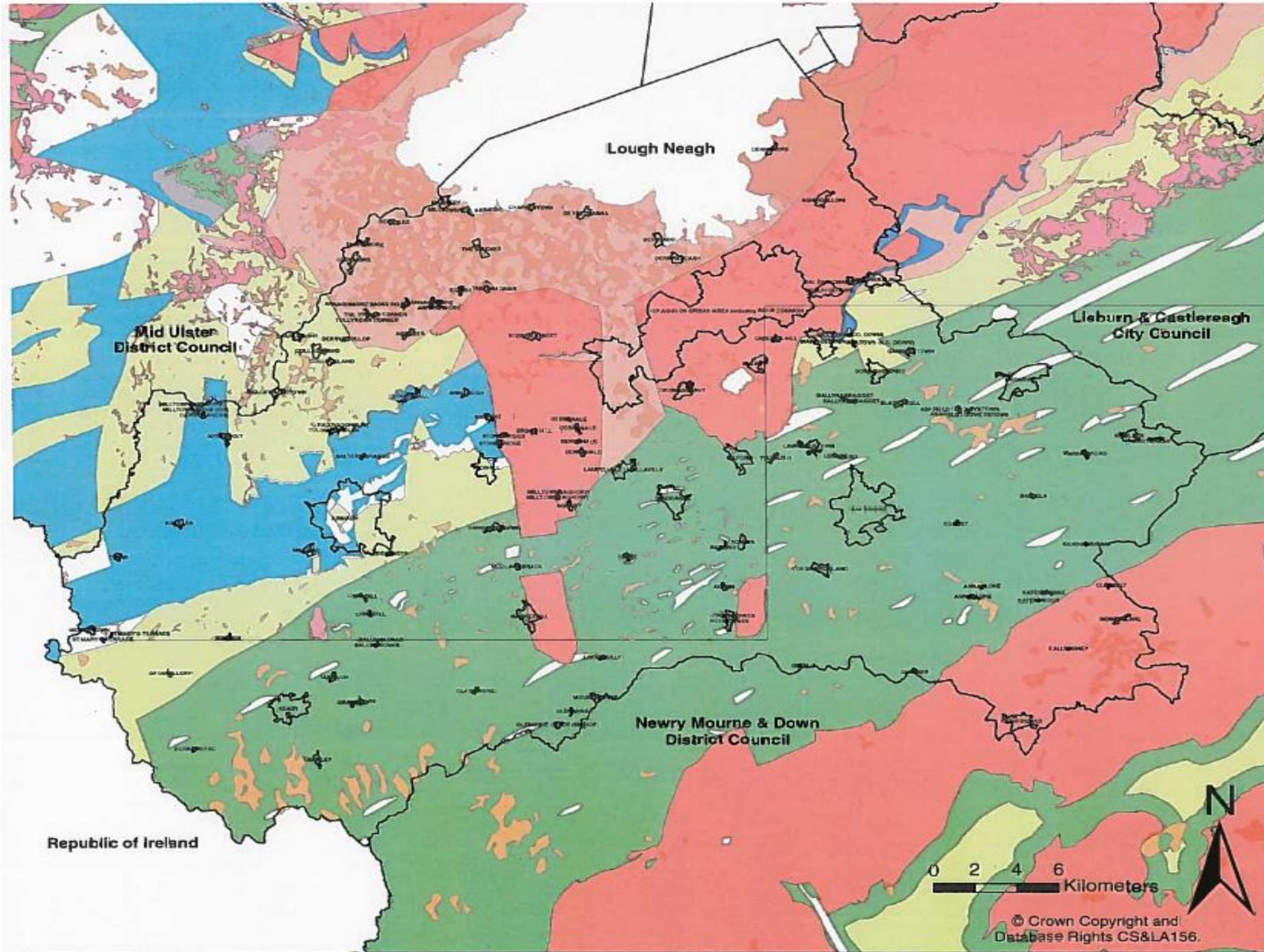
<b>No</b>	<b>HeadOffice</b>	<b>Operator Site</b>	<b>Address1</b>	<b>Town</b>	<b>Postcode</b>
1	A E Mullholland & Sons	Derryclone	56 Derrymore Rd	Craigavon	BT67 0BP
2	Armagh Asphalt Ltd (Cladybeg Quarry)	Irish Asphalt Ltd	55 Friary Road	Cladybeg, Armagh	BT60 2HE
3	Armagh City Quarries	Armagh City Quarries	80 Loughall Road	Armagh	BT61 8EL
4	Bullivant Taranto Ltd. Old Scarva Road, Tandragee. Co Armagh Northern Ireland, BT62 2ED	Bullivant Taranto Ltd.	2 Old Scarva Road	Tandragee	BT62 2
5	Clady Quarries	Clady Quarry	59 Clady Road	Armagh	BT60 2HA
6	Clive Richardson Ltd Portadown, Armagh	Clive Richardson Ltd	54 Derrycoose Road	Portadown	BT62 1LY
7	Collen Bros (Quarries) Ltd, Tandragee Craigavon ,Co Armagh, BT62 2DP	Collen Bros (Quarries) Ltd Tandragee Craigavon Co Armagh BT62 2DP	30 Glebehill road	Craigavon	BT62 2DP
8	Cootes (Concrete Products) Ltd 56 Redrock Road BT60 2BL	Redrock Quarry	56 Redrock Road	Armagh	BT60 2BL
9	Gibson Bros. Ltd 1 Kilmacrew Road Banbridge - BT32 4ES	Gibson Bros Quarry Concrete Division	1 Kilmacrew Road	Banbridge	BT32 4PR
10	I.C.B. Emulsions Ltd.	ICB Emulsions Ltd.	76 Ballyhannon Rd	Portadown	BT63 5SE
11	John Graham (Dromore) Ltd		Lagan Mills	Dromore	BT25 1AS
12	Leer Quarries Ltd(M.Leer)	Leers Quarry	34a Lagan Road,Keady	Armagh	BT60 3ES

