



Offaly County Council
Áras an Chontae
Charville Road
Tullamore
R35 F893
Co. Offaly

30 September 2020

Re: Notice of preparation of the Draft Offaly County Development Plan 2021-2027

Your Ref:

Our Ref: 20/167 (c.f 19/184)

Geological Survey Ireland is the national earth science agency and has datasets including Bedrock Geology, Quaternary Geology, Geological Heritage Sites, Mineral deposits, Groundwater Resources, Geohazards and the Irish Seabed. These comprise maps, reports and extensive databases that include mineral occurrences, bedrock/mineral exploration groundwater/site investigation boreholes, karst features, wells and springs. Please see our [website](#) for data availability and we recommend using these various data sets, when undergoing the EIAR, planning and scoping processes. Geological Survey Ireland should be referenced to as such and should any data or geological maps be used, they should be attributed correctly to Geological Survey Ireland.

Dear Sir/Madam,

With reference to your letter dated 17 July 2020, concerning the notice of preparation of the draft Offaly County Development Plan 2021-2027, Geological Survey Ireland (a division of Department of Communications, Climate Action and Environment) welcome the opportunity to be included in the consultation process of the Stage 2 draft of the CDP plan 2021-2027 .

Geoheritage

The Geological heritage county audit for Offaly was completed in 2016. The resulting report was an action of the County Offaly Heritage Plan 2012-2016. **We welcome the addition of the County Geological Sites (CGSs) within the draft development plan under Chapter 4, Section 4.6, Geology, Eskers and Quarries.**

The following points are suggested by the Geological Heritage Programme of Geological Survey Ireland, as appropriate ways in which to address the need to protect geological heritage in any one of Ireland's local authority areas:

As a minimum, Geological Survey Ireland would like the Local Authority to include a policy objective with wording such as:

"to protect from inappropriate development the scheduled list of geological heritage sites [Appendix X]."

Or

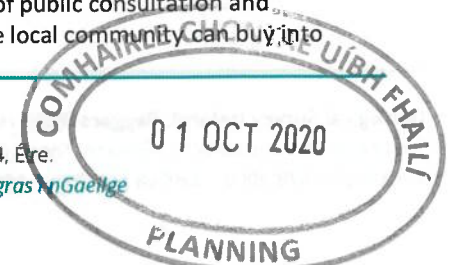
"to protect from inappropriate development the following list of County Geological Sites"

The Geological Heritage Programme views the Local Authorities as critical partners in protecting, through the planning system, those CGS which fall within their county limits. In many cases these are often sites of high amenity or educational value, already zoned or listed in the plan. Listing in the CDP provides protection of the sites against potentially damaging developments that normally require planning permission, such as building, quarrying, landfilling or forestry. It is also important that the democratic process of public consultation and approval by councillors of the CDP means that stakeholders in the sites and all the local community can buy into the process.

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CGSs have been adopted in the National Heritage Plan, and will form a major strand of geological nature conservation to complement the various ecological and cultural conservation measures.

It is important to note however, that management issues for the majority of geological heritage sites may differ from ecological sites, and in some cases development may facilitate enhanced geological understanding of a site by exposing more rock sections - for example, in a quarry extension. Consultation at the earliest stages can identify any issues relevant to an individual site or proposed development.

County Geological Sites are the optimal way of addressing the responsibility of each authority under the Planning and Development Act 2000 and its amendments, to protect sites of geological interest. It would also be necessary to include a policy objective to protect geological NHAs as they become designated and notified to the Local Authority, during the lifetime of the Plan.

As always we are available if you require any further information, please feel free to contact Clare Glanville (Clare.Glanville@gsi.ie).

Culture and Tourism

Over the past number of years geology has become a large part of Irish tourism. Ireland currently has three UNESCO Global Geoparks, with one aspiring Geopark, Joyce Country and Western Lakes Aspiring Geopark. These Geoparks, along with other tourism initiatives such as the Wild Atlantic Way, Irelands Ancient East, and Irelands Hidden Heartlands have bolstered tourism in various parts of Ireland and helped to increase its levels in areas that were previously not as popular with tourists. We would encourage Offaly County Council to continue this trend, and to use the geological audit information making it easily available to the general public. We would encourage geology to be a significant part of any tourism initiative that may be introduced. **We would encourage the development of Geoheritage as a tourism policy as an addition to the Tourism Policies set out in Chapter 6, 'Tourism and Recreational Development'.**

In Chapter 4 Biodiversity and Landscape, Section 4.6.2 'Eskers', we welcome the study recommending the Clonmacnoise esker system, as well as adjacent esker systems in Offaly, as landscapes to host a potential Geopark spanning the Westmeath-Offaly region. Additionally, in Section 4.13.4 'Areas of High Amenity – Eskers' we are pleased to see the inclusion of the Eiscir Riada as a landscape with high conservation value and in promoting this esker landscape's unique geological heritage. Geological Survey Ireland can advise on the potential of developing these areas as a Geopark/ UNESCO Geopark.

