

Noise advocacy in Ireland (ICA2019/1559)

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ABSTRACT

In conjunction with work on the Round 3 noise maps and role out of the noise action plans, the Irish Environmental Protection Agency (EPA) is focused on the provision of public information and advocacy around transport noise. The noise maps are being used by the various Local Authorities to communicate to the public about the modelled noise levels in their area and how they may be addressed in their noise action plan. It has given the public improved access and a better understanding of what the noise maps are all about.

The Irish EPA are also developing a noise briefing paper to give an update on environmental noise, that will add to the noise mapping information on the EPA website. In addition, the EPA is producing an environmental noise 'Factsheet/Infographic' to help provide better public information on noise and are also planning for a noise feature article in the press, and some other noise related features during 2019-2020. The intention is to increase public awareness around environmental noise with a view to putting a greater focus on the various Local Authority noise maps and action plans, and their implementation over the next five years.

Keywords: health, noise maps, geo-tool.

1 INTRODUCTION

Environmental noise is 'unwanted sound' arising from all areas of human activity such as noise from transport, industrial and recreational activities. According to the World Health Organisation 2011 (1); 'Environmental noise leads to a disease burden that is second in magnitude only to that from air pollution, among environmental factors in Europe'. According to the 2014 study for Directorate-General (DG) Environment on the Health implication of road, railway and aircraft noise in the European Union (EU) (2) found that exposure to noise in Europe contributes to:

- about 910,000 additional prevalent cases of hypertension,
- 43,000 hospital admissions per year, and
- At least 10,000 premature deaths per year related to heart disease & stroke.

Since 2016, environmental noise has become a more significant issue in Ireland as the public have become more engaged around transport noise sources and their potential health impacts. An increasing interest in noise is also demonstrated by the European Commission Noise Conference held in Brussels in 2017, where over 450 delegates gathered to hear the WHO outline the latest findings on the health implications of noise, while the European Commission highlighted some activities aimed at reduction of noise pollution in member states.

2 NOISE & HEALTH

In 2018, the World Health Organisation (WHO) published Environmental Noise Guidelines for the European Region (3) which sets out how noise pollution in our towns and cities is increasing. It demonstrates how excessive noise particularly from transport sources is a health risk, by contributing to effects on sleep, as well cardiovascular diseases and metabolic effects. The main purpose of these guidelines is to provide recommendations for protecting human health from exposure to environmental noise originating from various sources:

- transportation (road traffic, railway and aircraft) noise,
- wind turbine noise, and leisure activities.

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The implementation of the WHO Guidelines is currently being negotiated at European Union (EU) level, and the development of any future National Noise Policy in Ireland will be influenced by the outcome of this transposition process. In Ireland, the publication of the WHO noise guidelines has led to a focus on environmental noise, particularly in relation to the main road network around Dublin city including the M50 (a major orbital motorway), and in relation to aircraft movements in and out of Dublin airport, which had over 30 million passengers in 2018.

3 NOISE RESEARCH IN IRELAND

One of the Environmental Protection Agency (EPA) goals is to promote a greater awareness of the impact of environmental quality on health. In line with this goal, the EPA has commissioned a 3-year research project ‘Noise and Health Evidence from Ireland’ led by University College Dublin (UCD) in co-operation with the Economic and Social Research Institute (ESRI), that will provide a detailed review of the relationship between environmental noise and health/wellbeing. This research will provide a national estimate of the burden of disease from environmental noise in disability-adjusted-life-years (DALYs). The plan is to combine noise modelling and health data to examine contributory relationships between noise exposure, and health and wellbeing outcomes. The final report should be published in 2021 (4).

A further two-year noise research project also led by UCD and which focuses on ‘Transitioning to Strategic Noise Mapping under CNOSSOS-EU’ (new common methods of assessment) for Round 4 noise mapping has also commenced (5). The main aim of this study is to provide a transitional needs assessment for adapting to CNOSSOS-EU: 2015 in the Irish context for road, rail, air, and industry, including the administration of a standardised approach for population exposure estimation.