13	<b>Mark &amp; Robert King 87 Killycapple Road, Collone, Armagh, Co Armagh BT60 2AL</b>	<b>87 Killycapple Road Collone Armagh Co Armagh</b>	<b>87 Killycapple Road</b>	<b>Armagh</b>	<b>BT60 2AL</b>
14	<b>Noel P Fegan</b>	<b>Fegans</b>	<b>Lagan Road</b>	<b>Keady</b>	<b>BT60 3TF</b>
15	<b>Norman Emerson Group 116-118 Ardmore Road- Derryadd-Lurgan, BT66 6QP</b>	<b>Lisbane Quarry</b>	<b>Lisbane Quarry</b>	<b>Tandragee</b>	<b>BT62 2EA</b>
16	<b>RMC - Quarries (Ulster) Limited</b>	<b>Finlay Banbridge</b>	<b>18 Skelton's Road</b>	<b>Banbridge</b>	<b>BT32 4HL</b>
17	<b>Stanley Emerson &amp; Sons</b>	<b>Ednahavil</b>	<b>39 Banbridge Rd</b>	<b>Lurgan</b>	<b>BT66 7HG</b>
18	<b>Trevor Heatrick Ltd 341 Tandragee Road Portadown,Craigavon, BT62 3RB</b>	<b>Trevor Heatrick</b>	<b>341 Tandragee Road</b>	<b>Portadown</b>	<b>BT62 3RB</b>
19	<b>Tullyraine Quarries Ltd 122 Dromore Road, Banbridge Co Down, BT32 4EG</b>	<b>Tullyraine Quarries Ltd</b>	<b>122 Dromore Road</b>	<b>Banbridge</b>	<b>BT32 4EG</b>
20	<b>W G Mills and Son</b>	<b>Grange Limestone Mills</b>	<b>88 Saltersgrange Rd</b>	<b>Loughgall</b>	<b>BT61 8EU</b>
21	<b>W J &amp; H Crozier Quarry 19 Outlack Road Collone, Armagh Co Armagh, BT60 2AN</b>	<b>Outlack Quarry</b>	<b>19 Outlack Road</b>	<b>Armagh</b>	<b>BT60 2AN</b>
22	<b>B McKernan</b>	<b>150m south of 19 Corran Rd</b>	<b>150m south of 19 Corran Rd</b>	<b>Armagh</b>	<b>BT60 2RB</b>
23	<b>Douglas Acheson Ltd</b>	<b>Tynan Quarry</b>	<b>Cavanapole Road</b>	<b>Tynan</b>	<b>278265 343630</b>
24	<b>Norman Emerson &amp; Sons Ltd (Emersons Wharf)</b>	<b>Emerson's Sand Pit</b>	<b>Ardmore Road</b>	<b>Craigavon</b>	<b>301375 363425</b>
25	<b>Gibson Bros</b>	<b>Cornamucklagh Quarry</b>	<b>56 Moy Road</b>	<b>Portadown</b>	<b>298075 354670</b>

