

# Noise Action Plans and linkages to air quality and climate change opportunities

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24 April 2019

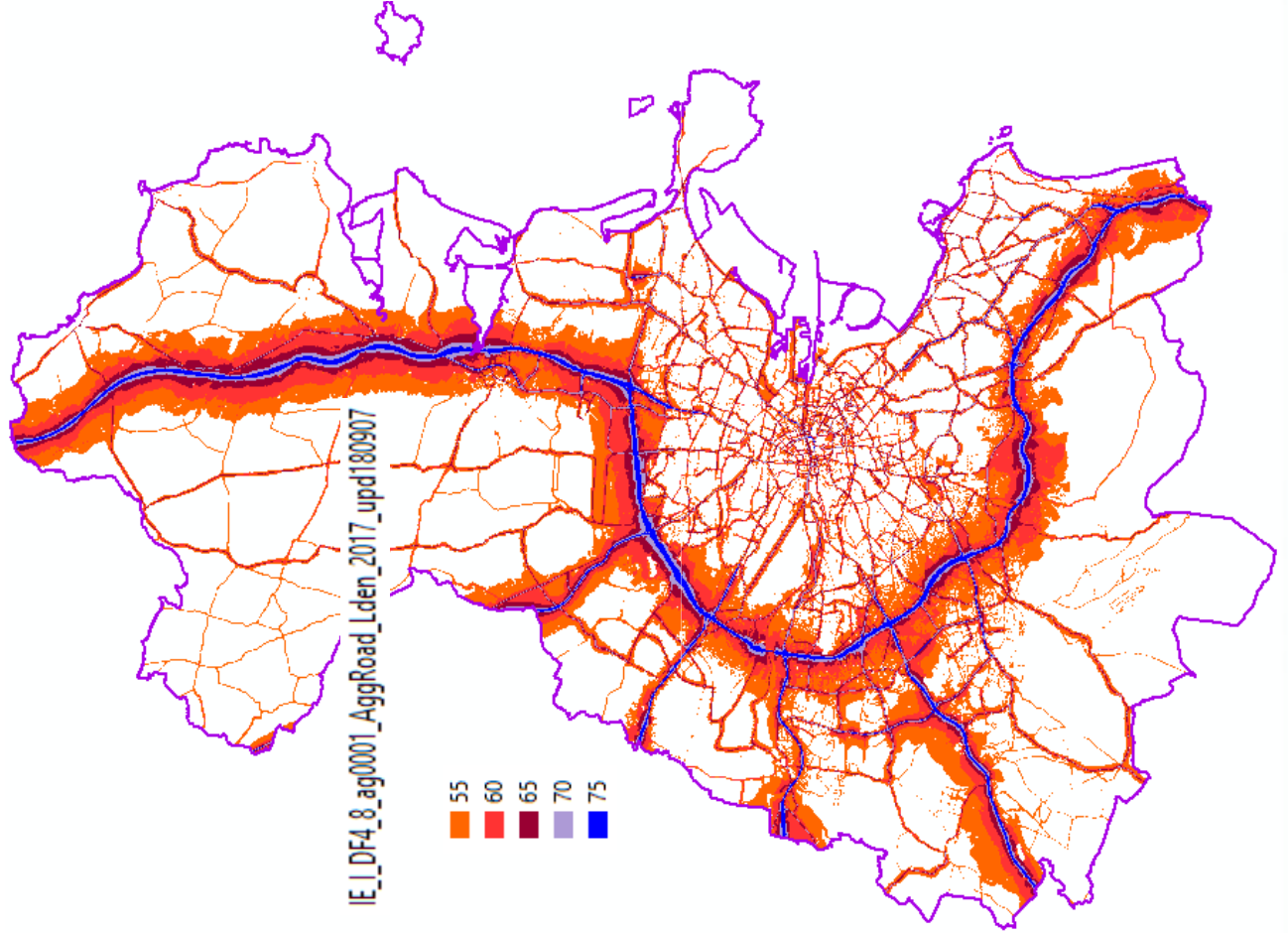
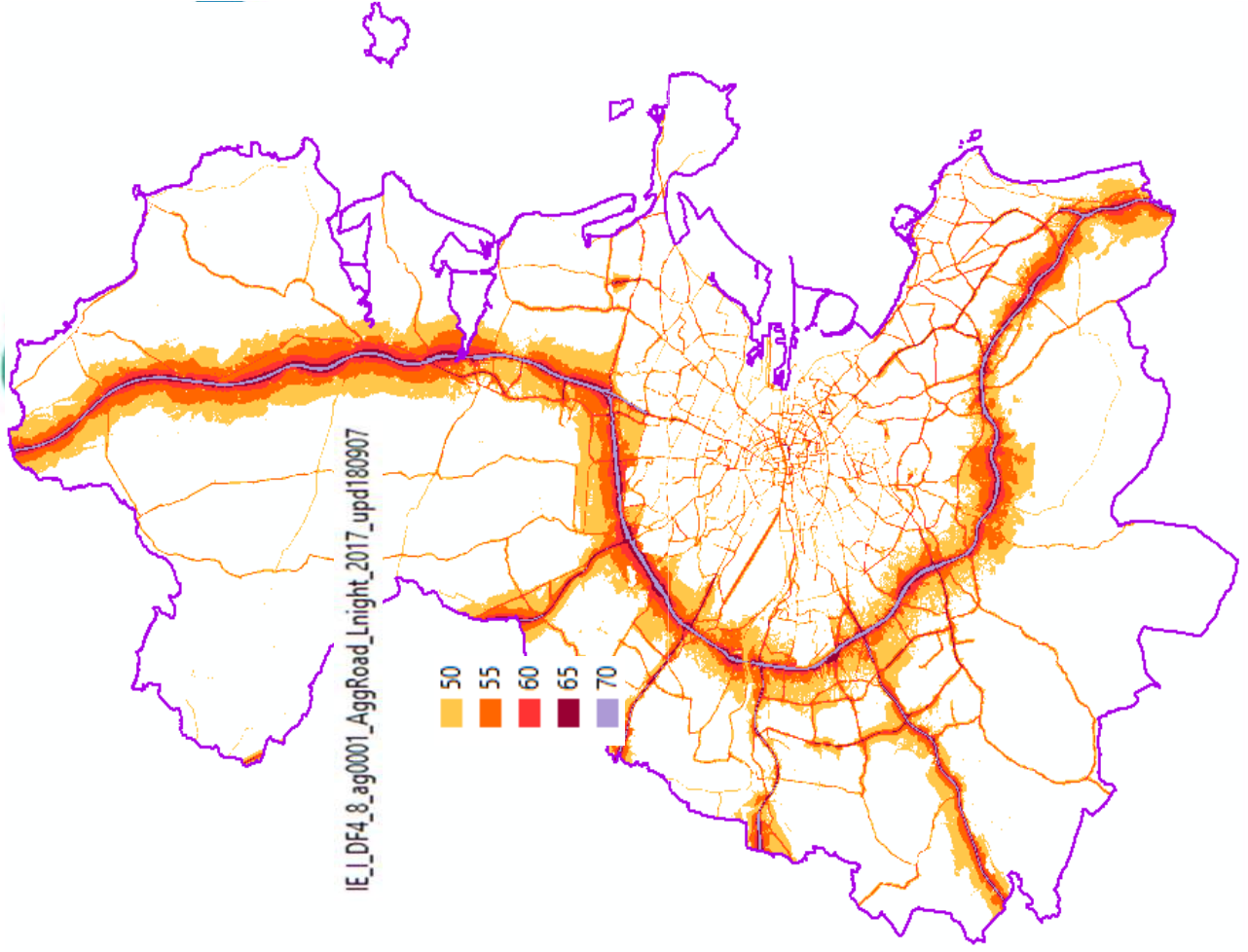
# Overview

