Logika Noise Air Quality CONSULTANTS

Cork Agglomeration

Draft Noise Action Plan 2024-2028

02 April 2024

Comhairle Contae Chorcaí
Cork County Council

Comhairle Cathrach Chorcaí
Cork City Council

Document Control

Client:	Cork City Council (CCiC) and Cork County Council (CCC)
Project Number:	13354B-20
Prepared By:	Action Planning Authority Working Group supported by Noise Consultants Limited
Document No.	13354B-20-R13-01-F04
Date:	2 April 2024

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Executive Summary

The Environmental Noise Directive ('END') (2002/49/EC) aims to put in place a European wide system for identifying sources of environmental noise, informing the public about relevant noise data and taking the necessary steps to avoid, prevent or reduce noise exposure.

The END was transposed into Irish Law by the Environmental Noise Regulations 2006 (S.I. 140/2006) (the 'Regulations'). The Regulations were revised by the European Communities (Environmental Noise) Regulations 2018 (S.I. 549/2018) and amended through the European Communities (Environmental Noise) (Amendment) Regulations 2021 (S.I. 663/2021).

Under the Regulations, Cork City Council and Cork County Council are designated as the Noise-Mapping Bodies (NMBs), for the purpose of making and approving strategic noise maps for the Agglomeration of Cork (the 'Agglomeration'). These local authorities are also designed as Action Planning Authorities (APAs), responsible for preparing a Noise Action Plan for the Agglomeration..

This is the fourth round of noise action planning for the Agglomerations, and this Noise Action Plan (NAP) reports the findings of the strategic noise mapping prepared in consultation with Transport Infrastructure Ireland (TII) and Irish Rail (Iarnród Éireann), and the Environment Protection Agency (EPA), and in respect of the calendar year 2021 for noise from the following sources:

- Road traffic;
- Rail traffic;
- Airports; and
- Industrial activity sites, including ports.

This Noise Action Plan has been prepared in accordance with the Regulations and is aimed at strategic long-term management of environmental noise from transport systems, and is based on the results of the strategic noise maps which informed assessments of population exposure and harmful effects of noise.

The results have been used to identify areas within the Agglomeration to be subject to noise management activities during the implementation of the Noise Action Plan should funding and resources be available. These areas are referred to as Priority Important Areas.

The APAs will, subject to relevant collaboration with the Noise Mapping Bodies (NMBs), resources and funding, assess these Priority Important Areas and confirm the relevant noise management measures for each Priority Important Area, including processing of cost-benefit analysis and health benefits.

Additionally, the results of the strategic noise mapping have been used to identify areas within the Agglomeration to be considered for preservation for environmental noise quality. These are referred to as Candidate Quiet Areas.

A number of these Candidate Quiet Areas will be investigated during the implementation of the Noise Action Plan to determine their appropriateness for designation as a Quiet Area. Subject to the

outcome of the investigations, proposals for delimiting a Candidate Quiet Area as a Quiet Area shall be drawn up for submission to the Environmental Protection Agency (EPA) and the Minister.

This Noise Action Plan includes Strategic Environmental Assessment (SEA) screening checks following the processes outlined in the Environmental Protection Agency (EPA) report *Development of Strategic Environmental Assessment (SEA) Methodologies for Plans and Programmes in Ireland (2001-DS-EEP-2/5)' – Synthesis Report* (Appendix B; SEA Checklist). The SEA screening concluded that no SEA is required.

The Noise Action Plan includes an assessment to determine if it is required to be subject to an 'Appropriate Assessment' under the Habitats Directive. The screening assessment concluded that the implementation of the Noise Action Plan in isolation or in combination with any other Action Plans is not directly related to the conservation management of any Natura 2000 site in the assessment area. It was determined that there is no likelihood of a significant impact on a Natura 2000 site. Consequently, there is no need to conduct a 'Stage 2 AA' for the purposes outlined in Article 6(3) of the Habitat Regulations.

This Noise Action Plan is supported by a four-year programme for implementation (2024-2028), with progress reported to the EPA on an annual basis.

The Noise Action Plan is underpinned by a set of overarching noise policy principles outlined in the **Noise Policy Statement**.

These noise policy principles are supported by a series of **Responsible Aims** which Cork City Council and Cork County Council will strive to achieve in order to manage noise issues within the Cork Agglomeration.

NOISE POLICY STATEMENT

Cork City Council and Cork County Council will adopt a strategic approach to managing environmental noise from road traffic, rail traffic, airports and industrial activity sites, including ports, within its functional area, and will aim to:

- **Prevention** – manage the risk of additional members of the community being exposed to undesirable noise levels where it is likely to have significant adverse impact on health and quality of life.
- **Protection** - protect areas which are desirably quiet, or which offer a sense of tranquillity through a process of identification and validation followed by formal designation of 'Quiet Areas'.
- **Mitigation** – identify and prioritise appropriate mitigation measures to reduce noise levels where they are potentially harmful.

RESPONSIBLE AIMS

Cork City Council and Cork County Council commit to the following Responsible Aims during current and future noise action planning:

RA_1 - Policy and Guidance Development – Encourage the integration of noise considerations into the ongoing process of policy and guidance development, and actively promote existing policies and guidance related to noise.

RA_2 - Working Groups – Participate in technical working groups pertinent to the implementation of the Environmental Noise Directive and with the assistance of the Environmental Protection Agency, a Round 4 Noise Action Plan Implementation Working Group shall be established.

RA_3 - Noise Mitigation - In collaboration and consultation with relevant Noise Mapping Bodies, noise management interventions shall be applied on a priority basis during existing maintenance and improvement programs, where appropriate. This application will be based on a relevant evaluation of whole-life costs and benefits

RA_4 - Protection - Assess and, where appropriate, propose Candidate Quiet Areas to the Environmental Protection Agency for designation as Quiet Areas by the Minister

RA_5 - Prevention – Evaluate and condition planning proposals for noise sensitive development near major noise sources.

RA_6 - Community Engagement – Commit to proactive and inclusive engagement with communities and collaboratively address noise issues for the improvement of our shared living environment.

RA_7 – Manage Noise Complaints - Review and respond to all environmental noise complaints in accordance with their Customer Charter

RA_8 - Regulatory Engagement – Report the progress on the implementation of Noise Action Plans, including the investigation and implementation of noise management measures in Priority Important Areas, and the assessment of Candidate Quiet Areas for preservation of environmental noise quality, to the Environmental Protection Agency on an annual basis.

Contents

1 Introduction

1.1 Purpose of the Agglomeration Noise Action Plan

The Environmental Noise Directive ('END') (2002/49/EC) is a European Union legal instrument vital for protecting public health and the environment by addressing the adverse effects of environmental noise.

The END was transposed into Irish Law by the Environmental Noise Regulations 2006[1] (S.I. 140/2006) (the 'Regulations'). The Regulations were revised by the European Communities (Environmental Noise) Regulations 2018[2] (S.I. 549/2018) and amended through the European Communities (Environmental Noise) (Amendment) Regulations 2021[3] (S.I. 663/2021).

The END does not set any limit values or prescribe noise management measures to fulfil its aims. Through the establishment of noise regulations, the execution of strategic noise maps and implementation of Noise Action Plans, the END strives to raise public awareness, prevent and reduce environmental noise, and preserve environmental noise quality in areas where it is good.

In Ireland, it is recommended that the Noise Action Plans support Policy Objective 65 from the National Planning Framework 2040[4], which states:

"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."

This Noise Action Plan, and its subsequent implementation, is critical to ensuring Cork City Council (CCiC) and Cork County Council (CCC) achieve the aims and objectives of the END, compliance with national policy and to address local environmental noise issues.

1.1.1 Strategic Environmental Assessment (SEA)

Strategic Environmental Assessment (SEA) is a formal and systematic process (including the stages of Screening, Scoping and Environmental Assessment) designed to assess the potential significant environmental impacts of implementing a plan or program before deciding to adopt it.

The requirement for SEA for plans and programs is outlined in European Directive 2001/42/EC ('SEA Directive'). In the context of transport sector plans (which could include a Noise Action Plan), this directive is implemented in Irish law through the European Communities (Environmental Assessment

[1] https://www.irishstatutebook.ie/eli/2006/si/140/made/en/print [Accessed March 2024]
[2] https://www.irishstatutebook.ie/eli/2018/si/549/made/en/print [Accessed March 2024]
[3] https://www.irishstatutebook.ie/eli/2021/si/663/made/en/print [Accessed March 2024]
[4] National Planning Framework 2040: http://www.gov.ie/en/project-ireland-2040/ [Accessed March 2024]

of Certain Plans and Programmes) Regulations, 2004[5] (S. I. 435/2004). This legislation has been amended by the European Communities (Environmental Assessment of Certain Plans and Programmes) (Amendment) Regulations 2011[6] (S.I. 200/ 2011).

SEA screening has been undertaken with respect to this Noise Action Plan, to firstly consider the applicability of the regulations, and then consider if this Cork Agglomeration Noise Action Plan would likely give any significant environmental impacts and therefore that further SEA would be required. SEA Screening has concluded that no further SEA work is required.

1.1.2 Appropriate Assessment (AA)

The primary purpose of the Directive 92/43/EEC ('Habitats Directive') is to promote the conservation of natural habitats and wild fauna and flora across the European Union. The Habitats Directive is transposed into Irish law by the European Communities (Birds and Natural Habitats) Regulations, 2011[7] (S. I. 477/2011) ('Habitats Regulations').

The European Environment Agency has designated a network of protected areas ('Natura 2000' sites) covering Europe's most valuable and threatened species and habitats.

The Noise Action Plan has been assessed to determine if it is required to be subject to an 'Appropriate Assessment' under the Habitats Directive. The screening assessment determined that there is no likelihood of a significant impact on a Natura 2000 site. Consequently, there is no need to conduct a 'Stage 2 AA' for the purposes outlined in Article 6(3) of the Habitat Regulations.

1.1.3 Roles and Responsibilities

The Regulations designate the Environmental Protection Agency (EPA) as the national authority (the Agency) responsible for overseeing the implementation of the Regulations and for reporting information relating to strategic noise mapping and Noise Action Planning to the European Commission in accordance with Article 10(2) of the END.

The EPA provides guidance ('EPA Guidance') on the required activities to be undertaken during the implementation of the Regulations. These have been fully accounted for in the preparation of this Noise Action Plan.

Under the Regulations, Cork City Council (CCiC) and Cork County Council (CCC) are designated as the Noise-Mapping Bodies (NMBs), for the purpose of making and approving strategic noise maps for the Agglomeration of Cork (the 'Agglomeration').

These local authorities are also designated as Action Planning Authorities (APAs), and are responsible for preparing a Noise Action Plan for the Agglomeration. Transport Infrastructure Ireland and Iarnród

[5] S.I. No. 435/2004 - European Communities (Environmental Assessment of Certain Plans and Programmes) Regulations 2004 (irishstatutebook.ie) [Accessed March 2024]
[6] S.I. No. 200/2011 - European Communities (Environmental Assessment of Certain Plans and Programmes) (Amendment) Regulations 2011. (irishstatutebook.ie) [Accessed March 2024]
[7] https://www.irishstatutebook.ie/eli/2011/si/477/made/en/print [Accessed March 2024]

Éireann are designated as Noise Mapping Bodies (NMBs) for the purpose of making strategic noise maps for major roads (National) and major rail.

The APAs must prepare the Noise Action Plan in consultation with the EPA and the NMB for the strategic map involved. Further details on the roles and responsibilities of all parties in respect of their obligations under the Regulations and the collaboration required to deliver the priorities of this Noise Action Plan are set out in **Table 5**.

1.1.4 Scope of the END

The END applies to environmental noise to which humans are exposed in built-up areas, in public parks or other quiet areas in an agglomeration, in quiet areas in open country, near schools, hospitals and other noise sensitive buildings and areas. Noise sources required to be considered within agglomerations are detailed in **Section 1.2**.

The END does not apply to noise that is caused by the exposed person himself/herself, noise from domestic activities, neighbourhood noise, noise at workplaces or noise inside means of transport or due to military activities in military areas.

Strategic noise maps are strategic tools and should not be used for the assessment of local noise nuisances or planning decisions.

1.2 Scope of the Agglomeration Noise Action Plan

This Noise Action Plan has been prepared in accordance with the Regulations and is aimed at strategic long-term management of environmental noise from transport systems referring to the results of the strategic noise maps to inform assessments of population exposure and harmful effects of noise.

The strategic noise maps for the agglomeration of Cork have been prepared by the NMBs responsible and include Cork City Council, Cork County Council, Transport Infrastructure Ireland (TII) and Irish Rail. The strategic noise maps have been prepared in respect of the calendar year 2021 for noise from the following sources:

- **Road traffic** – all roads and major roads (sections of road with a flow threshold of 3,000,000 vehicle passages per year);
- **Rail traffic** – all rail and major rail (sections of rail route with a flow threshold of 30,000 train passages per year);
- **Airports** – all airports and major airports (airports which have more than 50,000 movements per year (a movement being a take-off or a landing), excluding those purely for training purposes on light aircraft); and
- **Industrial activity sites** - Industrial Emission (IE) sites as regulated by the EPA under the IPPC Directive 96/61 EC, and ports.

The Regulations require the strategic noise mapping to be based upon an assessment year of 2021. However, due to COVID-19 related travel restrictions and the operational impacts of the pandemic, noise contour results for 2021 may not be fully representative. The greatest anomalies in transportation noise during this period are likely associated with airport noise, which saw significant reductions in air traffic, and therefore a reduction in most noise contours with fewer people shown

to be affected by aircraft noise. Rail and road traffic travel during this period saw some reductions, but not as significant as air travel, therefore the use of the 2021 assessment year for these sources is deemed representative for the purpose of the Round 4 action planning.

There have been three rounds of strategic noise maps and Noise Action Plans in Ireland (2008-2013, 2013-2018 and 2018-2023) with this Noise Action Plan for the Agglomeration being Round 4 (2024-2028)[8].

The first three rounds of strategic noise maps have been developed using computation methods set out in Environmental Noise Regulations 2006 (S.I. 140/2006). For Round 4, Member States are required to use the Common Noise Assessment Methods for Europe (CNOSSOS-EU). This change in methodology makes a direct comparison of the Round 4 noise exposure statistics with the previous three rounds methodologically complex.

For the noise action planning process, the Regulations require[9]:

"Each action plan or revision of an action plan shall address priorities which—

(i) may be identified on the basis of exceedances of any relevant noise limit value or other relevant criteria established by the Agency [EPA] *in accordance with subparagraph (3), and*

(ii) shall, in the first instance, address the most important area or areas, as the case may be, established by strategic noise mapping."

Furthermore the Regulations require each APA to "determine the measures to be included in an action plan."

Finally, the action plan must "have as its objective that of also protecting quiet areas in an agglomeration".