4 ENVIRONMENTAL NOISE LEGISLATION

The EU’s Environmental Noise Directive (END) 2002/49/EC deals with environmental noise from major transport infrastructure including roads, railways and airports. In Ireland the END was implemented through the Environmental Noise Regulations 2006. In 2018, the Department of Communications Climate Action & Environment (DCCA) completed a revision of the 2006 regulations. The ‘European Communities (Environmental Noise) Regulations 2018 (6) both revise and revoke the Environmental Noise Regulations 2006 and transpose the common noise assessment methods (CNOSSOS-EU) Directive 2015/996 (7).

The Environmental Noise Directive (END) 2002 sets out a two-stage process for addressing environmental noise by requiring Member States to:

- Establish the extent of the noise problem by preparing ‘strategic noise maps’ for major roads, railways, airports, agglomerations and industry; and
- The competent authorities are then required to develop action plans to reduce the level of noise where necessary and to maintain environmental noise quality where it is good.

5 STRATEGIC NOISE MAPPING

A strategic noise map sets out the noise exposure in a given area resulting from noise sources. These sources include major roads (>3 million vehicle movements/annum), major rail (>30,000 rail passages), major airports (>50,000 air movements/annum) and major agglomerations (>100,000 inhabitants), which in Ireland includes the cities of Dublin and Cork. These maps are prepared using computer modelling techniques. The modelling software uses source data such as traffic flow, type of road and rail, types of vehicles and speeds etc.

All noise maps are presented in terms of two noise indicators: L_{den} and L_{night} .

- L_{den} is the day-evening-night noise indicator and it represents the noise indicator for overall annoyance. It is ‘weighted’ to account for extra annoyance in the evening and night periods. The Environmental Noise Directive (END) defines an L_{den} threshold of 55 dB for reporting on the numbers of people exposed.
- L_{night} is the night time noise indicator and is used in the assessment of sleep disturbance. An L_{night} threshold of 50 dB is defined for reporting on the numbers of people exposed.

These indicators are based on year-long averages of the day (07:00-19:00), evening (19:00-23:00) and night (23:00-07:00) time periods.

6 ADVOCACY FOR THE ROUND 3 NOISE MAPS

One of the Environmental Protection Agency (EPA) strategic goals is to be an ‘*Effective Advocate and Partner*’. In the EPA, advocacy is the evidence-based promotion of an environmental policy or behaviour that will influence a decision or achieve a specific outcome. In order to encourage people to change their behaviour, or to raise awareness of the value of a clean protected environment, the EPA often works with, and through, others to deliver on these goals. EPA staff are encouraged to get involved in advocacy or partnering initiatives. The EPA strategy also has an objective covering the provision of timely and tailored information, and this approach has been followed for the Round 3 noise maps.

6.1 Noise maps

The Round 3 Noise Mapping information on the EPA website (8) sets out the various roles and responsibilities for noise mapping in Ireland. Responsibility for the preparation of the relevant strategic noise maps lies with the designated Noise Mapping Bodies (NMBs). The NMBs include Transport Infrastructure Ireland (TII), who are responsible for mapping national roads & the Luas - which is a light rail system in Dublin city.

Local authorities (LAs) are responsible for mapping the non-national major roads, while Irish Rail map the heavy rail and the Dublin Airport Authority (daa) map the major airport (9). The four Dublin local authorities (Dublin City Council, Fingal, Dún Laoghaire-Rathdown, & South Dublin County Councils) are responsible for developing a noise map for the Dublin agglomeration. Cork City and Cork County Council have a similar role for the Cork agglomeration.

The EPA is the national authority for overseeing the implementation of these noise regulations. The EPA role includes supervisory, advisory and co-ordination functions in relation to both noise mapping and action planning.