- Noise maps and Action plans
- Policy context – Environmental noise
- Cross sectoral projects
- Noise and health in Europe

## Round 3 Noise maps (1/4)

- A strategic noise map sets out the noise exposure in a given area resulting from particular noise sources;
  - major roads (>3 million vehicle movements/annum),
  - major agglomerations (>100,000 inhabitants).
  - major rail & major airports.
  
- The EPA role is to assist the noise mapping bodies (LAs, TII, daa, Irish rail) by providing advice & guidance and to report the noise maps to the European Env. Agency.
  
- 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.
  - $L_{night}$  is the night time noise indicator used in the assessment of sleep disturbance.
  
- EPA processed and published the Round 3 noise maps in Oct 2018.
  - <http://www.epa.ie/monitoringassessment/noisemapping/>





# Noise Action Plans (NAPs)

- The relevant Action Planning Authorities (APAs) i.e., the local authorities, then prepare noise action plans where the  $L_{den}$  (55 dB) and  $L_{night}$  (50 dB) thresholds have been exceeded.
- These action plans are designed to manage noise issues and effects, and it involves the prevention and reduction of environmental noise.
- There are a wide range of potential noise mitigation measures at a National, Regional or Local level, such as;
  - **National** planning guidance or noise regulations.
- Transport policy objectives may be set at a **Regional level**;
  - Improved public transport;
  - Increasing bus, train, bicycle journeys.

## Noise Action Plans (4/4)

- At **Local** Authority level there are powers to act as follows:
  - Replace diesel vehicles with compressed natural gas/electric;
  - Truck routes; Night time delivery restrictions or limits;
  - Traffic routing; **Road re-surfacing**; Noise barriers
  - Planning zones; Facade insulation requirements;
- **Roads Authorities ex. TII** can undertake the following:
  - Traffic management – routes and HGV"s;
  - New road construction (bypass); Re-surface roads;
  - Vehicle speed management; Noise screening measures;
- In Ireland, there has been a range of LA initiatives by on public transport, cycling and pedestrian schemes.
  - Many of these initiatives would also have **cross sectoral benefits**.



# Noise monitors around Dublin

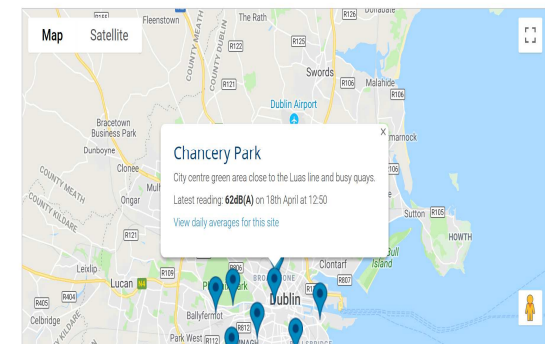


- Dublin City. Live noise monitoring data from 14 fixed sites in the city – <http://dublincitynoise.sonitussystems.com/locations.php>
- Dublin County; Live noise monitoring data from 18 sites in South Dublin, Dublin City (DCC), Dunlaoghaire (DLRCC) and Fingal Co. Council – <http://dublin-noise.sonitussystems.com/locations.php>
- Transport Infrastructure Ire (TII) are working on installing a network of noise monitors around the M50 to add to the air monitors that are there already.
- Dublin Airport; Noise monitoring by the daa at 8 sites around the airport runways and flight paths.
  - Reports are issued every 6 months.

<https://www.dublinairport.com/docs/default-source/noise/noise-monitoring-report-july---december-2018.pdf?sfvrsn=2>

## Our Noise Monitoring Locations

The map shows the locations of our permanent sound level monitoring stations. Click on an icon to see more information for that site. Our monitor locations are chosen to give a good sample of sound levels at sites that are sensitive to noise, such as parks, schools, and libraries.