This Noise Action Plan therefore includes the identification of existing noise emissions, the identification of priority important areas based on an assessment of harmful effects and details of noise management measures for consideration and evaluation at implementation stage. The Noise Action Plan also includes the identification of Candidate Quiet Areas for consideration as Quiet Areas at the implementation stage.

1.2.1 Noise Indicators

The Regulations specify two main noise indicators which much be used in the preparation of the strategic noise maps:

- L_{den} – the annual average noise level for the day, evening and night periods and is designed to indicate overall annoyance; and

[8] The European Commission allowed for one additional year for the Round 4 Noise Action Plans, reducing the five-year implementation period to four-years.
[9] Regulation 12(2)

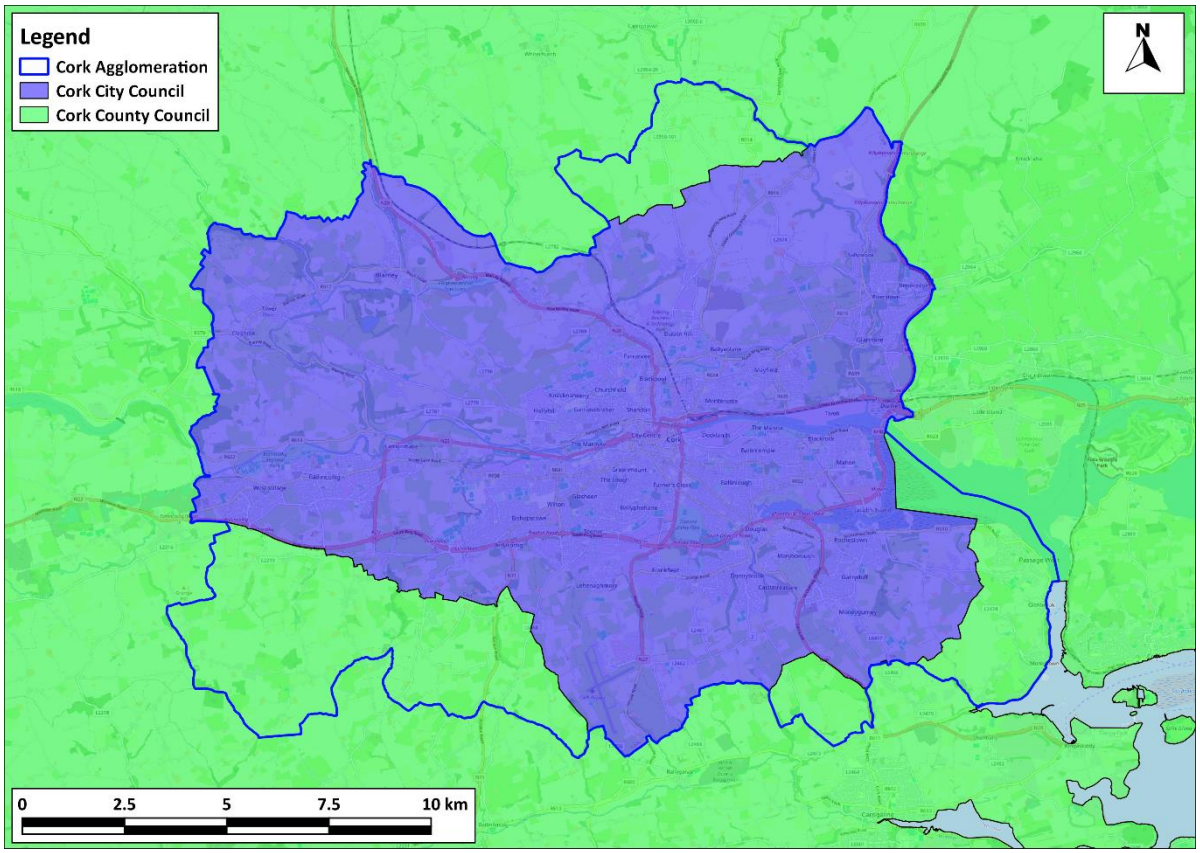
- L_{night} – the annual average noise level for the night-time periods, from 23:00 – 07:00 hours, and is designed to indicate sleep disturbance.

Calculations of supplementary noise indicators have also been undertaken, namely the $L_{Aeq, 16hr}$ (the annual average noise level for the daytime/evening periods, from 07:00 – 23:00 hours), which has been approved by the EPA as the appropriate noise indicator to inform the identification of Candidate Quiet Areas.

1.3 Cork Agglomeration

The Agglomeration is defined in the Regulations and constitutes areas in the county of Cork and Cork City. The Agglomeration covers an area of 241km^2 with a population of 219,286 and is shown in **Figure 1**.

Figure 1: Agglomeration and County Boundaries



A summary of the proportion of APA populations in the Agglomeration is given in **Table 1**.

Table 1: Agglomeration – Total Population[10]

Cork Agglomeration	Cork City Council	Cork County Council
219,287	210,164	9,123

The total length of road and rail, and the total number of industrial sites[11] included in the Agglomeration strategic noise maps is summarised in **Table 2**.

Table 2: Agglomeration - Summary of SNM Sources

Noise Sources	Total Length/No. of Sites (metres, m)
All Roads (including Major Roads)	1,300,746m
Major Roads	177,550m
All Rail (including Major Rail)	25,763m
Major Rail	0m
Industry	9 sites

The number of noise sensitive buildings (Schools and Hospitals) within the Agglomeration and considered by the strategic noise mapping are summarised in **Table 3**.

Table 3: Agglomeration - Total number of Noise Sensitive Buildings

Noise Sensitive Building	Number of Noise Sensitive Buildings
Schools	243
Hospitals	26

1.4 Structure of the Noise Action Plan

This Noise Action Plan is a combined plan for the agglomeration of Cork, and its structure is in two parts.

1.4.1 Agglomeration Sections (Sections 1 – Section 9)

The first part covers the overarching principles of the noise action planning process, including the existing international, national and regional noise management legislation and guidance, a

[10] CSO Census Data (April 2022)
[11] Industrial Emission (IE) sites as regulated by the EPA under the IPPC Directive 96/61 EC, and ports

description of the noise mapping process, and methodologies advocated in the EPA Guidance for identifying and addressing the most important areas, as established by the strategic noise mapping.

The first part includes a four-year implementation plan for the Noise Action Plan. Progress will be tracked through annual progress reporting to the EPA throughout the execution of this plan.

The elements set out in the first part of the Noise Action Plan are relevant to all Agglomeration APAs.

1.4.2 APA Sections (Sections 10 and 11)

The second part includes separate sections for each of the Agglomeration APAs, including an update on the implementation progress of the measures set out in previous Noise Action Plans, and identification of the specific areas within each region to be considered for noise management measures or as Candidate Quiet Areas for the preservation of environmental noise quality.. The specific sections are:

- **Section 10** – Cork City Council
- S**ection 11** - Cork County Council

1.5 Round 4 Timetable

A timetable of the key activities for the development and implementation of the Noise Action Plans for Round 4, and delivery to the European Environment Agency (EEA) by the Authority, is set out below:

- 18 July 2024: Deadline for noise action plans
- 18 August 2024: Deadline for publishing noise action plans
- 18 August 2024: Summaries of noise action plans submitted to the EPA
- 18 January 2025: Noise actions plans to be reported to the EEA by the EPA.

1.6 Consultation

1.6.1 Public Consultation

A Period of public consultation will be completed on this draft Noise Action Plan. A summary of the public consultation will be set out in the final Noise Action Plan.

1.7 Acknowledgements

The background mapping used in the figures presented in this report are taken from OpenStreetMap (© OpenStreetMap contributors. See: https://www.openstreetmap.org/copyright).

2 Noise Management Legislation and Guidance

2.1 Noise and Effects on Health and Quality of Life

2.1.1 Environmental Noise Guidelines (World Health Organization, WHO), 2018

Noise can have a significant and disruptive effect on everyday life. Since the implementation of the Regulations, there have been extensive studies into the links between environmental noise exposure and health.

The World Health Organization (WHO) in its publication 'Environmental Noise Guidelines for the European Region 2018'[12] and 'Night Noise Guidelines for Europe 2009'[13] has also presented several key health outcomes including: noise annoyance; sleep disturbance; cardiovascular health; mental health, wellbeing, and quality of life; and children's learning.

The Environmental Noise Guidelines for the European Region provides recommendations for protecting human health from exposure to environmental noise originating from various sources including road traffic, railway and aircraft noise.

The recommendations include guideline values using L_{den} and L_{night} metrics in terms of the onset of health effects.

However, no single noise metric best correlates with all adverse health outcomes associated with environmental noise effects, and health effects can be correlated with more than one metric. The noise metrics which are generally considered to best correlate with the different health effects, and are the subject of this Noise Action Plan, are set out in **Table 4**.

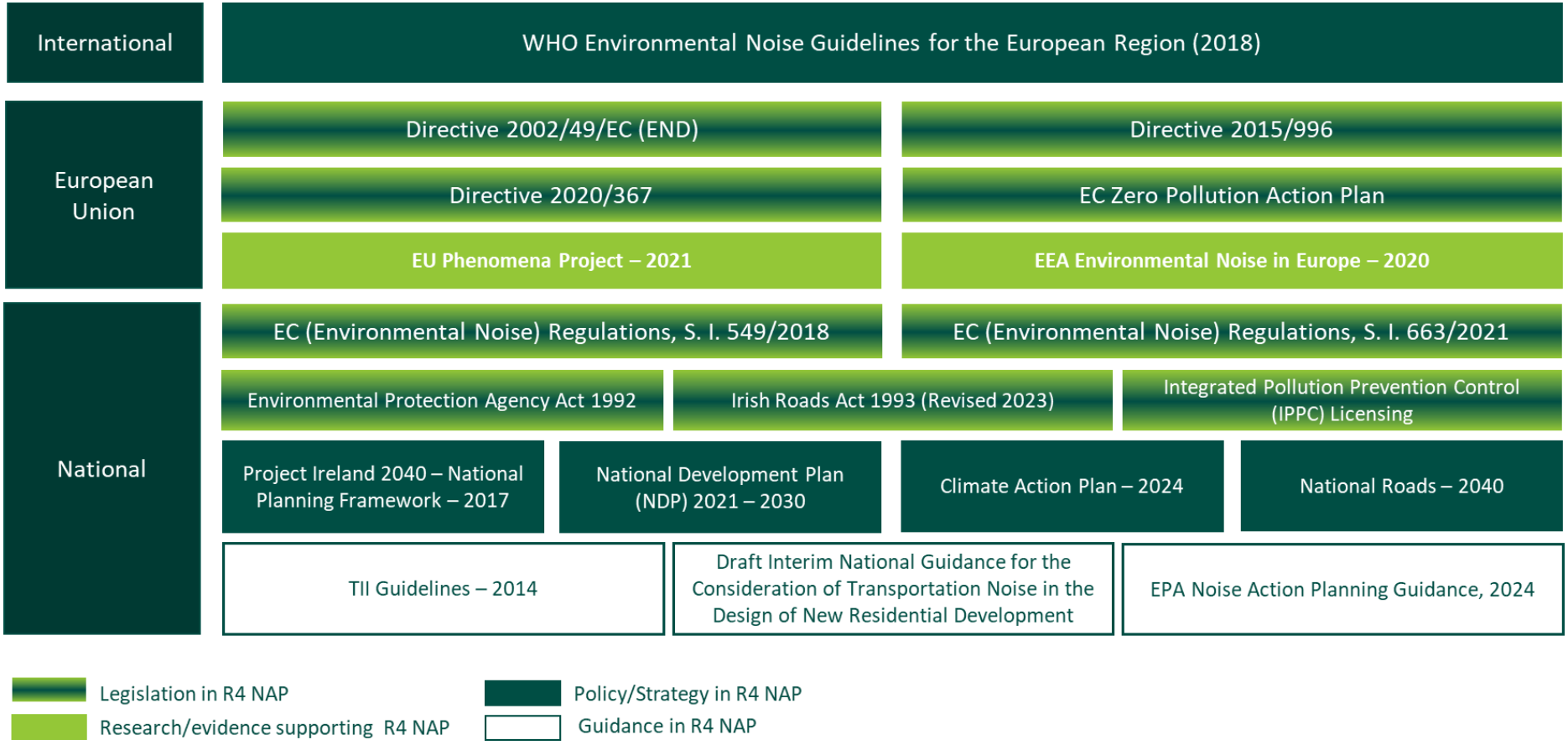
Table 4: Noise Metrics and the Associated Health Effects

Noise Metric	Health Effects
L_{den}	Cardiovascular disease, Cognitive impairment, and Annoyance
L_{dn}	Annoyance

Existing international, European Union and national noise management legislation and guidance is shown in **Figure 2**, with brief summarises provided in **Section 2.2**.

[12] Environmental Noise Guidelines for the European Region, World Health Organisation, 2018
[13] Night Noise Guidelines for Europe, World Health Organisation, 2009

Figure 2: Existing Noise Management Legislation and Guidance



2.2 European Union Legislation and Regulations

2.2.1 European Communities Directive 2002/49/ EC

The Environmental Noise Directive ('END') (2002/49/EC) relates to the assessment and management of environmental noise. It is the main instrument of the EU to quantify noise pollution levels and trigger actions within Member States.

The aim of the END is to:

"… define a common approach intended to avoid, prevent or reduce on a prioritized basis the harmful effects, including annoyance, due to exposure to environmental noise."

2.2.2 Commission Directive (EU) 2015/996

Commission Directive EU 2015/996 replaces Annex II of the END and describes the common assessment methods for road, rail and air traffic noise and industrial noise sources, developed within the CNOSSOS-EU project.

Shortly after the publication of Directive 2015/996, some formatting and typographical errors were identified which were addressed in the Corrigendum[14] which was published in 2018.

2.2.3 Commission Directive (EU) 2020/367

Commission Directive EU 2020/367 replaces Annex III of Directive 2002/49/EC in describing the assessment of health effects under END.

The Directive adopts the exposure response functions published within WHO Environmental Noise Guidance, 2018 for the number of people highly annoyed (HA) and highly sleep disturbed (HSD) from road, rail and aircraft noise. The Directive also adopts the calculation of Ischemic Heart Disease (IHD) with respect to road traffic noise.

2.2.4 European Union Zero Pollution Action Plan (ZPAP), 2021

The European Commission Zero Pollution Action Plan (ZPAP) was adopted in 2021. The vision for 2050 under the ZPAP is for air (including noise), water and soil pollution to be reduced to levels no longer considered harmful to health and natural ecosystems. This is translated into key 2030 targets to speed up reducing pollution at source.

The target for noise includes reducing the share of people chronically disturbed by transport noise by 30%. This target has not been transposed into Irish legislation, however, may be in the future, and therefore should be considered in future iterations of Noise Action Plans.