The public can view the Round 3 Strategic Noise Maps on EPA Maps (10) under "*Environment & Wellbeing - Noise*". There are clear instructions on ‘How to access data’ on page 2 of the EPA website. In October 2018, when the noise maps were published, the EPA tweeted on EPA Ireland <https://twitter.com/EPAIreland/> that the noise maps were available to view on the EPA Map Geo Tool, and that they could be used to assess noise exposure in a given area. While this may seem like a small step, it was a new way of making the information on noise mapping better known. It was also used to increase public awareness around the role out and implementation of the noise action plans, as outlined below.

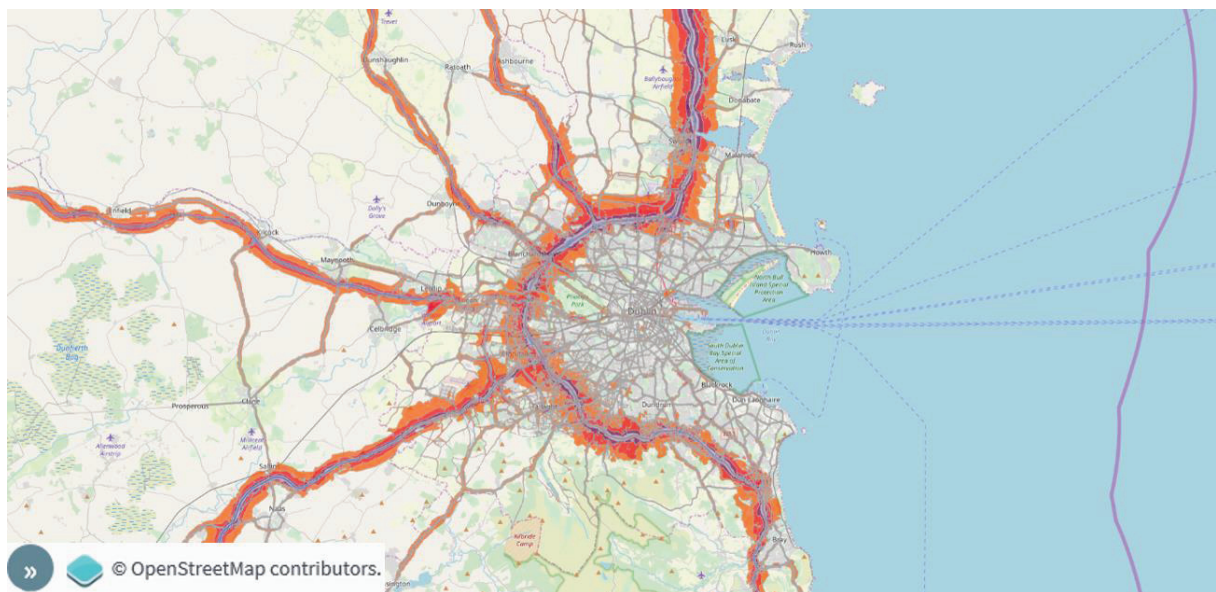


Figure 1; Dublin agglomeration roads map.

6.2 Noise action plans

Following the preparation of the noise maps, the relevant Action Planning Authorities (APAs) i.e., the 31 local authorities, were then required to prepare noise action plans where the L_{den} (55 dB) and L_{night} (50 dB) thresholds had been exceeded. These action plans are designed to manage noise issues and effects, and it involves the prevention and reduction of environmental noise where necessary. The EPA has produced guidance for local authorities (11) on the content of such plans.

Public consultation is a key part of the noise action planning process. Local Authorities (LAs) are required to ensure that the public are given sufficient opportunities to participate in the preparation of the draft plans. Any submissions received as part of this public consultation process must be considered before the LAs can finalise their plans. In order to assist the public to access their local noise action plan, the EPA will provide a direct link to the 32 action plans on the mapping section of the EPA website, as soon as the remaining action plans have been finalised.