## Policy context – Environmental noise

- **At European level** the 2012 Directorate General (DG) study *Towards A Comprehensive Noise Strategy* reported that the most obvious link between improving air quality & reducing noise comes in;
  - **reducing vehicular traffic** to reduce both exhaust & noise emissions, or
  - **promoting electric vehicles** in urban areas.
- **In Ireland** the **National Planning Framework 2040**, 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**.*





## UK Air Quality Management policy (2/2)

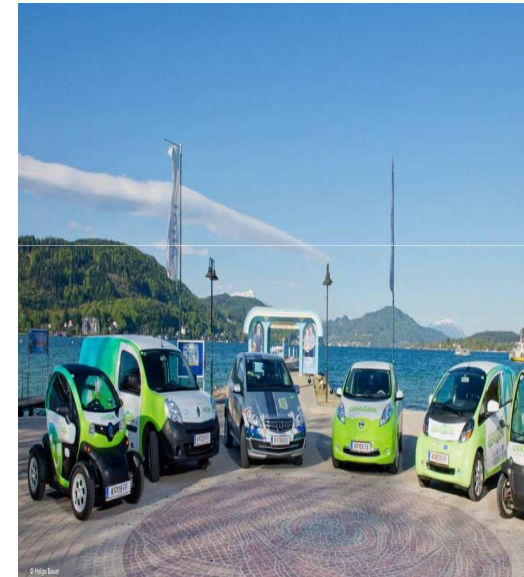
- The [Scottish Government Policy Guidance PG\(S\)](#) has a discussion on air quality and noise & requires LAs to ensure that an integrated approach to managing air quality and noise is taken across all departments.
- Special consideration should be given to noise management areas identified by the [noise action plans](#).
- Certain measures, such as reducing local traffic flows, may benefit both air quality and noise at lower speeds.
- Other potential measures (co-benefits) include HGV restrictions, reducing speeds on motorways & dual carriageways, & strategies to increase the separation between the noise source & sensitive receptors.
- Meanwhile, the [Welsh Government Noise and soundscape action plan 2018-2023](#) includes a section on integrating noise and air quality policy;
  - <https://gov.wales/noise-and-soundscape-action-plan-2018-2023>

## Cross sectoral projects (1/3)

- In 2016, the German Environment Agency published guidance on Noise and climate protection through *Tempo 30 (30 km/hr) speed limits*.
- The report aimed to develop recommendations for **appropriate changes in laws, regulations, & administrative rules** to eliminate obstacles faced by municipalities in enforcing 30 km/h speed limits in urban areas.
- It brings together evidence from a number of Tempo 30 schemes & covers the various impacts including **speed, traffic flow and travel times, noise, air quality, road safety, and public perception**.
- The noise benefits presented included: a 2 dB  $L_{\text{night}}$  reduction in Frankfurt, including a 4 dB(A) reduction between 5 and 6 am.
- The air quality benefits are less clearly described, because the nature of the Tempo traffic flow will have a more significant impact than the speed reduction.
  - <https://www.umweltbundesamt.de/publikationen/wirkungen-von-tempo-30-an-hauptverkehrsstrassen>

# Cross sectoral projects

- The 5-year LIFE+ project (2010-15) on electromobility in Klagenfurt in Austria, was set up to look at controlling air pollution, protecting the climate & reducing noise levels in the city.
- This city project (100,000 inhabitants) set up 100 charging stations run from 100% green electricity, purchased 35 E-cars, 5 to be used as taxis, 2 small vans, 10 microcars & an e-bus for Municipality use, 10 e-bikes & 10 e-scooters for bike loan schemes.
- There was also encouragement and financial incentives for private purchase of e-vehicles including access to the charging network.
- To assess the savings in CO<sub>2</sub>-equivalent emissions, a life cycle analysis was conducted. Over a distance of 707,000 kms, savings of 67 t CO<sub>2</sub> were achieved.
- Based on the total number of cars propelled by an electric motor registered in Carinthia province in 2015, the annual saving in emission amounts to 2,050 t of CO<sub>2</sub>, 4.71 t of NO<sub>x</sub> and 0.54 t of PM<sub>10</sub>.
- <http://www.cemobil.at/index.php?id=5&ID1=5&sprache1=en>