## **APPENDIX 2 – NI MINERAL INFORMATION BY LGD (Source:QPANI)**

<b>NI 11 Councils</b>	<b>Quarry value (£)</b>	<b>Tonnage extracted pro rata to 10 year average of 24MT per annum</b>	<b>Employee Numbers</b>
Antrim & Newtownabbey	458,751.00	182,044	340
<b>Armagh, Banbridge &amp; Craigavon</b>	<b>14,528,241.00</b>	<b>3,166,972</b>	<b>250</b>
Belfast (no return)	0.00	0	86
Causeway Coast & Glens	6,446,303.00	1,797,449	300
Derry & Strabane	1,581,663.00	564,970	212
Down & Ards	10,484,988.00	4,190,897	106
Fermanagh & Omagh	11,860,195.00	3,107,820	737
Lisburn & Castlereagh	8,465,129.00	2,932,138	340
Mid & East Antrim	13,697,997.00	3,246,192	396
Mid Ulster	10,216,154.00	3,209,279	1257
Newry, Mourne & Down	5,938,726.00	1,594,502	252
<b>NI Total</b>	<b>83,678,147</b> <b>(Average: 7,607,104)</b>	<b>23,992,263</b> <b>(Average:2,181,114)</b>	<b>4276 (Average 389)</b>

APPENDIX 3: NI MINERAL RESOURCES MAP IN ACBCBC



**Armagh City Banbridge & Craigavon Borough Council**

Armagh City, Banbridge and Craigavon Local Development Plan 2030

**Appendix 3**

**Map Showing Minerals Resources within ABC Council Area**

**LEGEND**

- Other Resources
- Armagh City, Banbridge and Craigavon Borough Council
- Mid Ulster District Council
- Newry Mourne & Down District Council
- Lisburn & Castlereagh City Council

**COAL AND OIL SHALE RESOURCES**

- Coal
- Oil Shale

**IGNEOUS AND METAMORPHIC RESOURCES**

- Granite
- Other igneous and metamorphic resources

**LIMESTONE RESOURCES**

- High quality limestone (Type 1)
- Medium quality limestone (Type 2)
- Low quality limestone (Type 3)

**SANDSTONE RESOURCES**

- High quality sandstone (Type 1)
- Medium quality sandstone (Type 2)
- Low quality sandstone (Type 3)