6.3 Using EPA Noise Maps Geo Tool during public consultation

Fingal County Council (which is one of the 4 Dublin local authorities) received around 580 submissions on their draft Dublin airport noise action plan (NAP), and around 15 submissions on the Fingal County noise action plan. In order to engage more effectively with the public, Fingal County Council arranged two public consultation meetings locally in Swords and in Blanchardstown to discuss this draft NAPs. At these public consultation meetings, the Fingal CC representatives used the noise mapping information on the EPA website to explain to the local community representatives what the noise maps were indicating about Fingal County and Dublin airport. The following extracts includes a brief explanation as to how they engaged with the public using the EPA Map geo tool resources;

Choose a map and zoom in - <https://gis.epa.ie/EPAMaps/>

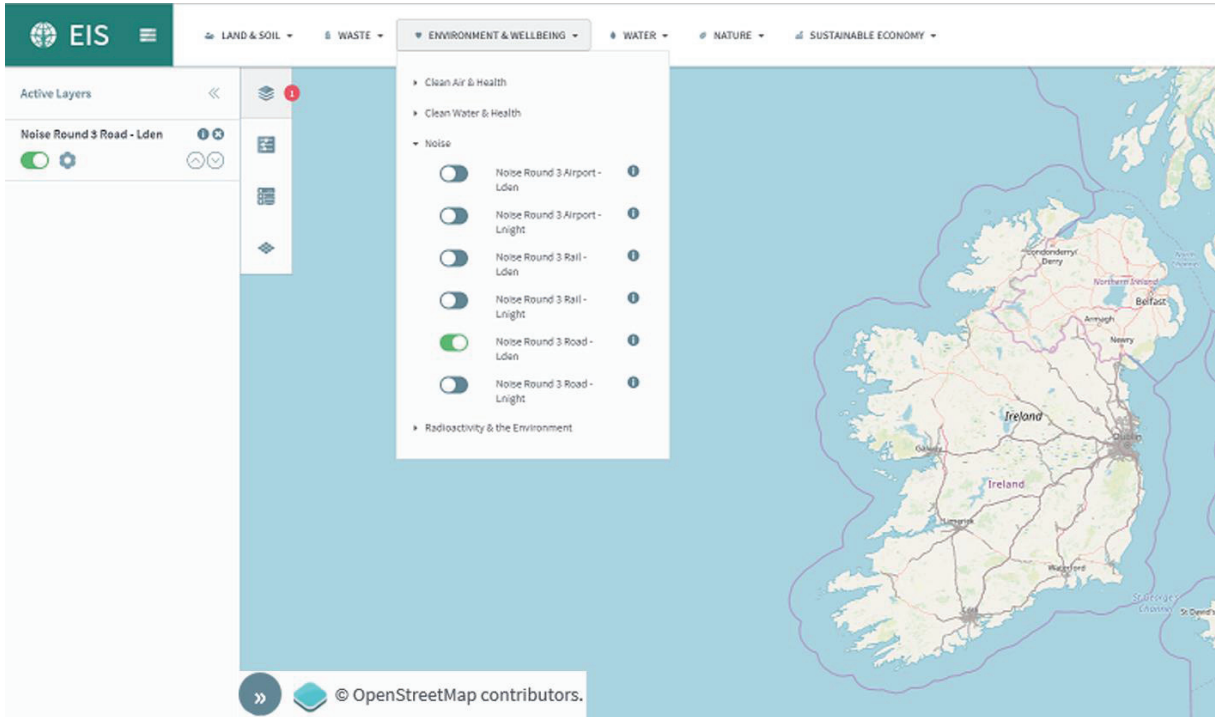


Figure 2: EPA MAPS – Noise Round 3 Road - L_{den} .