[14] https://www.ecac-ceac.org/documents/ecac-documents-and-international-agreements [Accessed March 2024]

2.2.5 European Commission Assessment of Potential Health Benefits of Noise Abatement Measures in the EU (Phenomena project), 2021

In 2021 the findings of the EU Phenomena project were published. The study aimed to define the potential of measures capable of delivering significant reductions (20%-50%) of health burden arising from the environmental noise of roads, railways and aircraft, and to assess how relevant noise related legislation could increase the implementation of the most effective measures, while considering the constraints and specificities of each transport mode.

The project relied on a combination of policy research, consultation, health economics and environmental assessment. Individual noise abatement measures were examined and their health impact quantified leading to a shortlist of the most effective combinations of measures for each transport mode.

For roads noise, the measures considered included low noise road pavements, low noise zones (speed reductions) and new legislation at an EU level for a low noise tyre fleet. For rail noise, the noise abatement solutions included smooth tracks, quieter vehicles, smooth wheels and quieter tracks.

The analysis found that combination of the road noise abatement measures could achieve health burden reduction by 2030 in the range 18-24%. For rail noise, health burden reductions by 2030 were in the range 37-52%.

2.2.6 European Environment Agency (EEA) Environmental Noise in Europe - 2020

The report summarises the many reviews of evidence on the relationship between environmental noise and specific health effects, including cardiovascular disease, cognitive impairment, sleep disturbance, tinnitus and annoyance.

It is estimated that, in the EU Member States and other western European countries (excluding Turkey) the number of people suffering various health outcomes from the exposure to environmental road noise in urban areas in 2017 was 29,500 for ischemic heart disease (IHD), 12,525,000 for high annoyance, 3,242,000 for high sleep disturbance and 7,600 due to mortality (from noise related IHD)[15].

2.3 National Legislation and Regulations

The END was transposed into Irish Law by the Environmental Noise Regulations 2006[16] (S.I. 140/2006) (the 'Regulations'), establishing a unified framework for mitigating and minimising the adverse consequences of environmental noise exposure. They identify organisations responsible for noise mapping and the development of strategic noise maps and action plans

[15] Table 3.5, Environmental Noise Guidelines for the European Region, World Health Organisation, 2018
[16] https://www.irishstatutebook.ie/eli/2006/si/140/made/en/print [Accessed March 2024]

The Regulations were revised by the European Communities (Environmental Noise) Regulations 2018[17] (S.I. 549/2018) and amended through the European Communities (Environmental Noise) (Amendment) Regulations 2021[18] (S.I. 663/2021). A summary of these Regulations is presented in the following sections.

2.3.1 European Communities (Environmental Noise) Regulations, 2018 (S. I. 549/2018)

These Regulations replace the Environmental Noise Regulations 2006 (S.I. No. 140 of 2006) and provide for the implementation in Ireland of a common approach within the European Community to avoid, prevent or reduce, on a prioritised basis, the harmful effects, including annoyance, due to exposure to environmental noise.

The Regulations designate the Environmental Protection Agency (EPA) as the National Authority for the purposes of the Regulations. The Agency's role includes supervisory, advisory and coordination functions in relation to both noise mapping and action planning, as well as reporting requirements for the purpose of the Directive.

2.3.2 European Communities (Environmental Noise) (Amendment) Regulations, 2021 (S. I. 663/2021)

This Regulation amends the European Communities (Environmental Noise) Regulations 2018 (S.I. 549/2018), setting out methods for harmful effects, considering ischaemic heart disease (IHD), high annoyance (HA) and high sleep disturbance (HSD) and requiring each NMB to report details of these harmful effects as part of the noise mapping work.

The Regulations also amended the boundaries of the existing Dublin and Cork agglomerations and defined a new Limerick agglomeration.

2.3.3 Environmental Protection Agency Act, 1992

In Ireland, statutory provisions relating to environmental noise pollution come primarily from the Environmental Protection Agency Act (1992).

The Act identifies noise as a form of environmental pollution and contains provisions for dealing with noise deemed ‘a nuisance or would endanger human health or damage property or harm the environment’.

With regards to noise, Section 106-107 is most relevant:

- Section 106 gives the relevant Minister certain powers to regulate noise that may give rise to a nuisance or be harmful to health or property;

[17] https://www.irishstatutebook.ie/eli/2018/si/549/made/en/print [Accessed March 2024]
[18] https://www.irishstatutebook.ie/eli/2021/si/663/made/en/print [Accessed March 2024]

- Section 107 gives power to local authorities or the Agency to serve notice requiring measures to be taken to prevent or limit noise from any premises, processes or works; and
- Section 108 sets out a process whereby noise issues may be taken to District County, which may make any order requiring that the person or body responsible for the noise to take measures for the prevention or limitation of the noise in question.

There is no clear official or statutory guidance which could help promote the effectiveness or clarity of the provisions within the Act; however, within the framework of the Regulations the EPA may consider it appropriate to develop such guidance in the future.

2.3.4 Roads Act, 1993 (Revised 2023)

In Ireland, the Roads Act, 1993[19] (revised 2023[20]), outlines the responsibilities of the roads authorities for the maintenance and construction of public roads. Under section 77 of the Roads Act 1993, power had been given to the Minister to make regulations requiring relevant road authorities to take measures to mitigate the effects of road traffic noise and to specify limits for road traffic noise which, if exceeded, would require mitigating action from the road authorities. However, Section 77 was repealed under the Public Transport Regulation Act, 2009[21]. There are no Irish statutory noise limits or standards governing road traffic noise for new or existing roads.

2.3.5 Integrated Pollution Prevention Control (IPPC) Licensing

The EPA's Integrated Pollution Prevention Control Licensing terms require that certain bodies must limit environmental pollution caused by industrial activities to obtain a license to operate. The criteria relating to noise pollution are outlined in the EPA publication "*Guidance Note for Noise: Licence Applications, Surveys and Assessment in Relation to Scheduled Activities (NG4)"*- 2016. This document recommends a 'Best Available Technique" approach to the assessment and mitigation of noise pollution. The document contains typical limit values for daytime (55 dB $L_{Ar,T}$[22]), evening (50 dB $L_{Ar,T}$) and nighttime (45 dB $L_{Ar,T}$) noise, at sensitive locations, from licensed facilities. Alternative limit values are provided for quiet areas and areas of low background noise.

2.3.6 Project Ireland 2040 – National Planning Framework, 2017

The National Planning Framework (NPF) is a high-level strategic plan to guide development and investment over the coming years. In addition to setting aims associated with infrastructure and investment, targets are also set around social outcomes.

[19] https://revisedacts.lawreform.ie/eli/1993/act/14/revised/en/html [Accessed March 2024]
[20] https://revisedacts.lawreform.ie/eli/1993/act/14/revised/en/html [Accessed March 2024]
[21] https://www.irishstatutebook.ie/eli/2009/act/37/enacted/en/print [Accessed March 2024]
[22] The Rated Noise Level, equal to the L_{Aeq} during a specified time interval (T), plus specified adjustments for tonal character and/or impulsiveness of the sound.

Project Ireland 2040 – National Planning Framework recognises the importance of noise management which is implemented through the following objectives 52 and 65:

National Policy Objective 52

"The planning system will be responsive to our national environmental challenges and ensure that development occurs within environmental limits, having regard to the requirements of all relevant environmental legislation and the sustainable management of our natural capital."

National Policy Objective 65

"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."

2.3.7 National Development Plan (NDP) 2021 – 2030

An investment strategy and budget that aims to transform Ireland and support the largest public housing program in the history of the state.

The plan sets out the broad direction for investment priorities over the coming decade and pledges to allocate public investment of €165 billion across all sectors and regions of Ireland. The plan aims to prepare Ireland for population growth of approximately 1 million between 2016 and 2040 and help deal with the ongoing challenges of COVID-19 and Brexit.

2.3.8 Climate Action Plan, 2024

The Climate Action Plan (CAP24) is the third update to Ireland's Climate Action Plan. It sets out a roadmap for actions to halve emissions by 2030, and reach net zero no later than 2050.

CAP24 implements carbon budgets and sectoral emissions ceiling with a view to accelerating the actions required to respond to the climate crisis, putting climate solutions at the centre of Ireland's social and economic development.

2.3.9 National Roads 2040

National Roads 2040 (NR2040) is TII's long-term strategy for planning, operating, and maintaining the National Roads network. The strategy has been developed to support the delivery of National Planning Framework 2040 objectives and to align with the Department of Transport's National Investment Framework for Transport in Ireland. One of the key visions for the strategy is that the national road network should be environmentally sustainable:

"Environmental sustainability is the bedrock for social and economic sustainability in Ireland; avoiding and where unavoidable mitigating environmental impacts including climate change, air quality and noise as well as biodiversity impacts of National Roads."

While many of the issues in the strategy surround decarbonisation and the need to reduce greenhouse gas and carbon emissions, as set out in the Climate Action Plan 2024 (CAP24) there are potentially opportunities for mutual gains for noise reduction (e.g., through active travel, integrated mobility, maintenance and improvement works on the existing national road network).

2.3.10 Transport Infrastructure Ireland (TII) Guidelines, 2014

Considering the lack of standardised methods for the assessment of road traffic noise the then National Roads Authority (NRA) published the 'Guidelines for the Treatment of Noise and Vibration in National Road Schemes.' These guidelines propose design goals for noise related to both the construction and operational stages of new road schemes.

Following a review of similar guidelines in the UK and adapting methodologies in line with the requirements of the END, the NRA proposed an operational design goal of $L_{den} \leq 60$ dB free field value. Essentially what this means is that for any new road scheme the Environmental Impact Assessment Report must take this target into account about any existing sensitive residential property likely to be affected by the road scheme.

The guidelines present an approach to mitigating the adverse effects of road construction in so far as possible using measures such as alignment changes, barrier construction e.g., earth mounds, and the use of low noise road surfaces. The responsibility for noise mitigation policy relating to any proposed new sensitive properties in the vicinity of the road scheme lies with the relevant Planning Authority.

2.3.11 Draft Interim National Guidance for the Consideration of Transportation Noise in the Design of New Residential Development, 2021

In the absence of Irish planning guidance for new residential development and the consideration of transportation noise local authorities in 2021 prepared draft guidance under a subgroup of the NIECE National Local Authority Noise Working Group.

This draft guidance includes an overarching aspiration that good acoustic design should be implemented from the outset of the design of new residential developments.

2.3.12 EPA Noise Action Planning Guidance, 2024

The EPA's guidance for strategic noise mapping for Round 4 using the CNOSSOS-EU assessment methods is published in five parts:

- Part 1: Requirements
- Part 2: Calculation Methodology & Noise Modelling
- Part 3: Noise Exposure Assessment
- Part 4: Publication and Reporting
- Part 5: Harmful Effects Assessment

The EPA has also published guidance on noise action planning. These documents are referred to collectively as the 'EPA Guidance'.

3 Regional Noise Management Policy and Guidance

3.1 Cork Metropolitan Area Transport Strategy

The Cork Metropolitan Area Transport Strategy (CMATS) provides the framework to deliver an accessible, integrated transport network that enables the sustainable growth of the Cork Metropolitan Area as a dynamic, connected, and internationally competitive European city region as envisaged by the National Planning Framework 2040. The guiding principles upon which CMATS is based are:

- The provision of an efficient and safe transport network;
- Prioritise sustainable and active travel and reduce car dependency;
- Provide a high level of public transport connectivity to key destinations with high demands;
- Protect key strategic routes for the movement of freight and services including access to the Port of Cork;
- Enhance public realm through traffic management and transport interventions; and
- Increase public transport capacity and frequencies.

CMATS supports the delivery of the 2040 population growth target for the Cork Metropolitan Area of 172,000 persons (125,000 for Cork City and 47,000 for the County Metropolitan area and attendant jobs and education growth. The Strategy recognises that for Cork City to realise the compact growth aspirations of the National Planning Framework, Cork City will become the focus of significant regeneration opportunities at brownfield locations such as the Cork Docklands, Blackpool and Tivoli.

The Strategy has identified a number of key challenges that require addressing including:

'*Reducing the impact of transport on the environment through targets measures to limit the negative impact of air and noise emissions.'*

The infrastructural proposals contained within CMATS, such as the delivery of a city-wide cycle network, enhancements to the city's bus services through the BusConnects programme of works, the construction of a Light Rail Transit system all have a clear focus on supporting increased active and sustainable transport modes across the city. This approach with respect to the delivery of future transport infrastructure in the city will have positive outcomes in terms of reducing transport related noise and emissions.

3.2 Regional, Spatial and Economic Strategy (RSES) for the Southern Region

The RSES was prepared by the Southern Regional Assembly to provide a long-term strategic development framework for the future physical, economic and social development in the southern region. The strategy contains a policy objective for noise under Regional Policy Objective 131 which echoes the National Planning Framework Objective 65:

"It is an objective to promote the pro-active management of noise where it is likely to have significant adverse impacts on health and the environment. It is also an objective to support the aims of the

Environmental Noise Regulations through national planning guidance and Noise Action Plans for major urban centres as considered appropriate."

The RSES supports the development of strategic noise mapping and pro-active management of noise through noise action planning, including highlighting the importance of quiet areas.

3.3 Local Noise Management Policy and Guidance, and Infrastructure Projects

The noise management policy and guidance, and relevant plans, projects and studies within each of the APA are described in **Section 10** and **Section 11**.

4 Responsible Authorities for Action Planning

4.1 Action Planning Authorities

The roles and responsibilities of the APAs and the NMBs as set out by the Regulations and the consultation and collaboration necessary between all parties to address noise from each noise source mapped and ensure the successful implementation of the Cork Agglomeration Noise Action Plan are summarised in **Table 5**.

Table 5: Roles and Responsibilities

Organisation	Strategic Noise-Mapping Body (NMB) Responsibility	Noise Action Plan Preparation - Responsibility	Noise Action Plan Implementation - Responsibility
Cork City Council (CCiC) **Cork County Council (CCC)**	NMB responsible for making and approving strategic noise maps for the agglomeration of Cork	APA responsible for making and approving action plans, in consultation with NMBs, for the agglomeration of Cork.	Detailed evaluation of Priority Important Areas, in consultation with NMBs, including identification of noise mitigation measures and implementation of those measures within the Local Authority's areas of competence and responsibility, subject to resources and budget.
Transport Infrastructure Ireland (TII)	NMB responsible for making and approving strategic noise maps for major roads designated as national roads	Consultee during action planning, with consideration of issues resulting from the strategic noise maps within their area of responsibility including identification of priority important areas to be included within the Noise Action Plan	Consult, engage and collaborate with the APAs to identify and agree noise mitigation measures for locations within TII's areas of competence and responsibility and implementation of same subject to resources and budget.
Irish Rail	NMB responsible for making and approving strategic noise maps for major railways	Consultee during action planning, with consideration of issues resulting from the strategic noise maps within their area of responsibility including identification of priority important areas to be included within the Noise Action Plan	Consult, engage and collaborate with the APAs to identify and agree noise mitigation measures for areas within Irish Rail's areas of competence and responsibility and implementation of same subject to resources and budget.