**SAND AND GRAVEL RESOURCES**

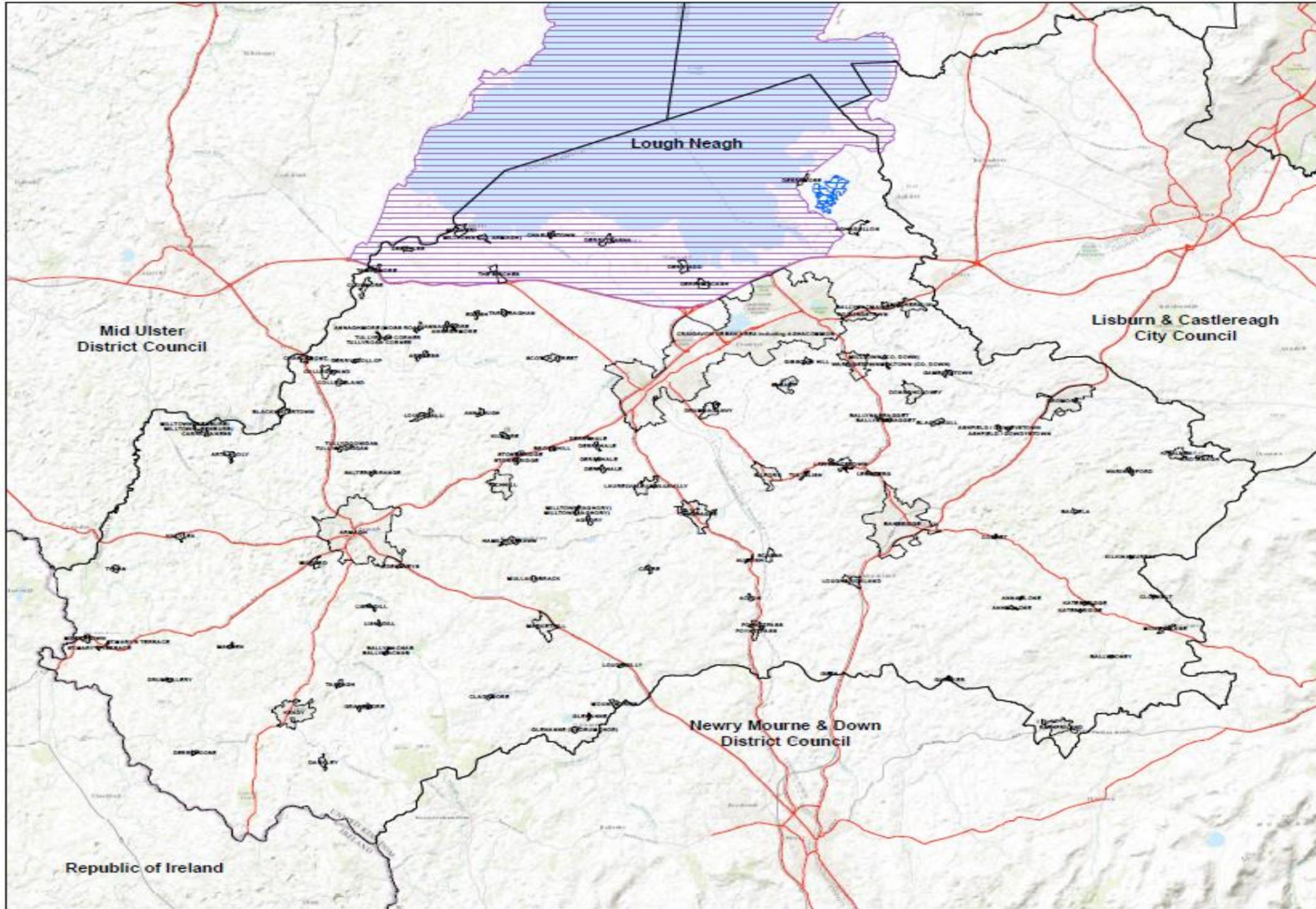
- High quality sand and gravel (Type 1)
- Medium quality sand and gravel (Type 2)
- Low quality sand and gravel (Type 3)

**Other Resources**

- Other resources

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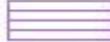
APPENDIX 4: ACBCBC AREA OF MINERAL CONSTRAINT MAP