For those Fingal residents who live near the airport, they can then use the drop-down menu to check out the noise contours around Dublin airport;

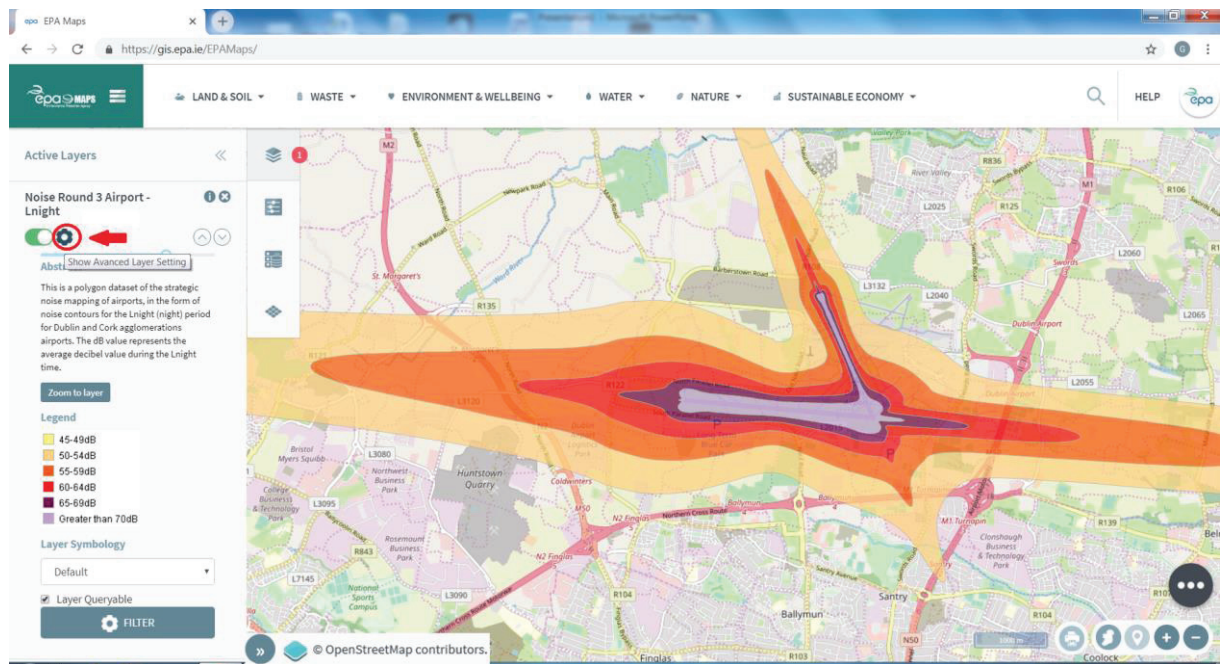


Figure 3: Noise Round 3 airport - L_{night} (includes metadata)

The Fingal representatives were also able to show the public how they could use their local map and zoom in to street level to see how they are impacted by road traffic. The metadata on the left-hand side explains what the graph represents, and there is also a drop-down menu which can be selected to view the full metadata information, and it also includes some additional links. For the Fingal representatives, there was some very positive feedback from the public in relation to the benefits of this mapping tool. The local authority (LA) feedback on the EPA mapping tool was also largely positive, with Fingal County Council describing the noise mapping facility on the EPA website as a ‘very helpful tool’. This online facility allowed the LAs to demonstrate the full range of the noise maps to the public using the EPA Map Geo Tool and the associated metadata.