5 Summary of the Results of the Noise Mapping Process

5.1 CNOSSOS-EU:2020

The European Commission (EC) published Directive 2015/996[23] established common noise assessment methods according to the END. It replaced Annex II of the END, removing the Interim Methods and now requiring that Member States apply the Common Noise Assessment Methods for Europe (CNOSSOS-EU) for the noise modelling of road, rail, aircraft and industrial sources.

The use of CNOSSOS-EU has since been transposed into Irish Law via the European Communities (Environmental Noise) (Amendment) Regulations 2021 (S.I. 663/2021) and has been used to produce the strategic noise maps and to calculate the noise exposure statistics and harmful effects (see **Section 5.2**) for roads, rail and industry, where applicable.

Two result formats have been prepared for the noise indicators specified in the Regulations, L_{den} and L_{night}:

- 10m grid format – where the model outputs a result every 10m in a uniform grid. These results are used to produce the strategic noise maps; and
- Façade receiver format - where the model outputs a result at receiver points digitised at the façades of residential, school and hospital buildings. These results are used to calculate the exposure statistics and harmful effects (see **Section 5.2**).

The model was configured to output results down to a minimum of 20 dB L_{den} and L_{night}, which goes beyond the reporting requirements of the END (55 dB L_{den} and 50 dB L_{night}) and the levels required for the calculation of harmful effects.

5.2 Agglomeration Noise Exposure and Harmful Effects

5.2.1 Noise Exposure Assessment

The first three rounds of strategic noise maps have been developed using computation methods set out in Environmental Noise Regulations 2006 (S.I. 140/2006). For Round 4, Member States are required to use the Common Noise Assessment Methods for Europe (CNOSSOS-EU). This change in methodology makes a direct comparison of the Round 4 noise exposure statistics with the previous three rounds methodologically complex. The Round 4 noise exposure statistics for the Agglomeration are presented in the following section, and at APA level in **Section 10** and **Section 11**.

Aircraft noise exposure statistics are reported in the Bickerdike Allen Partners (BAP) Strategic Noise Mapping report for Cork Airport ('Strategic Noise Mapping Report for Submission to the EPA under

[23] https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32015L0996&from=PT [Accessed March 2024]

The European Communities (Environmental Noise) Regulations 2018 Cork Airport 2021', Ref: A11469_01_RP001_1.0, Dated 1 February 2023).

Exposure statistics are assessed independently for each noise source, and are summarised for the noise metrics across the noise exposure bands defined in the Regulations. The population exposure statistics have been rounded to the nearest 100 as required by the Regulations.

Table 6: Number of People in Dwellings – L_{den}

Noise Exposure (dB L_{den})	All Roads	All Railway	All Industry	All Airports
55-59	50,200	400	1,900	0
60-64	32,800	300	600	0
65-69	10,400	400	200	0
70-74	1,700	100	0	0
>=75	300	0	0	0

*exposure statistics rounded to the nearest 100.

Table 7: Percentage of Total Population Exposed to the Noise Source – L_{den}

Noise Exposure (dB L_{den})	All Roads	All Railway	All Industry	All Airports
55-59	23 %	0 %	1 %	0 %
60-64	15 %	0 %	0 %	0 %
65-69	5 %	0 %	0 %	0 %
70-74	1 %	0 %	0 %	0 %
>=75	0 %	0 %	0 %	0 %

Table 8: Number of School Buildings (& Hospital Buildings) – L_{den}

Noise Exposure (dB L_{den})	All Roads	All Railway	All Industry
55-59	59 (05)	01 (00)	02 (00)
60-64	63 (04)	00 (00)	02 (00)
65-69	16 (04)	00 (00)	00 (00)
70-74	00 (00)	00 (00)	00 (00)
>=75	00 (00)	00 (00)	00 (00)

Table 9: Number of People in Dwellings – L_{night}

Noise Exposure (dB L_{night})	All Roads	All Railway	All Industry	All Airports
50-54	20,800	300	1,600	0
55-59	5,400	300	500	0
60-64	1,900	200	100	0
65-69	400	0	0	0
>=70	0	0	0	0

*exposure statistics rounded to the nearest 100.

Table 10: Percentage of Total Population Exposed to the Noise Source – L_{night}

Noise Exposure (dB L_{night})	All Roads	All Railway	All Industry	All Airports
50-54	10 %	0 %	1 %	0 %
55-59	3 %	0 %	0 %	0 %
60-64	1 %	0 %	0 %	0 %
65-69	0 %	0 %	0 %	0 %
>=70	0 %	0 %	0 %	0 %

Table 11: Number of School Buildings (& Hospital Buildings) – L_{night}

Noise Exposure (dB L_{night})	All Roads	All Railway	All Industry
50-54	42 (04)	00 (00)	04 (00)
55-59	07 (01)	00 (00)	00 (00)
60-64	00 (00)	00 (00)	00 (00)
65-69	00 (00)	00 (00)	00 (00)
>=70	00 (00)	00 (00)	00 (00)

5.2.2 Harmful Effects Assessment

The European Communities (Environmental Noise) (Amendment) Regulations 2021 (S.I. 663/2021) sets out the assessment methods for harmful effects, which considers ischemic heart disease (IHD), high annoyance (HA) and high sleep disturbance (HSD).

Ischemic heart disease is calculated for road traffic noise only, whereas high annoyance and high sleep disturbance are calculated for road traffic, railway and aircraft noise.

The exposure of harmful effect is assessed independently for each source. Where the same people are simultaneously exposed to different noise sources, the harmful effects may not, in general, be cumulated, however can be compared to identify proportional significance.

The method determines harmful effects on population within an assessment area, rather than an accurate assessment of possible health effects at any specific building or location.

Whilst the Regulations set out the equations to be used for calculating harmful effects, it does not define noise thresholds above which health effects should be calculated for, nor does it stipulate the assessment bands that should be used (0.1 dB, 1 dB or 5 dB), these have been provided by the EPA, and are as follows:

- The calculations for harmful effects should be undertaken in 1 dB assessment bands
- The assessment of harmful effects should be undertaken above the following thresholds:
    - **Road traffic noise:** 53 dB L_{den}, 45 dB L_{night}
    - **Railway noise:** 54 dB L_{den}, 44 dB L_{night}
    - **Aircraft noise:** 45 dB L_{den}, 40 dB L_{night}

Harmful effects have therefore been calculated from population exposure statistics in 1 dB bands for the noise level thresholds set out above using the calculation methodology set out in the Regulations.

Table 12 presents the calculated harmful effects in the case of road traffic noise for the Agglomeration, and **Table 13** presents the calculated harmful effects railway noise.

As aircraft noise thresholds are not exceeded within the Agglomeration, there is no associated assessment of harmful effects.

Table 12: Agglomeration - Health Effects (Road Noise)

Harmful Effect	Number of People		% of Population*	
	All Sources	Major Sources	All Sources	Major Sources
Ischemic Heart Disease (IHD)	16.50	7.55	0.01%	0.00%
Highly Annoyed (HA)	17,724.06	8,199.56	8.08%	3.74%
Highly Sleep Disturbed (HSD)	3,382.11	2,075.22	1.54%	0.95%

*Total population for Cork agglomeration = 219,286.82

Table 13: Agglomeration - Harmful Effects (Railway Noise)

Harmful Effect	Number of People		% of Population*	
	All Sources	Major Sources	All Sources	Major Sources
Highly Annoyed (HA)	284.33	N/A	0.13%	N/A
Highly Sleep Disturbed (HSD)	134.07	N/A	0.06%	N/A

*Total population for Cork agglomeration = 219,286.82

5.2.3 Strategic Noise Mapping Figures

The model calculations provide results outputs every 10m, which were used to produce the strategic noise maps.

The strategic noise maps are noise contour maps, a graphical representation illustrating the distribution of noise levels over a geographical area. The colours of the noise exposure bands are indicated in the legend, with darker colours representative of higher noise levels.

The Regulations do not set out noise limits which are permissible or impermissible in relation to environmental noise, however, do set the noise exposure bands to be reported, which are reflected in the strategic noise maps. In the absence of noise limits, it could be assumed that the closer the calculated noise level is to the highest noise exposure band set out in the Regulations the more undesirable it is.

The strategic noise maps are shown in the following figures for the two noise indicators specified in the Regulations, L_{den} and L_{night}.

- Figure 3: Agglomeration – Strategic Noise Map – L_{den} – Road Traffic – All Sources
- Figure 4: Agglomeration – Strategic Noise Map – L_{night} – Road Traffic – All Sources
- Figure 5: Agglomeration – Strategic Noise Map – L_{den} – Railway Traffic – All Sources
- Figure 6: Agglomeration – Strategic Noise Map – L_{night} – Railway Traffic – All Sources
- Figure 7: Agglomeration – Strategic Noise Map – L_{den} – Industry
- Figure 8: Agglomeration – Strategic Noise Map – L_{night} – Industry

5.3 Key Insights from Strategic Noise Mapping

5.3.1 Population Exposure to Noise

The most prevalent noise source within the Cork agglomeration is from road traffic sources, where (rounded to the nearest 100) there is a total of 95,400 people in dwellings exposed to road traffic noise greater than, or equal to, 55 dB L_{den} (in comparison to 1,200 people from railway sources, 2,700 from industry sources and 0 from aircraft sources. This trend is also reflected for the total population exposed to levels greater than, or equal to, 50 dB L_{night}

The percentage of the total population in dwellings within the Cork agglomeration that are exposed to noise levels greater than, or equal to, 55 dB L_{den} from each source are:

- 44% for road traffic source
- 1% for railway sources
- 1% for industrial sources
- 0% for aircraft sources

The percentage of the total population in dwellings within the Cork agglomeration that are exposed to noise levels greater than, or equal to, 50 dB L_{night} from each source are:

- 13% for road traffic source
- less than 1% for railway sources
- 1% for industrial sources
- 0% for aircraft sources

There are no people in dwellings who are exposed to levels equal to or exceeding the highest noise band (greater than, or equal to 75 dB L_{den} and greater than, or equal to 70 dB L_{night}) for railway, industry or airport sources.

5.3.2 Harmful Effects

The calculation of number of people Highly Annoyed indicates that more people are at risk of high annoyance from road traffic noise (17,724.06 people) than from railway sources (284.33 people). This equates to 8.08% of the population at risk of high annoyance from road traffic noise and 0.13% of the population at risk of high annoyance from railway noise

The calculation of number of people Highly Sleep Disturbed indicates that more people are at risk of high sleep disturbance from road traffic noise (3,382.11 people) than from railway sources (134.07 people). This equates to 1.54% of the population at risk of high sleep disturbance from road traffic noise and 0.06% of the population at risk of high sleep disturbance from railway noise

The number of people statistically at risk from ischemic heart disease is only calculated for road traffic noise, therefore a comparison with railway noise cannot be made.

Figure 3: Agglomeration – Strategic Noise Map – L_{den} – Road Traffic – All Sources

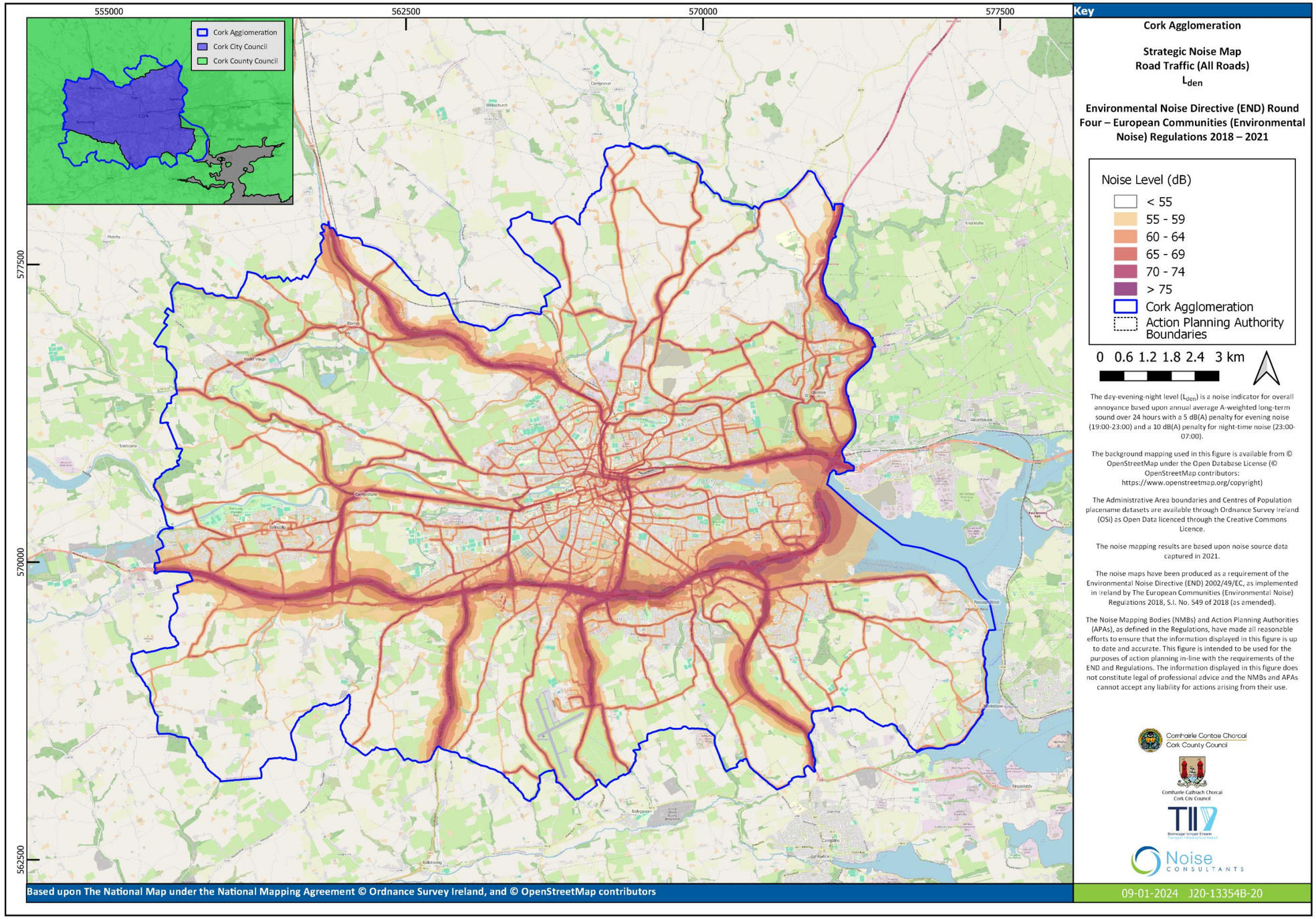


Figure 4: Agglomeration – Strategic Noise Map – L_{night} – Road Traffic – All Sources