Dimension Stone/Stone Built Ireland

Geological Survey Ireland recently signed a research collaboration agreement between Geological Survey Ireland, TCD & OPW, to run for a 2 year period with the aim of documenting building and decorative stone in Ireland to inform government agencies, building owners and conservationists of the sources for suitable replacement stone in restoration work and to develop a greater awareness among the general public. **In addition to promoting citizen science and awareness of local materials, the inventory will aid the public in complying with part 4 of the Planning and Development Act 2000, which requires owners to conserve protected structures. It will also assist local authorities in issuing Section 57 Declarations, which outline 'the type of works which it considers would or would not materially affect the character of the structure or any element of the structure'.**

This project will build on work already completed funded by the Irish Research Council (March 2019 - September 2020) that carried on primary research on the topic and developed a simple database and web-based platform as well as hosting various heritage displays at venues. **This project could also be considered in conjunction with the themes and policies in Chapter 10 'Built Heritage'.**





Geological Mapping

Geological Survey Ireland's geological mapping programme creates maps that depict the rocks (Bedrock Mapping) and subsoils (Quaternary & Physiographic Mapping) of the onshore area of Ireland. We collect new data by field surveying and borehole drilling, and combine them with existing mapping to produce map products at various scales and levels of complexity. We maintain online data sets of bedrock and subsoils geological mapping that is reliable, accessible and meets the requirements of all users. These data sets include depth to bedrock data and subsoil classifications. **We would encourage you to use this data in any planned SEA reports and for informing your County Development Plan (2021-2027).**

Groundwater

We are pleased to see mention of Geological Survey Ireland's Groundwater Protection Scheme and Source Protection Zones and commend the use of our Groundwater Vulnerability map for Co. Offaly in Chapter 11 Water Services and Environment, Section 11.5.1 Water Quality.

Groundwater is important as a source of drinking water, and it supports river flows, lake levels and ecosystems. It contains natural substances dissolved from the soils and rocks that it flows through, and can also be contaminated by human actions on the land surface. As a clean, but vulnerable, resource, groundwater needs to be understood, managed and protected.

Through our [Groundwater Programme](#), Geological Survey Ireland provides advice and maps to members of the public, consultancies and public bodies about groundwater quality, quantity and distribution. Geological Survey Ireland monitors groundwater nationwide by characterising aquifers, investigating karst landscapes and landforms and by helping to protect public and group scheme water supplies. **We recommend the use of our National Aquifer, Vulnerability and Recharge maps within the CDP. Further information is available on our [Map viewer](#).**

With regard to Flood Risk Management, there is a need to identify areas for integrated mitigation and management and we note reference within the draft plan to the OPW datasets on flooding in Volume 1, Chapter 3, Section 3.11.1. Our GWflood project is a groundwater flood monitoring and mapping programme aimed at addressing the knowledge gaps surrounding groundwater flooding in Ireland. The project provides the data and analysis tools required by local and national authorities to make scientifically-informed decisions regarding groundwater flooding. **This is primarily focused on karst areas such as those located in Co.Offaly, which will provide vital information to benefit the CDP. We recommend using our GWflood tools found under our programme activities (in conjunction with OPW data), to this end.**

With regards to Climate Change, there is a need to improve the monitoring capacity of groundwater levels in Ireland so that the potential impacts of climate change can be monitored and assessed. In this context the Geological Survey Ireland has established the GWClimate project in January 2020. GWClimate will 1) establish a long-term strategic groundwater level monitoring network and 2) develop modelling and analytical approaches for evaluating the impacts of Climate Change to Irish groundwater systems. **Further information can be found on the Groundwater flooding [page](#) of the Groundwater Programme.**