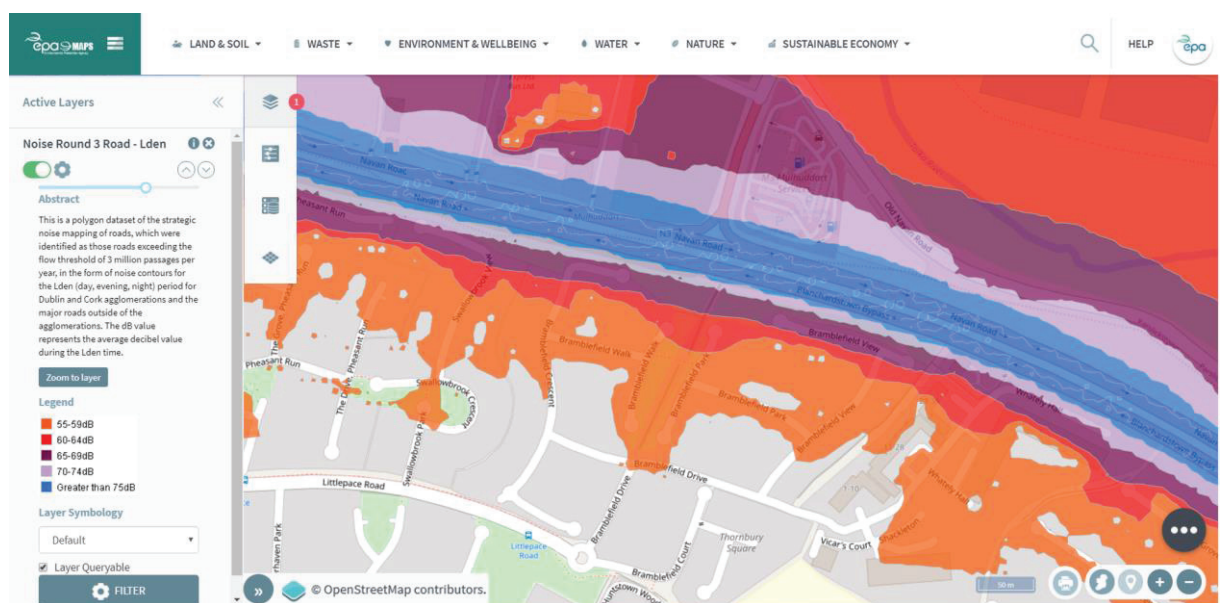


Figure 4: Noise Round 3 Road - L_{den}

7 OTHER NOISE ADVOCACY ROLES

7.1 EPA guidance notes

Under the END, the EPA role includes supervisory, advisory and co-ordination functions in relation to both noise mapping and action planning. As part of this advisory role, the EPA has published a number of noise guidance documents. In 2018, the EPA published an updated action planning guidance note (12). This document was issued to provide an update of the original EPA Noise Action planning Guidance (2009).

The approach adopted for the Round 3 noise action plans was very much based around the original guidance, but it also included an update on the strategic policy context and the National Planning Framework 2040 which includes policy ‘Objective 65’ to;

promote the pro-active management of noise where it is likely to have significant adverse impacts on health and quality of life and support the aims of the Environmental Noise Regulations through national planning guidance and Noise Action Plans.

As part of our advocacy role, the EPA had made several submissions recommending that noise policy was included in the ‘National Planning Framework – Project Ireland 2040 (13)’, and the inclusion of Objective 65 is seen as a very important development.

The revised 2018 guidance note also included updated information on environmental noise and health, an update on the two EPA funded noise research projects and guidance to APAs with regards to undertaking Strategic Environmental Assessment (SEA) and Appropriate Assessment (AA) screening with regard to the Noise Action Plans.

Meanwhile any observations/comments on environmental noise are now being incorporated into SEA submissions on relevant plans and programmes. For some of the draft Noise Action Plans (NAP), the LAs have received submissions around land use planning, and the designation of Quiet areas, which are highlighted in the EPA guidance notes. One such submission on the Cork City action plan referred to recent research evidence of the adverse impacts on health that exposure to excessive noise can have and references some relevant WHO publications on traffic noise effects, as well as referencing some of the EPA guidance notes. It is encouraging to see that these types of issues which are highlighted on the EPA website, are being raised by groups in their noise action plan submissions.

7.2 Live Green – EPA website

The Live Green web site (14) contains some useful information on noise nuisance and noise legislation. It talks about areas such as noise nuisance, and noise legislation. It defines the legal role of the EPA and Local Authorities in relation to noise. There is also some useful information on domestic noise, as well as those experiencing nuisance from alarms or barking dogs. It also includes information on transport related noise and links to noise mapping. The site content will be moving to Department of Environment web pages during 2019.

7.3 Environmental conferences

The EPA has been pro-active in raising issues around noise maps and action plans as well as noise and health issues at a number of recent conferences. This includes the ‘2018 National Air Event’ held in Kilkenny, where this author presented on ‘*Noise mapping and new WHO noise guidelines*’. This was a useful opportunity to liaise with colleagues on the air side and to increase awareness around these noise related issues.