## Limerick Urban Centre Revitalisation (3/3)

- The LUCROC project (€9.1 million investment) for the revitalisation of O'Connell Street should result in quantifiable improvements to urban mobility and the urban environment.
  - It will be a targeted infrastructure and citizen investment programme.
  - European Regional Development Funding (ERDF) via Urban Centre Grants.
- **Aims of the Programme**
  - Improve the public realm, Regenerate the urban fabric
  - Reduce air pollution, Promote noise reduction
- In addition, Limerick City & Co Council will advance actions to promote walking, cycling, electric vehicle use and public transport to, from and within O'Connell Street.
  - All this stems to Limerick's work as Ireland's First **Smarter Travel Demonstration Area** 2012-2016.
- <https://www.limerick.ie/council/services/roads-and-travel/limerick-urban-centre-revitalisation/oconnell-street-limerick>

# Noise & Health & WHO (1/3)

## Burden of disease

- At least **100 million people** in the European Union (EU) are **affected by road traffic noise** above the assessment threshold specified in the Environmental Noise Directive (END) of 55dB  $L_{den}$
- Over **83 million** Europeans are **exposed to harmful levels of noise** from night-time road traffic (above 50 dB  $L_{night}$ )
- At least **1.6 million** healthy years of life are lost due to road traffic noise in Western Europe.

*Source: WHO, 2011; EEA, 2017*

## Aims & Scope of the 2018 WHO noise guidelines

- To provide recommendations for protecting human health from exposure to environmental noise (**Road, rail, aircraft noise**, *wind turbine & leisure noise*).

# Noise & Health & WHO



The screenshot shows the WHO website interface. At the top left is the WHO logo and 'World Health Organization REGIONAL OFFICE FOR Europe'. On the top right, there are language options: English, Français, Deutsch, and Русский. Below this is a search bar. A navigation menu includes Home, Health topics, Countries, Publications, Data and evidence, Media centre, and About us. The breadcrumb trail reads: Health topics > Environment and health > Noise > Environmental Noise Guidelines. On the left, a sidebar lists 'Noise' with sub-links: News, Events, Policy, Environmental Noise Guidelines (highlighted), Data and statistics, Publications, and Contact us. The main content area is titled 'Environmental Noise Guidelines for the European Region' and includes social media sharing icons (Twitter, Facebook, LinkedIn, etc.) and a blue graphic of a human head with sound waves.

**Road Traffic Noise;** For average noise exposure, the Guideline Development Group (GDG) **strongly** recommends reducing noise levels produced by road traffic noise below **53dB L<sub>den</sub>** as road traffic noise above this level is associated with **adverse health effects**

For night noise exposure, the GDG **strongly** recommends reducing traffic noise levels produced by traffic noise during night time below **45dB L<sub>night</sub>** as road traffic noise above this level is associated with **adverse effects on sleep**.

## WHO – implications for Ireland (3/3)

- To reduce health effects, the GDG **strongly** recommends that **policy-makers reduce exposure from road traffic noise**... both at source and on the route between the source and the population
- The health impacts are based on **annoyance and sleep disturbance**, with higher noise trigger levels for other health effects.
- In Ireland, we will need to generate better quality data (data gaps) and to improve our noise modelling expertise.
- The WHO values should be regarded as **target values** i.e. something to strive for, and a driver to take some action (health implications).

### Noise Research in Ireland

- Noise & health research – 3 year project (March 2018-21).  
<https://www.noise-health.com/>
- Common noise assessment methodology (CNOSSOS); 2 year (2018-20)  
[www.noisemapping.ie](http://www.noisemapping.ie)

# To Summarise

- Noise action plans are designed to manage noise issues and effects, and it involves the prevention and reduction of environmental noise.
- The National Planning Framework 2040, includes - Policy Objective 65 to: Promote the **pro-active management of noise**.
- LA initiatives on public transport, cycling and pedestrian schemes can have cross sectoral benefits (**climate, air, noise**).
- Regional integrated projects such as the LUCROC O'Connell Street Limerick project should result in quantifiable improvements to urban mobility and the urban environment.
- Over 83 million Europeans are exposed to harmful levels of noise from night-time road traffic (above 50 dB  $L_{night}$ ).
- To **reduce health effects**, policy-makers will need to look at measures to reduce exposure from road traffic and aircraft noise.