Geohazards

Geohazards can cause widespread damage to landscapes, wildlife, human property and human life. In Ireland, landslides are the most prevalent of these hazards. **Landslides are common in areas of peat, areas which are found within Co. Offaly.** Geological Survey Ireland has information available on past landslides for viewing as a layer on our [Map Viewer](#). Geological Survey Ireland also engages in national projects such as Landslide Susceptibility Mapping and GWflood Groundwater Flooding. **We recommend that geohazards and particularly flooding be taken into consideration, especially when developing areas where these risks are prevalent, and we encourage the use of our data when doing so.**





Geothermal Energy

Geothermal energy harnesses the heat beneath the surface of the Earth for heating applications and electricity generation, and has proven to be secure, environmentally sustainable and cost effective over long time periods. Geothermal applications can range in depth from a few metres below the surface to several kilometres.

Ireland has widespread shallow geothermal resources for small and medium-scale heating applications, which can be explored online through Geological Survey Ireland's Geothermal Suitability maps for both domestic and commercial use. We recommend use of our [Geothermal Suitability maps](#) to determine the most suitable type of ground source heat collector for use with heat pump technologies. **The Geothermal Suitability maps could also be considered in Section 3.2.2 'Geothermal', as part of the Renewable Energy Potential for the CDP.**

Ireland also has recognised potential for 'deep' (>400m) geothermal resources. Geological Survey Ireland currently supports and funds research into this national energy resource. Along with our partners in research and industry we have been investigating the potential for geothermal energy in Ireland. Although Ireland does not possess high temperature (high enthalpy) reserves such as those in Iceland or the Azores, we do have the potential to use our resources for low enthalpy application such as district heating and industrial processes that require heating/cooling. We are currently completing a roadmap for geothermal energy use in Ireland which we expect to publish in 2020. **For further information please see our [geoenergy pages](#) on our website or contact the Groundwater Programme of the Geological Survey Ireland directly.**

Natural Resources (Minerals/Aggregates)

These are important resources for the future, particularly in relation to the projected public developments, such as sustainable infrastructure development, roads, schools etc., and housing requirements for the County

Geological Survey Ireland is of the view that the sustainable development of our natural resources should be an integral part of all development plans from a national to regional to local level to ensure that the materials required for our society are available when required. Geological Survey Ireland provides data, maps, interpretations and advice on matters related to minerals, their use and their development in our [Minerals section](#) of the website.

Aggregates are an essential natural resource for the construction industry and with the Government of Ireland "Building Ireland 2040" plan, understanding of aggregate source and supply will be important. The Active Quarries, Mineral Localities and the Aggregate Potential maps are available on our [Map Viewer](#). We would welcome the consideration of aggregate potential sterilisation included as part of the scoping document. **This may be of benefit to the issues raised in Chapter 5 Economic Development, Section 5.6.8 Aggregate and Minerals.**

We also encourage discussion on end-of-life plans for quarries and would be happy to recommend ways to promote the geology to the public or develop tourism or educational resources if appropriate. Geological Survey Ireland would like to offer help with interpretative signs where interesting geological features have been exposed. **In Chapter 4, Section 4.6.2 'Eskers', we would be pleased to see the Offaly Development Plan highlighting the importance of including policies to restrict exploitation on eskers and developing a plan to focus on pit restoration.**

The Geoheritage Programme tries to promote a partnership between geological heritage and active quarrying, with such measures as those outlined in the 'Geological Heritage Guidelines for the Extractive Industry', which can be downloaded [here](#). This document, written in association with Irish Concrete Federation, acts as a comprehensive guide in the sustainable extraction of natural resources while preserving the geological heritage of Ireland. **This may be of benefit to the policies and objectives in Chapter 13 Development and Management Standards, Section 13.9.14 Extractive Industries.**





The following guidelines may also be of assistance:

- Department of Environment, Heritage and Local Government, 2004. Quarries and Ancillary Activities, Guidelines for Planning Authorities.
- Environmental Protection Agency, 2006. Environmental Management in the Extractive Industry: NonScheduled Minerals.
- Geological Survey of Ireland - Irish Concrete Federation, 2008. Geological Heritage Guidelines for the Extractive Industry.
- Institute of Geologists of Ireland, 2013. Guidelines for the Preparation of the Soils, Geology and Hydrogeology Chapters of Geology in Environmental Impact Statements.

I hope that these comments are of assistance, and if we can be of any further help, please do not hesitate to contact me (Trish.Smullen@gsi.ie), or my colleague Clare Glanville (Clare.Glanville@gsi.ie).

Yours sincerely,

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