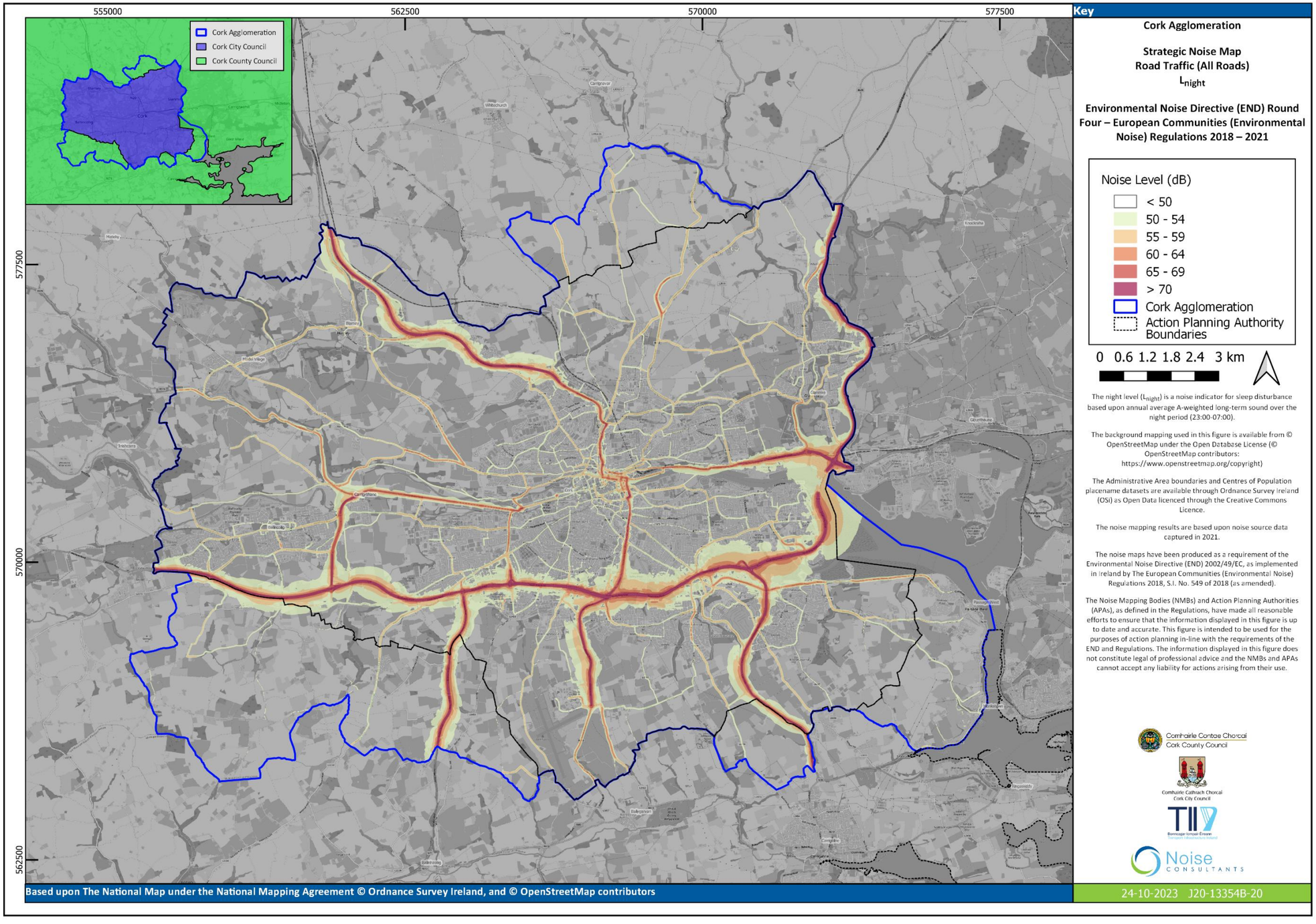


Figure 5: Agglomeration – Strategic Noise Map – L_{den} – Railway Traffic – All Sources

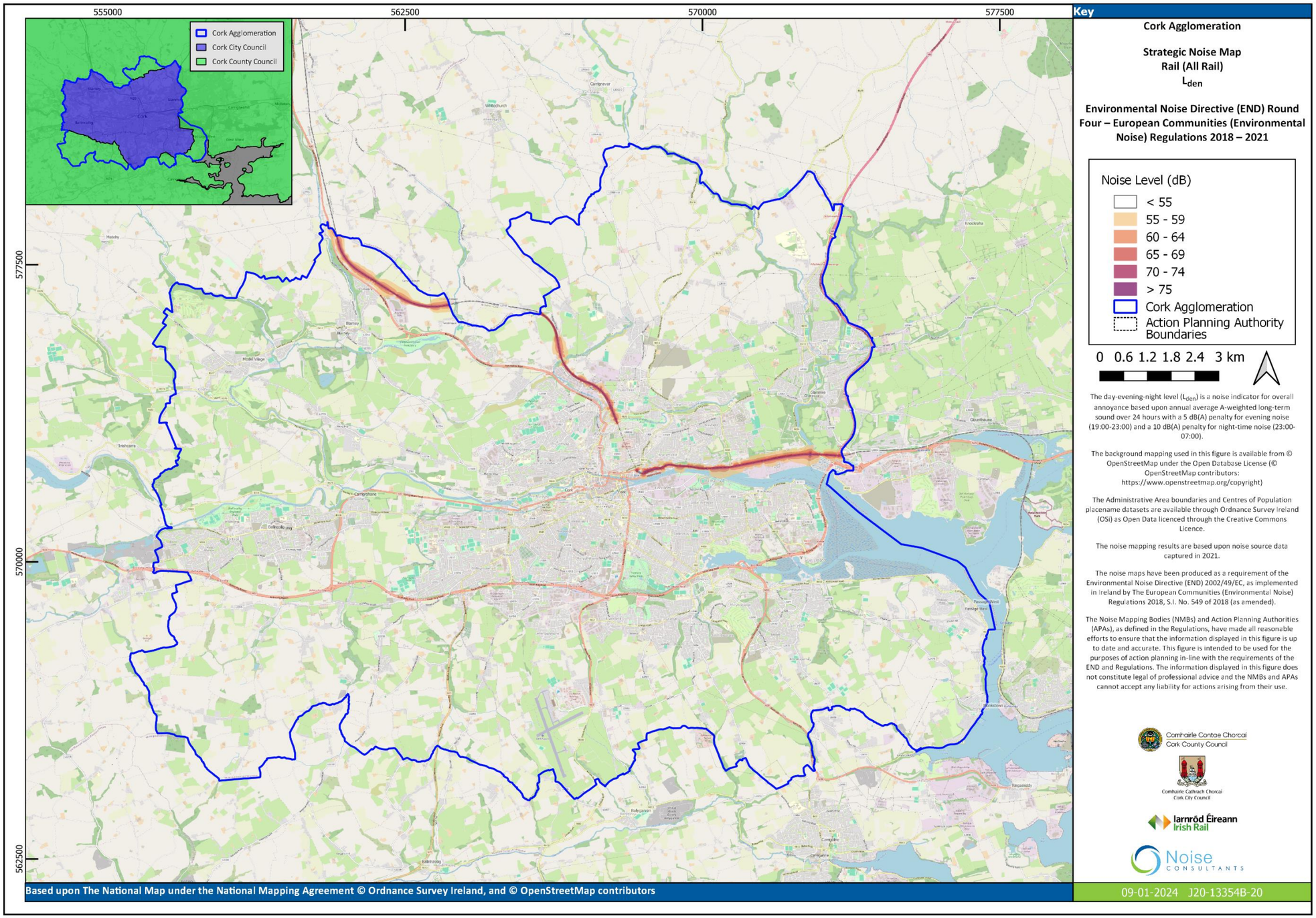


Figure 6: Agglomeration – Strategic Noise Map – L_{night} – Railway Traffic – All Sources