At the 2019 Environmental Services Training Group (ESTG) Annual Conference on ‘Climate Action: Leading at Local Level’, this author presented on ‘*Noise Action Plans and Linkages to Air Quality and Climate Change Opportunities*’. The main focus of the presentation was to raise awareness of the Round 3 noise maps and action plans, and to highlight some of the issues around noise and health. The presentation also included some examples of European cross-sectoral projects with linkages to climate initiatives, air pollution and noise mitigation. The audience feedback was very positive, and this is something that we will look to build on during 2019-2020.

7.4 Eco eye noise programme

Eco Eye is a popular environmental programme that is aired on one of our National TV channels – RTE1. Each programme in the series has about 500,000 viewers, which, out of a population of 4.8 million, is significant. In 2018, there was an Eco Eye episode entitled ‘*Silence is Golden (15)*’ and this programme had a strong focus on the effects of transport related noise sources from roads, and airport operations. It was clear from the people who were interviewed in their homes that transport noise can be a very significant source of annoyance and stress for some people, and particularly for those who may be living very close to a busy motorway or national route. The current lack of noise planning guidance to assist the public was highlighted as a major issue in this programme. The EPA were involved in highlighting some of the noise issues that were addressed in this Eco eye programme, which ties in with our strategy and advocacy role.

8 UPCOMING ADVOCACY PROJECTS

8.1 Current work on Noise briefing paper, factsheets and infographic

The EPA receives regular queries and complaints about environmental noise. Some of the issues raised are relevant to the EPA’s role, but many of the issues raised go beyond our statutory noise role. However, it can be difficult for the public to know who they should contact in relation to their noise queries or complaints. In order to provide some background information on the more common issues, the EPA is working on a noise briefing paper. This draft paper has a Questions and Answers format to provide some relevant information. It also includes some information on noise legislation, noise complaints, EPA and LA functions, noise mapping and action plans, regulation of airport noise, wind energy development guidelines, as well as on noise and health issues.

It is hoped that once this paper is finalised it will be a useful reference document for the public and it will be made available on the EPA website. The EPA is also looking to publish a ‘Noise Factsheet’ and a ‘Noise Infographic’. They will be used as a way of presenting a short summary of relevant information to the public on noise and health, similar to the ones that have already being developed for air, water, waste, and drinking water etc. (16).

8.2 State of the Environment Report (SOER) 2020

Every four years the EPA produces a State of the Environment report (17). The SOER 2020 report will for the first time include a stand-alone chapter on environmental noise. This chapter will be used to identify the main environmental noise issues with a focus on transport related noise. It will set out the current issues and identify what is being done to address some of the issues highlighted. There will also be relevant information on transport related noise within the Transport chapter, and within the Health & Wellbeing chapter. The SOER report is due to be published in 2020.

9 CONCLUSIONS

In more recent years, the EPA and some of the relatively small number of noise advocates in Ireland have been reasonably successful in raising the profile of environmental noise. The EPA noise maps geo-tool has been used by Local Authorities to communicate to the public about the modelled noise levels in their area and to explain how these levels may be addressed in the local noise action plan. This geo tool has also assisted the LAs in the public consultation process for their draft noise action plans.

The EPA has been involved in producing noise mapping and action planning guidance notes to aid noise mapping bodies, and to provide relevant information to the public. We have also promoted the significant work undertaken on the Round 3 noise maps and action plans at various environmental conference in Ireland. Meanwhile, the outputs from the noise and health research project will help to increase public awareness around noise and health in Ireland, while the upcoming SOER 2020 report will include a stand-alone chapter on noise.

While these are largely positive developments, this noise advocacy role has contributed to a significant expansion of the environmental noise workload within the EPA, and for some LAs as well. This brings its own challenges and we are considering how we can work with others on noise advocacy and even expand the role in future years, as we can see there are real benefits in relation to increased

public buy in and engagement on noise issues.

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