Armagh City, Banbridge and Craigavon  
Local Development Plan 2030

Appendix 4

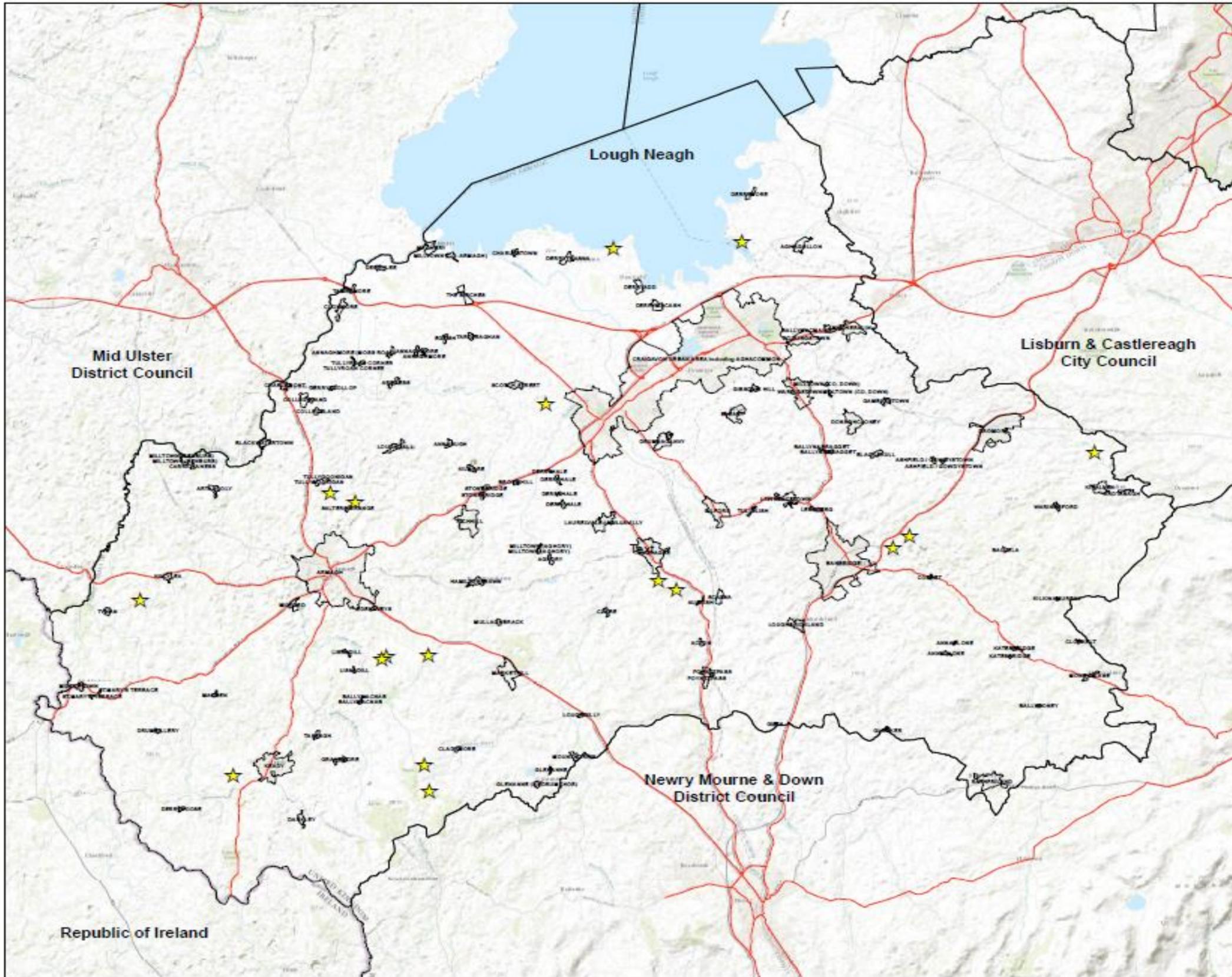
Map Showing Areas of Constraint  
on Minerals Development (ACMD)  
within ABC Council Area

-  Plan Area
-  Settlement Development Limits
-  ACMD (Lough Neagh)
-  ACMD (Montiags Moss)
-  Protected Route



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APPENDIX 5: ACBCBC QUARRY MAP (Source: GSNI)