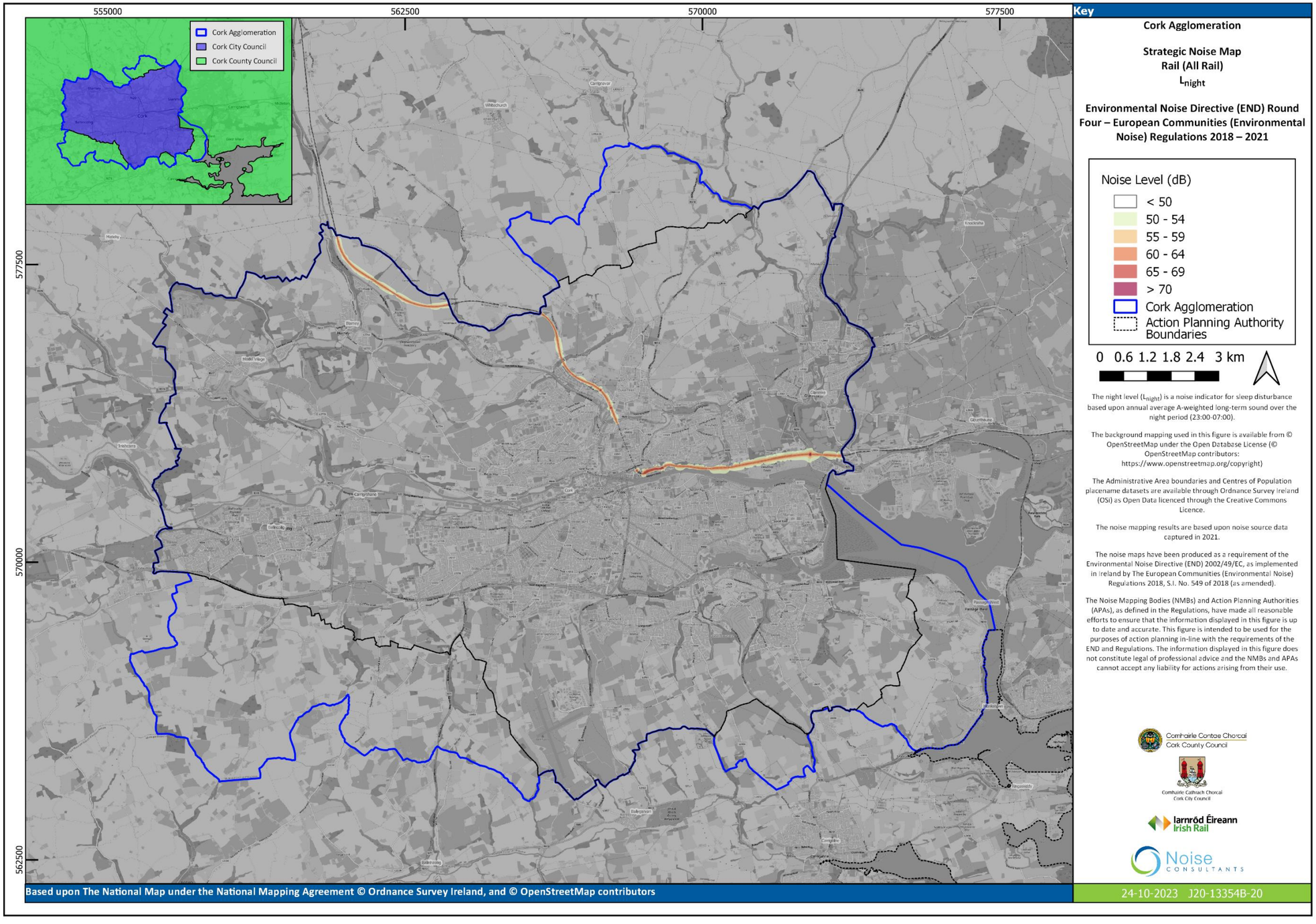


Figure 7: Agglomeration – Strategic Noise Map – L_{den} – Industry

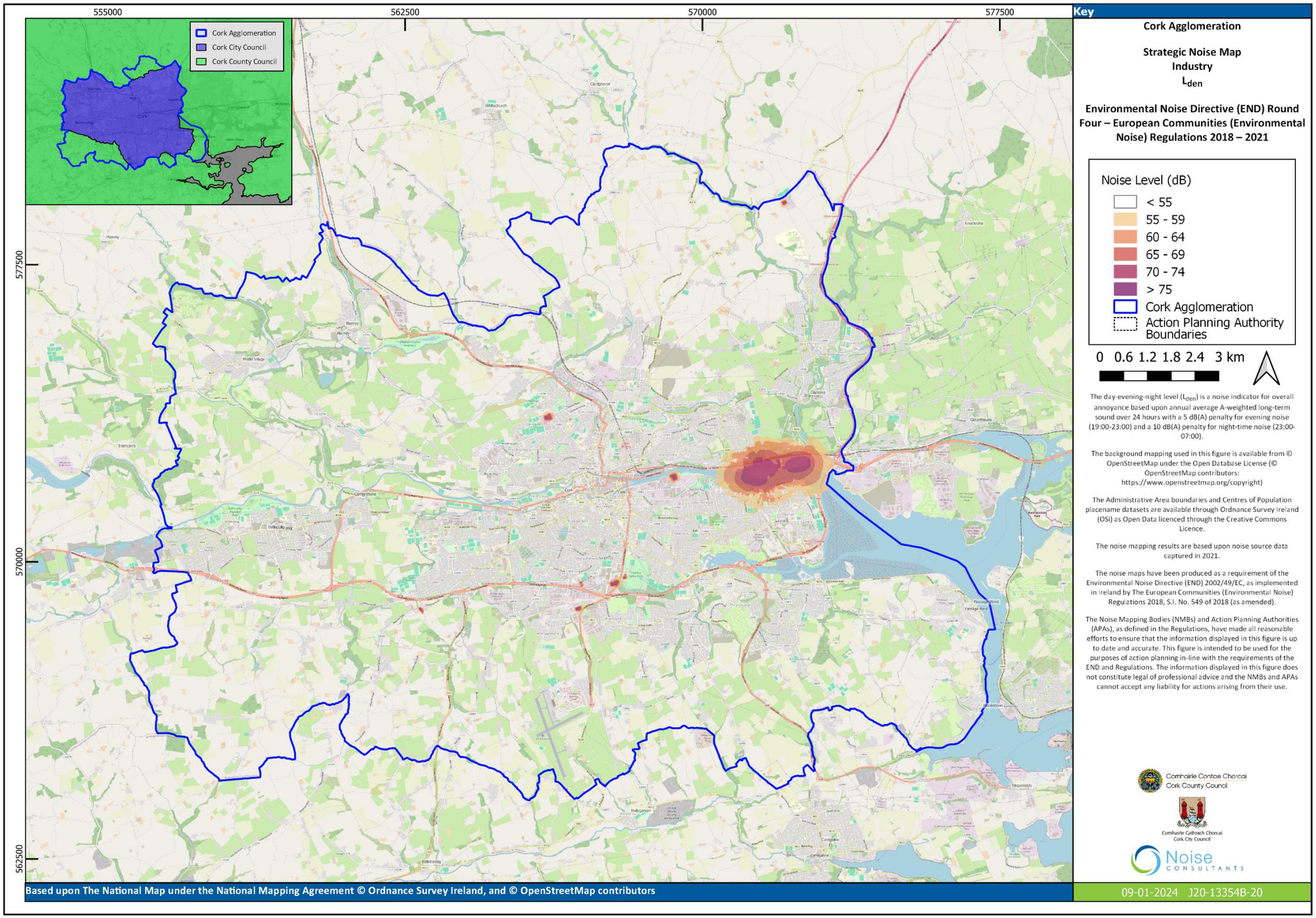
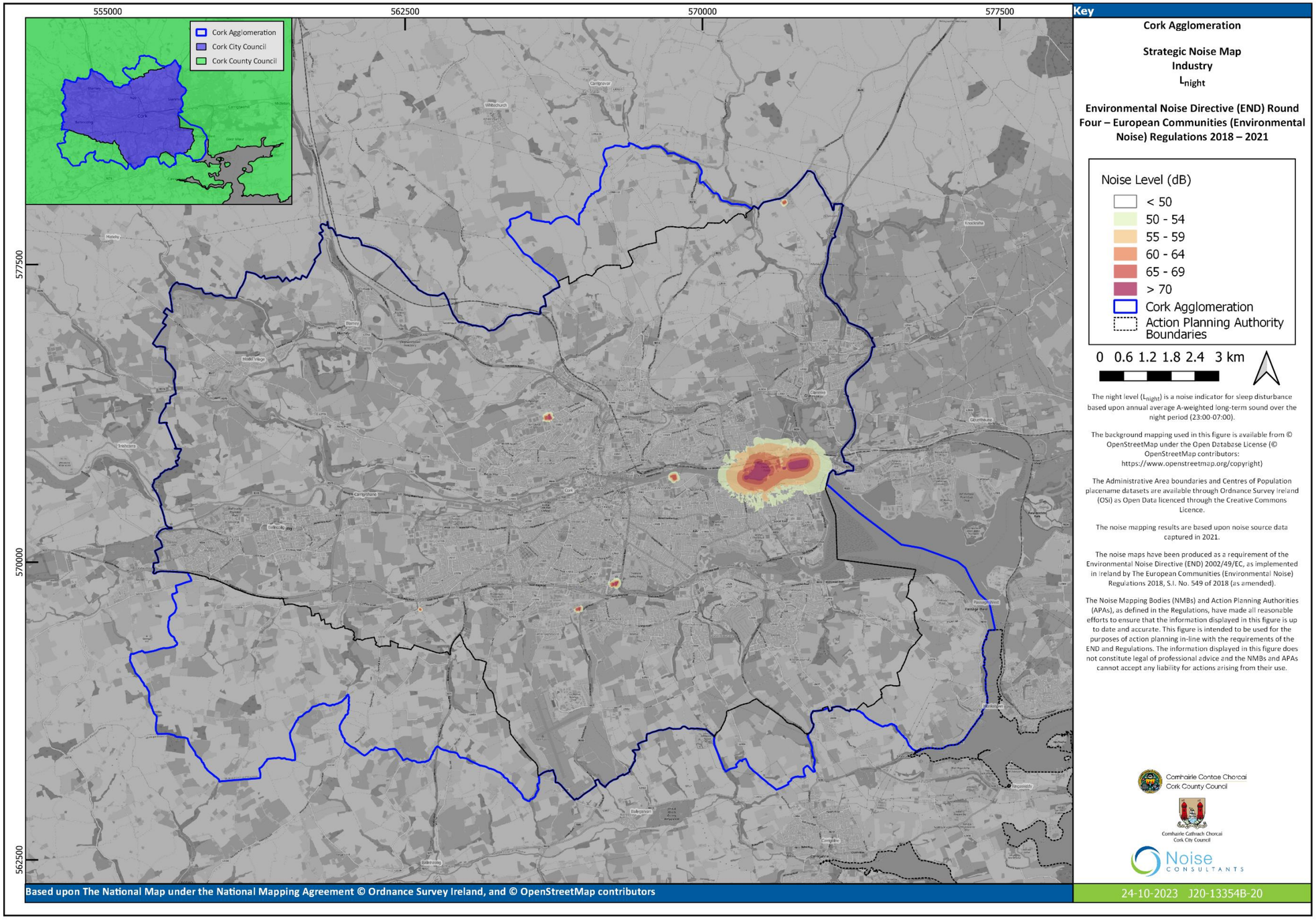


Figure 8: Agglomeration – Strategic Noise Map – L_{night} – Industry



6 Approach to Identification of Areas to be Subject to Noise Management Activities

6.1 Regulatory Background

The Regulations require that APA's address "*priorities*" and "*the most important area or areas*" with a view to identifying "*measures*" that will help "*avoid, prevent or reduce*" the "*harmful effects, including annoyance, due to exposure to environmental noise*".

The EPA Guidance provides further guidance on these concepts, and sets out a recommended approach to identifying priorities:

1. **Important Areas (IAs)** – these are locations exposed to environmental noise which exceed "*any relevant noise limit*" as established by the EPA in their guidance;
2. **Most Important Areas (MIAs)** – these locations are a sub-set of Important Areas where the health effects are highest, typically through a product of noise exposure levels and the number of people highly annoyed; and
3. **Priority Important Areas (PIAs)** – between 5 and 10 Most Important Areas or group of similarly affected Most Important Areas, identified, through a prioritisation process, as those which will be evaluated and addressed during the implementation of the Noise Action Plan.

6.2 Scope

The Important Areas, Most Important Areas and Priority Important Areas within the Agglomeration have been identified with respect to noise from roads and railways.

For the identification of areas to be subject to noise management activities due to noise from airports and industrial activities, reference is made to the roles of the associated authorities relevant to the Agglomeration, as summarised below.

6.2.1 Noise from Airports

Cork Airport is not a major airport (i.e. a civil airport with more than 50,000 annual movements) under the Regulations, and does not have a designated competent authority for the purpose of airport noise regulation.

However, it is assumed that the general approach to noise management in place at Dublin Airport may be viewed as national best practice and provide a suitable framework for the management of noise at Cork Airport, where necessary.

The ICAO *Balanced Approach to Aircraft Noise Management*[24] is recognised as international best practice for the management of aircraft noise in the vicinity of airports, and therefore would form a suitable framework for developing an approach to noise management at the airport.

6.2.2 Noise from Industrial Activities, including Ports

The EPA holds the authority to grant licenses for specified industrial establishments in accordance with the IED/IPPC Regulations. In cases where strategic noise mapping reveals a potential need for a noise reduction from industrial areas, it is recommended that the APAs consult and collaborate with the EPA Office of Environmental Enforcement concerning existing license conditions and the facility's present noise management strategies.

Maps showing noise exposure for industry sites modelled are included in **Section 10** - **Section 11** of this Noise Action Plan for each APA, where appropriate, for information purposes and to support the management of noise for these sites where queries may arise. No Most Important Areas and Priority Important Areas have been identified with respect to industry noise as there is no commonly accepted methodology that permits the determination of health effects associated with industry, and furthermore the exposure statistics are lower than for rail or road sources.

6.3 Overview of Process

The process of identifying Important Areas, Most Important Areas and Priority Important Areas within the Agglomeration is Stage 1 of a two-stage process for the determination and implementation of noise management actions, as detailed within the Noise Action Plan.

Stage 1 includes using the results of the strategic noise maps to identify the number of people and noise sensitive properties exposed to levels above the limits set by the EPA Guidance which are in line with the 2018 WHO *Environmental Noise Guidelines for the European Region* (WHO ENG 2018)[25]. These limits for road and rail traffic are set out in **Section 6.4** below.

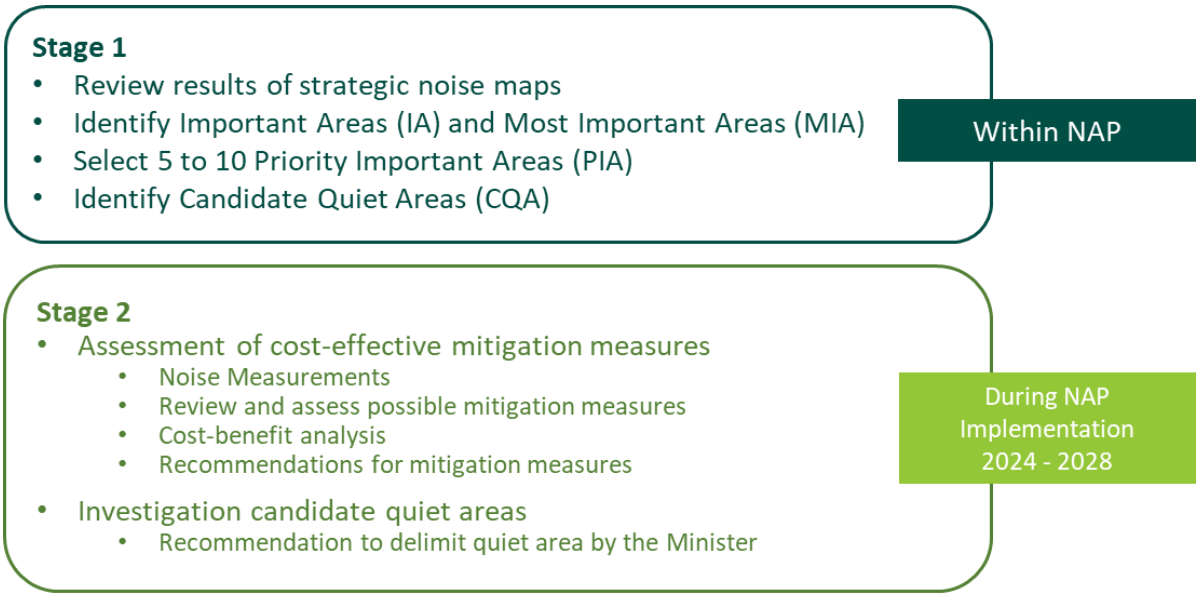
The findings of the Important Area process are then used to inform an automated process within Geographic Information System (GIS) software to generate raster heatmaps of the relative number of people highly annoyed due to noise in a given area, referred to as Most Important Areas. The APA, in consultation with the NMBs, prioritise the Most Important Areas to identify those which are to be addressed during the implementation of the Noise Action Plan, referred to as Priority Important Areas.

[24] Guidance on the Balanced Approach to Aircraft Noise Management, Doc 9829 AN/451, ICAO 2008. Available at: https://www.icao.int/environmental-protection/pages/noise.aspx [accessed December 2023]
[25] Environmental noise guidelines for the European Region, WHO 2019. Available at: https://www.who.int/europe/publications/i/item/9789289053563 [Accessed October 2023]

Stage 2 of the process takes place during the implementation of the Noise Action Plan, and focuses on undertaking an assessment of each of the identified Priority Important Areas including identification of appropriate noise mitigation measures.

An overview of the two-stage process is set out diagrammatically in **Figure 9**.

Figure 9: Overview of Recommended Approach to Determine Actions to be Undertaken, and Quiet Areas to Delimit



6.4 Important Areas (IAs)

The EPA Guidance references the WHO ENG 2018 guidelines in setting the "*noise limit value*" for identifying Important Areas, namely:

- Railway noise: 54 dB L_{den} and 44 dB L_{night}; and
- Road traffic noise: 53 dB L_{den} and 45 dB L_{night}.

The noise limit values are relevant for the reduction of harmful effects from environmental noise on human health, and a summary of the number of people and number of noise sensitive receptors in the Agglomeration which experience environmental noise above these levels is summarised in **Table 14** and **Table 15**, respectively.

Table 14: Important Areas - Number of People in Dwellings

Noise Source	Noise Limit Value	Number of People in Dwellings Exposed to Level Above Noise Limit Value
Road Traffic	53 dB L_{den}	118,741
	45 dB L_{night}	77,735
Railway	54 dB L_{den}	1,266
	44 dB L_{night}	1,326

Table 15: Important Areas - Number of School Buildings (& Hospital Buildings)

Noise Source	Noise Limit Value	Number of People in Dwellings Exposed to Level Above Noise Limit Value
Road Traffic	53 dB L_{den}	167(13)
	45 dB L_{night}	113(11)
Railway	54 dB L_{den}	1(0)
	44 dB L_{night}	1(0)

6.5 Most Important Areas (MIAs)

The results of the Important Areas have been used to inform the identification of Most Important Areas. The process of identifying the Most Important Areas is set out in the EPA Guidance and is an automated process within GIS software which uses the results of the strategic noise maps assigned to population statistics in areas with exposures greater than the Important Area noise limit values.

The assignment of population to the calculated noise levels is set out within Annex II of the END (CNOSSOS-EU) and provides building level statistics across the Agglomeration. Following the method in Annex II of the END, the harmful effects due to noise are statistically assessed and used to generate a gridded "heatmap" of values which represent (approximately) the number of people highly annoyed per 100m^2, which is in-line with the approach set out in the EPA Guidance.

Using the heatmap, the areas of higher concentrations of people highly annoyed (HA) are identified and delineated as a digital polygon. The EPA Guidance sets a density criterion of 15 or more people per 100m^2 as being the most appropriate for Most Important Areas in main urban areas, with lower criterions of 10 and 7.5 people per 100m^2 appropriate on the edge of urban or in rural areas.

It is crucial to emphasize that the approach to identifying Most Important Areas is of a statistical nature and pertains to the entire population encompassed by the noise maps. It should not be construed as a precise assessment of harmful effects for specific buildings, nor are the extents of the Most Important Areas definitive. Instead, they are indicative in identifying areas with a relatively high number of people highly annoyed due to noise.

6.5.1 Most Important Areas Summary

A summary of the Most Important Areas identified within the Agglomeration using the EPA Guidance density criterion of 15 or more people per 100m^2 is given in **Table 16**.

Using this criterion, no Most Important Areas were identified within the Cork County Council area, with 60 identified within Cork City Council area. It should also be noted that no Most Important Areas were identified within the Cork County Council area using the lower criterions of 10 or 7.5 people per 100m^2. The Most Important Areas within the Agglomeration are shown in **Table 16**.

Table 16: Agglomeration – Most Important Areas (MIAs) Summary

APA	No. of MIA*				Harmful Effects Statistics**		
	All Sources	Road	Rail	Total Population	HA	HSD	IHD
CCiC	60	60	0	12,940	2,233	543	2
CCC***	0	0	0	0	0	0	0
Agglomeration	**60**	**60**	**0**	**12,940**	**2,233**	**543**	**2**

*The total population inside all Most Important Areas (MIA)

** Total harmful effects inside all MIA (the harmful effects presented in this table are determined from a statistical approach across the whole population covered by the noise maps, and should not be considered to be an accurate assessment of the possible health effects at any specific building)

*** No MIA were identified in the Cork County Council administrative area

6.6 Priority Important Areas (PIAs)

The Most Important Areas established within the Agglomeration are summarised in **Table 16**. Given the number of Most Important Areas identified, a process has been undertaken to identify which should be considered a priority (Priority Important Area), for which an assessment of noise mitigation measures will be undertaken within the life cycle of the Noise Action Plan and those deemed justified implemented subject to funding and resources.

The identification of the Priority Important Areas has been undertaken by the APA in consultation with NMBs and relevant stakeholders. The EPA Guidance recommends that between 5 and 10 Priority Important Areas are selected.

To inform APA decisions on the selection of Priority Important Areas, consistent with the requirements of the EPA Guidance, associated statistical information has been developed for each Most Important Area, including:

- Noise source identifying the Most Important Area, i.e., railways or roads
- Area (m^2)
- Total population
- Number of people highly annoyed (HA)
- Number of people highly sleep disturbed (HSD)
- Population increased risk of ischemic heart disease (IHD)
- Number of dwellings
- Population noise exposure above END threshold values:
    - road traffic noise exposure in 5 dB bands (L_{den} 55 → 75 dB, L_{night} 50 → 70 dB)
    - railway noise exposure in 5 dB bands (L_{den} 55 → 75 dB, L_{night} 50 → 70 dB)

The Priority Important Areas are summarised in **Table 15,** and were selected by the APAs based upon those Most Important Area or groups of Most Important Areas with the greatest number of people and consideration of other factors such as planned road maintenance works and traffic plans and projects.

The Agglomeration Priority Important Areas selected cover, statistically, 1,545 people highly annoyed (HA), 357 highly sleep disturbed (HSD) and two people at increased risk of ischemic heart disease (IHD), with the potential to benefit from the noise management measures considered.

Table 17: Agglomeration – Priority Important Areas (PIA) Summary

	No. of PIA				Harmful Effects Statistics**		
	All Sources	Road	Rail	Total Population*	HA	HSD	IHD
CCiC	9	9	0	9,218	1,545	375	2
CCC***	0	0	0	0	0	0	0
Agglomeration	**9**	**9**	**0**	**9,218**	**1,545**	**375**	**2**

*The total population inside all Most Important Areas (MIA) associated with the Priority Important Areas (PIA)

** Total harmful effects inside all MIA associated with the PIA (the harmful effects presented in this table are determined from a statistical approach across the whole population covered by the noise maps, and should not be considered to be an accurate assessment of the possible health effects at any specific building)

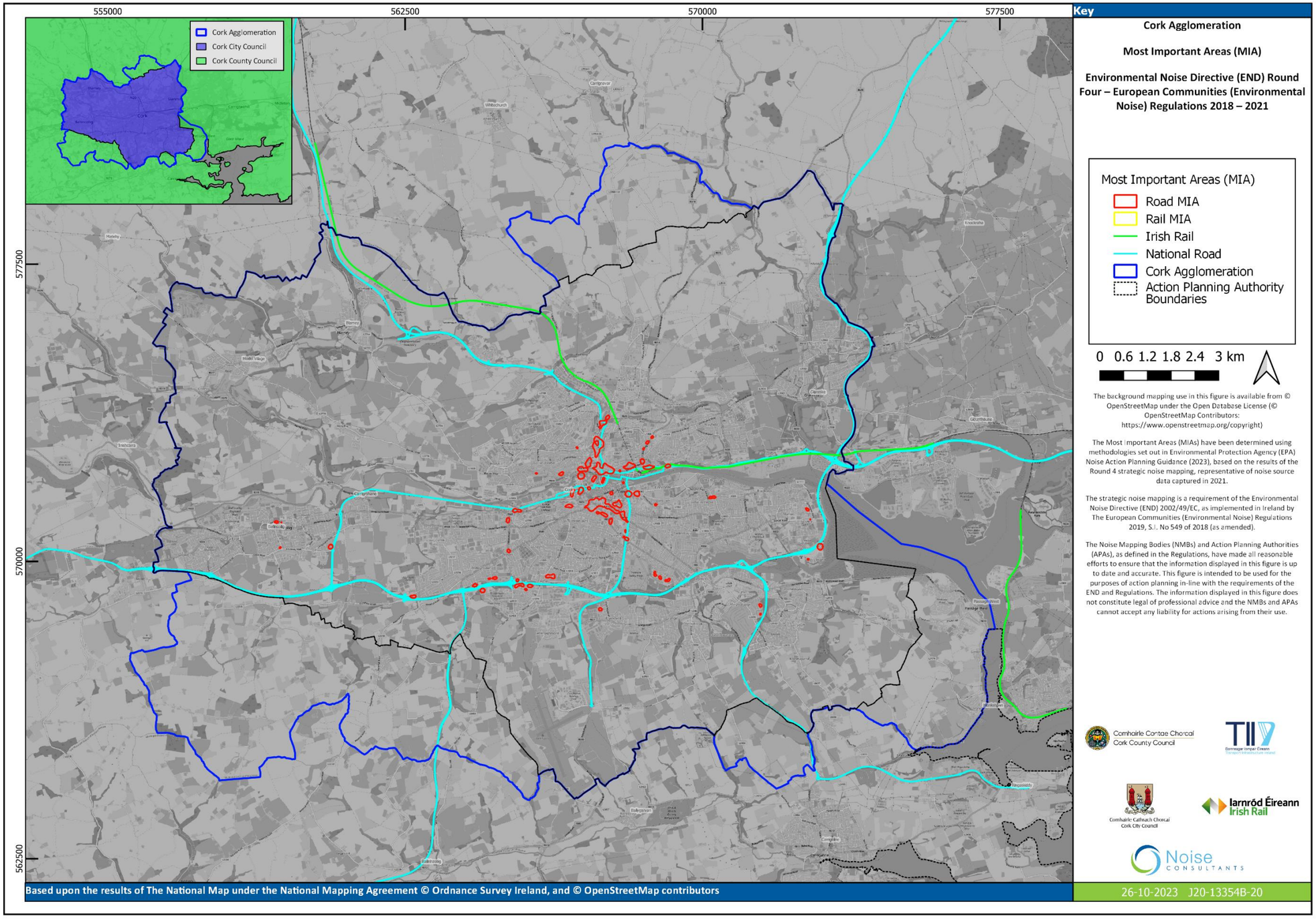
*** No MIA were identified in the Cork County Council administrative area, therefore it follows that no PIA are identified either

Figure 10 shows the Most Important Areas in Cork City Council. Figures and statistics for the Most Important Areas and selected Priority Important Areas specific to Cork City Council are set out in **Section 10**.

As no Most Important Areas were identified within the Cork County Council area; no corresponding Priority Important Areas have been identified. This is discussed further in **Section 11**.

Noise management measures to be considered in the assessment of noise mitigation for the identified Priority Important Areas are set out in **Section 8**. The progress of investigating these measures will be reported to the EPA throughout the life cycle of the Noise Action Plan.

Figure 10: Agglomeration – Most Important Areas (MIAs)



7 Approach to Identification of Areas to be Preserved for Environmental Noise Quality

7.1 Regulatory Background

The Fourth Schedule of the European Communities (Environmental Noise) Regulations 2018 (S.I. 549/2018) requires APAs to set out actions in relation to measures to preserve Quiet Areas.

At present there is no universally accepted definition by EU Member States[26] of what constitutes a Quiet Area; however, they are regarded as areas where environmental noise levels are deemed to be good and therefore protection should be considered in the context of new development.

The process of delimiting an area as a 'Quiet Area' is informed by an investigation by the APA. For those areas where investigation outcomes identify a benefit of delimiting it as a Quiet Area, the evidence is put forward to the EPA for consideration in consultation with the Minister. Successful applications result in a delimitation of the Quiet Area.

7.1.1 Existing Quiet Areas

There are no existing Quiet Areas delimited within the Agglomeration.

7.2 Overview of Process

The process of determining which areas should be proposed for delimiting as Quiet Areas is a two Stage process. Stage 1 involves identifying Potential Candidate Quiet Areas and Candidate Quiet Areas using available data sets for green and blue spaces and the results of the strategic noise mapping. Stage 1 is detailed within this Noise Action Plan, and results in Candidate Quiet Areas for inclusion in Stage 2.

For Stage 2, the Candidate Quiet Areas will be the subject of investigations by the APAs during the implementation of the Noise Action Plan. The evidence captured from these investigations will be used to inform recommendations for areas being delimited as a Quiet Area by the Minster.

The subsequent sections provide an overview of the process proposed by the EPA Guidance which has been used to identify Potential Candidate Quiet Areas and Candidate Quiet Areas, as well as that which may be used to confirm Quiet Areas.

[26] European Parliament, Towards a comprehensive noise strategy, Directorate General for Internal Policies, Policy Department A: Economic and Scientific Policy, 2012

7.3 Stage 1: Identification of Candidate Quiet Areas

7.3.1 Potential Candidate Quiet Areas (PCQAs)

EU Member States have adopted several methods for defining Quiet Areas within agglomerations[27], including, but not limited to:

- Noise related criteria, based on the results of the strategic noise mapping or measurements;
- Land-use;
- Local amenity value;
- Accessibility;
- User and visitor experience, including soundwalks; and
- Stakeholder engagement, including workshops.

In acknowledgement of the differing approaches in the identification of Quiet Areas across Member States, the identification and evaluation of Quiet Areas in Ireland have been shaped by the national policy approach, definitions, and EPA research.

The EPA Research Program is a Government of Ireland initiative funded by the Department of the Environment, Climate and Communications (DECC), with aims of improving the health and wellbeing of the Irish population. The EPA Research identified evidence for direct positive relationships between the presence of green and blue spaces with health indicators including self-reported health, mortality and disability.

The EPA Noise Action Plan Guidance provides a list of primary and secondary public open spaces which could be considered as suitable 'green spaces' in the context of the identification of Quiet Areas. These public open spaces include: recreational areas; playing fields; playgrounds; public parks and gardens; beaches; nature reserves; cemeteries; riverbanks; canals, places of worship; hospitals, including nursing and convalescence homes; educational institutions; and childcare/crèche facilities. These green spaces are referred to as Potential Candidate Quiet Areas.

The identification of Potential Candidate Quiet Areas in the Agglomeration has involved consideration of the following spatial data sources: Local Authority datasets; National Land Cover Map for Ireland, 2022[28]; OSi Prime2 data; Corine Land Cover and Land Use Data 2020; and Urban Atlas 2018.

For the purpose of this, Noise Action Plan, Potential Candidate Quiet Areas are identified as primarily major parks and gardens within the Agglomeration with an area greater than 1 hectare (area has been rounded to the nearest 1 hectare), and considered to have a higher potential of significant

[27] European Environment Agency, Good practice guide on quiet areas, EEA Technical report, No 4/ 2014
[28] Available at: https://www.epa.ie/our-services/monitoring--assessment/assessment/mapping/national-land-cover-map/ [Accessed October 2023]

community benefit through Quiet Area delimitation. A summary of these areas is set out in **Table 18**, and shown in **Figure 12**.

Table 18: Agglomeration – PCQA Summary

Description	Cork City Council	Cork County Council
No. of PCQAs	70	0

The Potential Candidate Quiet Areas summarised in **Table 18** are evaluated to identify whether they currently have low levels of environmental noise as indicated by the strategic noise mapping, or whether they have levels of environmental noise which are low in comparison to the levels experienced by those living nearby.

For the evaluation, the $L_{Aeq,16hr}$ noise metric has been determined as a 10m grid model output for all noise sources within the scope of the Noise Action Plan (road traffic, rail traffic, airport and industrial activity sites). A 10m grid of the maximum noise contribution of any of the noise sources ('max noise grid') is used to identify areas of low noise, and the median noise level of the area.

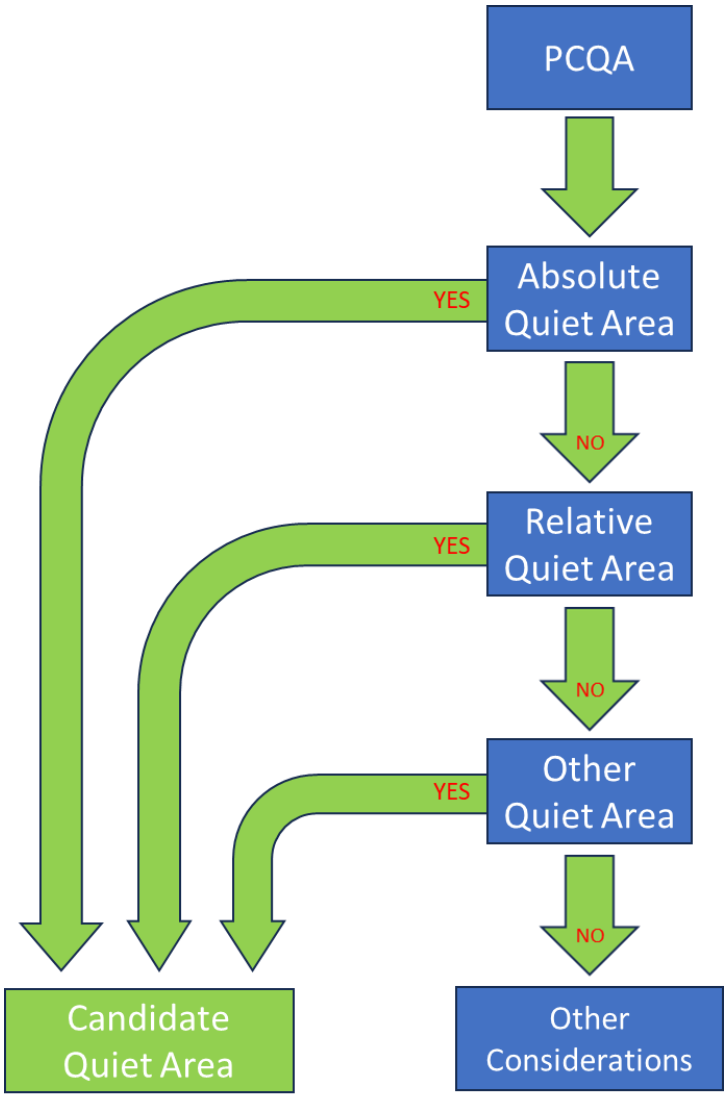
The evaluation, informed by the max noise grid, allows Potential Candidate Quiet Areas to be described in the following three categories:

- **Absolute quiet areas**: where environmental noise levels are low (median noise level of a Potential Candidate Quiet Area is less than 50 dB $L_{Aeq,16hr}$) and should be preserved;
- **Relatively quiet areas**: where environmental noise levels are relatively low in comparison to community noise exposures (25% of population within 1000m of Potential Candidate Quiet Areas are exposed to noise 10 dB above the median noise level of the Potential Candidate Quiet Area); and
- **Other quiet areas**: in cases where environmental noise levels, although low, do not meet either of the above Candidate Quiet Area categories, but the Potential Candidate Quiet Area is deemed by the APA as an area of high community value.