Armagh City, Banbridge and Craigavon  
Local Development Plan 2030

Appendix 5

Map Showing Quarries  
within ABC Council Area

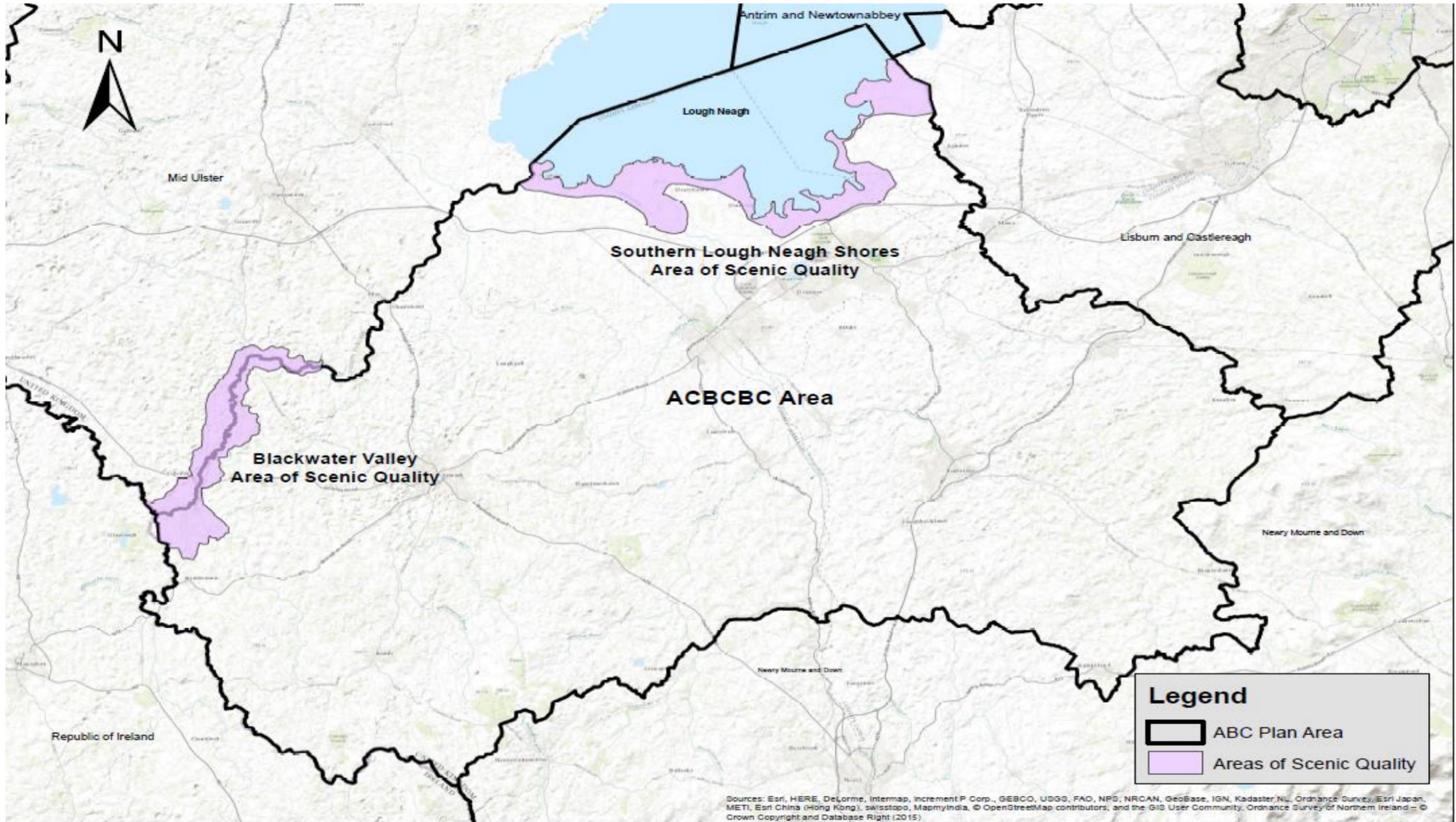
-  Plan Area
-  Settlement Development Limits
-  Quarries
-  Protected Route

Source: Geological Survey (NI)  
August 2016

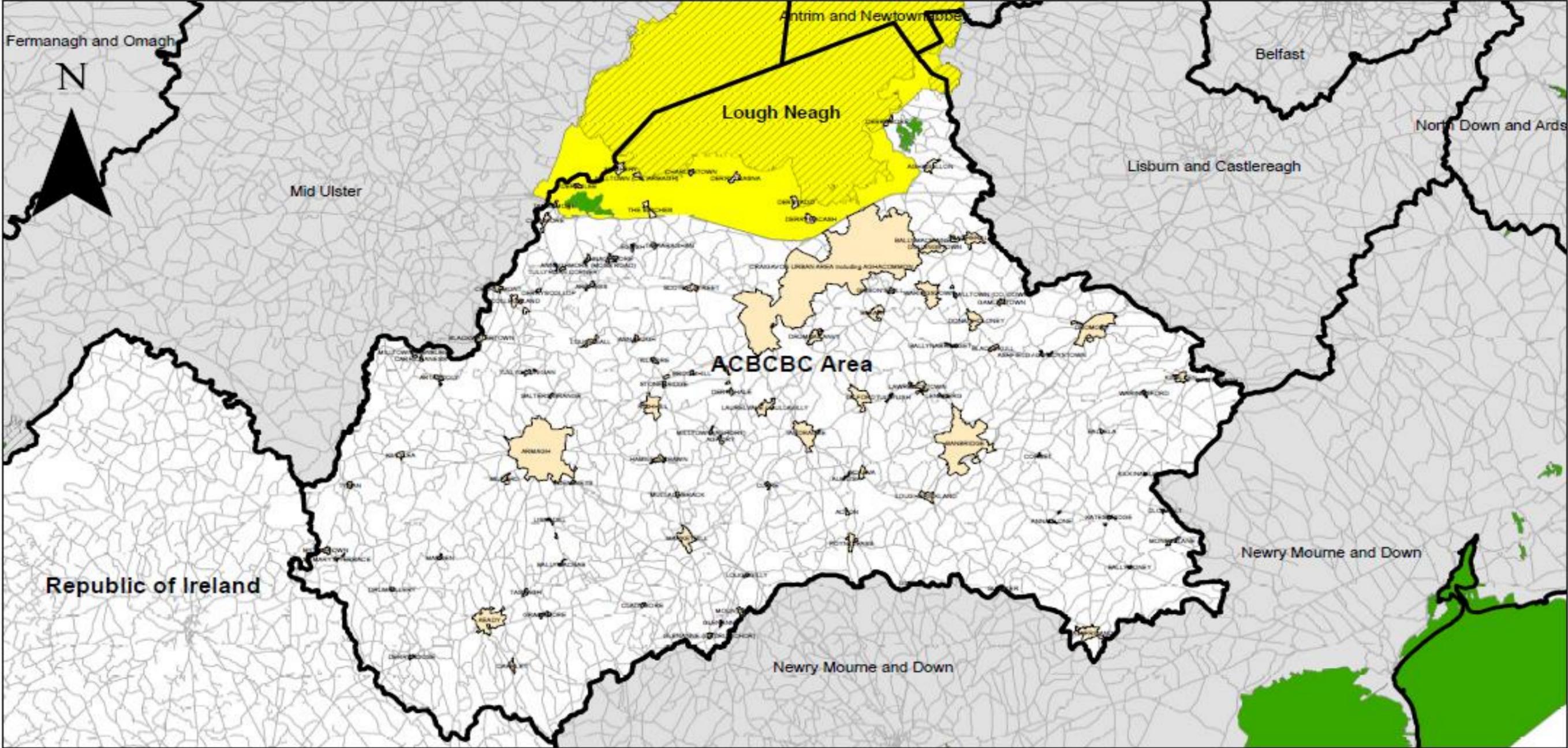


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APPENDIX 6: ACBCBC AREAS OF SCENIC QUALITY MAP (Source: NILCA 2000)



**APPENDIX 7: ACBCBC Sites of International Nature Conservation Importance (SPA, SAC and RAMSAR's)**



**Legend**

- Settlement Development Limit
- Special Protected Area (SPA)
- Special Area of Conservation (SAC)
- RAMSAR
- Plan Area

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