An automated process within GIS software has been applied to evaluate the Potential Candidate Quiet Areas summarised in **Table 18** to determine whether they meet with the 'absolute' or 'relative' Candidate Quiet Area criteria.

The Candidate Quiet Area process is shown diagrammatically in **Figure 11**, and described in the following sections.

Figure 11: Candidate Quiet Area Process



7.3.2 Candidate Quiet Areas (CQAs)

A summary of those Potential Candidate Quiet Areas (PCQAs) which meet the absolute, relative and other Candidate Quiet Area criteria within the Agglomeration, as set out above is given in **Table 19**. The Candidate Quiet Areas are also shown in **Figure 12**. There are no Candidate Quiet Areas in the Cork County Council area of the Agglomeration.

Table 19: Numbers of Candidate Quiet Areas (CQAs) and Candidate Quiet Areas (CQAs) in Each Category

Description	Cork City Council (CCiC)	Cork County Council (CCC)
Total PCQAs Considered	69	0
	CQAs Identified	
Absolute CQA	11	0
Relative CQA	3	0
Other CQA	4	0
Total	**18**	**0**

7.4 Stage 2: Investigation of Candidate Quiet Areas

The evaluation outputs summarised in Table 19 as used by the APA to identify those areas ('Candidate Quiet Areas') which will be subject to an investigation during the implementation of the Noise Action Plan to inform an understanding of the benefit of delimiting as a Quiet Area.

The Stage 2 investigation will be informed by statistical, quantitative and qualitative information, such as:

- Population within 1,000m;
- Area (m^2);
- Area (m^2), and %area <45 dB $L_{Aeq,16hr}$[29];
- Stakeholder engagement;
- Sound pressure measurements;
- Visitor experience;
- Expert assessments; and
- Other local community evaluation criteria.

For each of the areas listed in **Table 19** the aspects that can be determined from the strategic noise mapping (area (m^2), population within 1,000m, median noise level, area of Candidate Noise Area with a noise level less than 45 dB $L_{Aeq, 16hr}$, and the Candidate Quiet Area category) are included in **Section 10** and **Section 11**.

For aspects that cannot be determined from strategic noise mapping (sound pressure measurements, visitor experience, expert assessment, and other local community evaluation criteria), the APA will

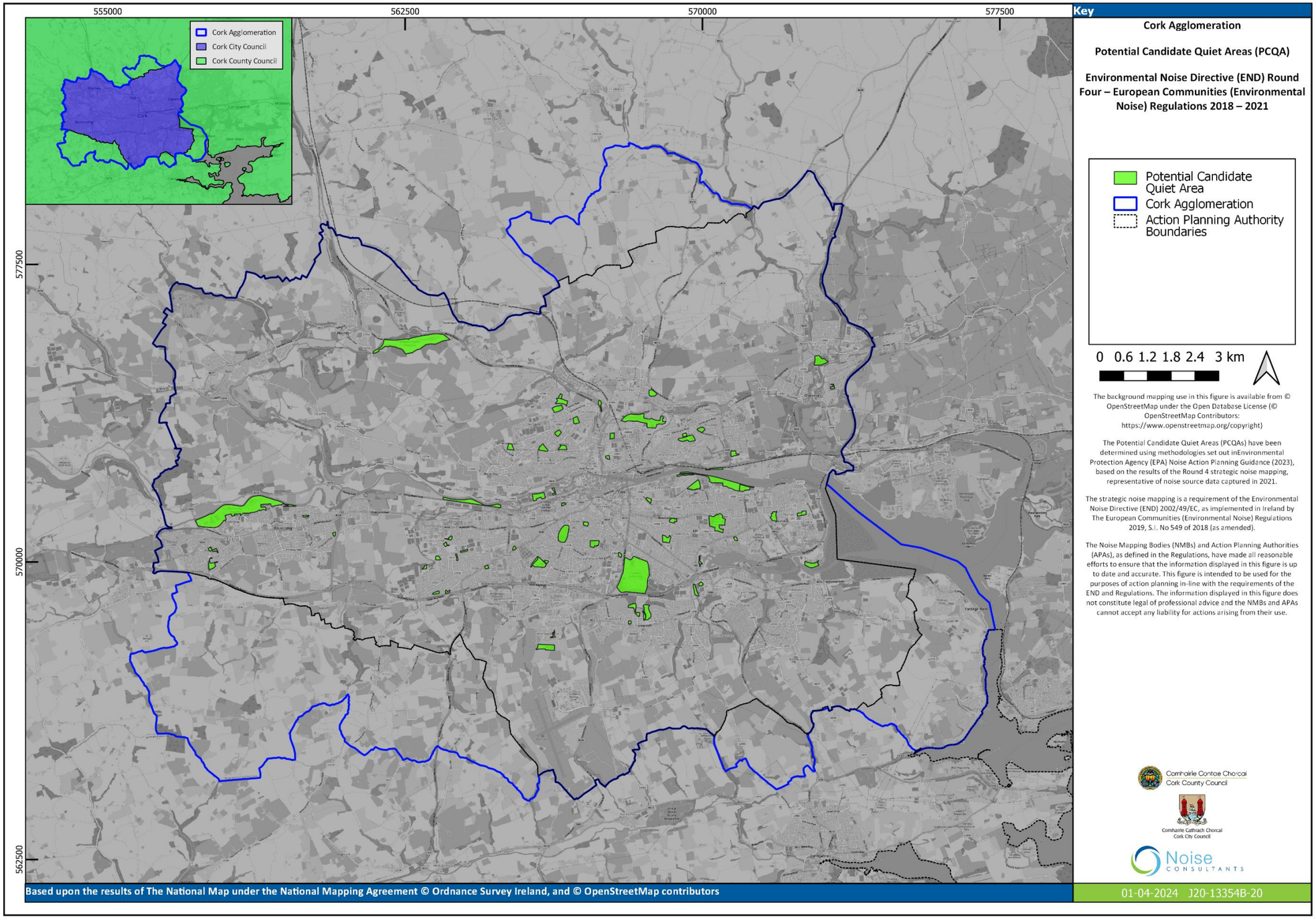
[29] Sound Pressure Level below which *'100% of visitor perceived noise quality as good'*. European Environment Agency, Quiet areas in Europe, EEA Technical report, No 14/ 2016, Table 3.2

undertake assessments during the implementation of the Noise Action Plan. Examples of assessments include evaluations of soundscape[30] through organised soundwalks[31], or promote the use of the Hush City[32] mobile app.

Where an appropriate benefit is determined, the outcomes of the Candidate Quiet Area investigation(s) would be forwarded to the EPA for consideration in consultation with the Minister, with successful applications resulting in a delimitation of the Quiet Area. Any investigation into Candidate Quiet Areas during the implementation of the Noise Action Plan will be subject to available funding and resources.

[30] See ISO 12913 Acoustics – Soundscape series of standards.
[31] *A citizen science and soundscape approach to the investigation of quiet areas for Limerick City*, S. Jennings et al., Forum Acusticum 2023.
[32] Available at: https://map.opensourcesoundscapes.org/view-area [Accessed March 2024]

Figure 12: Cork City Council – Potential Candidate Quiet Areas



7.5 Other Considerations

A desirable outcome of the Regulations is for further increases in environmental noise to be prevented, where practicable, to support the objectives of sustainable development.

Therefore, it is for responsible authorities, including Local Authorities and An Bord Pleanála, to consider appropriate noise management measures, beyond the consideration of noise mitigation for the areas identified through the processes described in **Section 6**. This is consistent with National Planning Policy Objective 65, which supports the aims of the Regulations through national planning guidance.

The appropriate use of the planning system can be used to help avoid, or minimise, the adverse impacts of noise without placing unreasonable restrictions on development.

There are two main scenarios in development where noise could be viewed as a material consideration:

1. **Bringing people to noise**

- New housing, hospital, school, nursing home etc developments near to existing road, rail, industrial or airport noise;
- Noise levels outside the façade, in gardens, in public open spaces;
- Noise levels inside the building.

2. **Bringing noise to people**

- New or altered roads, railways, industrial sites or airports or commercial developments which would alter the noise environment in the vicinity of noise sensitive locations.

To effectively employ the planning process for consistent noise exposure avoidance or mitigation, it is deemed beneficial to incorporate guidelines on noise exposure levels during the initial proposal and design phase of planning applications. Descriptions of guidance adopted in the Agglomeration is set out below.

7.5.1 ProPG: Planning & Noise - New Residential Development

The *Draft Interim National Guidance for the Consideration of Transportation Noise in the Design of New Residential Development* (2021) (described in **Section 2.3.11**), which the Local Authorities have cognisance of, recommends that consideration is given to the potential impact of transportation noise in line with Professional Planning Guidance (ProPG) on Planning & Noise: New Residential Development (ProPG, 2017).

ProPG was published in May 2017 by the Acoustics and Noise Consultants (ANC), Chartered Institute of Environmental Health and UK Institute of Acoustics (IOA). Its primary goal is to aid in planning to deliver sustainable development by promoting good health and well-being in relation to noise. It encourages the use of good acoustic design process in and around proposed new residential development, having regard to national policy.

Any issues related to noise should be given consideration at the earliest stages of the development process to facilitate streamlined decision making in planning. ProPG follows a systematic, proportionate, risk based, two-stage, approach.

Stage One is an Initial Site Noise Risk Assessment which should be conducted to establish the level of risk from noise, not including any mitigation measures. There are four noise risk categories (negligible, low, medium and high). The outcome of this assessment should not directly inform a decision, rather to allow for the consideration of good acoustic design.

Stage Two is a full noise assessment including four recommended key elements:

- Element 1 - demonstrating a "Good Acoustic Design Process" avoiding "unreasonable" and preventing "unacceptable" acoustic conditions;
- Element 2 - observing "Internal Noise Level Guidelines";
- Element 3 - undertaking an "External Amenity Area Noise Assessment";
- Element 4 - consideration of "Other Relevant Issues".

To support proposals for a development an Acoustic Design Statements should be produced which will aid recommendations formulated by the decision maker.

7.5.2 Acoustic Ventilation and Overheating, Residential Design Guide (AVO)

In 2020 the ANC and IOA jointly published the Acoustic Ventilation and Overheating, Residential Design Guide (AVO), which provides an approach as to how the competing aspects of thermal and acoustic comfort can be managed, which is particularly important in situations where acoustic requirement may call for closed windows.

It is recommended in guidance for action planning authorities prepared by the EPA that AVO guidance should be used after reasonably practicable attempts to use good acoustic design to achieve the internal target levels recommended by the ProPG have been exhausted.

7.5.3 BS 8233:2014: Guidance on sound Insulation and Noise Reduction for Buildings

BS 8233:2014 is intended to provide recommendations for the control of noise in and around buildings. It suggests appropriate criteria and limits for different situations, which are primarily intended to guide the design of new or refurbished buildings undergoing a change of use rather than to assess the effect of external noise sources. The guidelines for noise levels in a residential property are generally in accordance with WHO Guidelines for Community Noise and Night Noise Guidelines.

The standard suggests suitable internal noise levels within different types of buildings including residential dwellings for steady external noise sources. BS 8233:2014 recommended maximum ambient noise levels, as summarised **Table 20**.

Table 20: BS 8233:2014 Recommended Internal L_{Aeq} Target Levels for Overall Noise in the Design of a Building

Location	$L_{Aeq, 16hr}$ (0700-2300 hrs)*	$L_{Aeq, 8hr}$ (2300-0700 hrs)*
Living Rooms	35 dB	-
Dining Rooms	40 dB	-
Bedrooms	35 dB	30 dB

*see BS 8233:2014 for caveats and notes

Regarding noise levels in external amenity areas, BS 8233:2014 states:

"it is desirable that the steady state noise level does not exceed 50 dB $L_{Aeq,T}$, with an upper guideline value of 55 dB $L_{Aeq,T}$ …it is also recognized that these guideline values are not achievable in all circumstances."

BS 8233:2014 also provides guidance on appropriate internal noise levels within different types of workplaces such as offices.

In designing buildings to control noise levels internally, BS 8233 suggests the following sequence:

a) assess the site, identify significant existing and potential noise sources,
b) measure or estimate noise levels and evaluate layout options;
c) determine design noise levels for spaces in and around the building(s);
d) determine sound insulation of the building envelope, including the ventilation strategy;
e) identify internal sound insulation requirements;
f) identify and design appropriate noise control measures;
g) establish quality control and ensure good quality workmanship.

7.5.4 ISO 19488:2021 Acoustics: Acoustic classification of dwellings

The purpose of the international standard is to aid developers to specify a classified level of acoustic quality for a dwelling. The document can be used as a tool to characterise the quality of the existing housing stock.

The document does not have legal status, unless adopted by national or relevant authorities. An additional purpose of the standard is to help national authorities and standardisation organisations to develop or revise national building regulations and acoustic classification schemes.

8 Prevention, Protection and Mitigation Measures

8.1 Introduction

The management of noise within the Agglomeration adopts three approaches:

1. **Prevention** – measures which seek to avoid additional members of the community being exposed to undesirable noise conditions. In the Agglomeration, preventative measures consist of planning policy in respect of not locating residential developments and other noise sensitive buildings in potentially noisy environments and in particular adjacent to transportation infrastructure.
2. **Protection** – relates to the preservation of environmental noise quality through the identification of Candidate Quiet Areas, and the processes of investigating Candidate Quiet Areas for delimitation as Quiet Areas; and
3. **Mitigation Measures** – relates to the identification and prioritisation of appropriate mitigation measures to reduce and/or mitigate noise levels in areas where they are potentially harmful to human health.

8.2 Prevention

8.2.1 Planning Guidance

Applications for new residential developments in the Agglomeration will be assessed in accordance with the policies and goals outlined in the relevant City and County Development Plans. Where applicable, these include adoption of the principles of Professional Planning Guidance (ProPG) on *Planning & Noise: New Residential Development*, as described in **Section 7.5.1**.

Where the assessment outcome determines the likelihood of an adverse noise impact, planning applications should be supplemented by an Acoustic Design Statement carried out by appropriately qualified acousticians and competent persons[33]. The Acoustic Design Statement should demonstrate that all facets of ProPG have been followed.

8.2.2 Noise and the Public Realm

A healthy acoustic environment in public areas depends on environmental noise levels as well as a variety of subjective factors such as the intended use of space, the preferences of people, their expectations and their attitudes and sensitivity to the sounds they hear. The management of

[33] The Council's definition of competent persons is based on the EPA's interpretation in their Guidance Note for Noise in Relation to Scheduled Facilities.

environmental noise in the public realm should have a broad focus with a consideration of noise levels as well as the need to create the right acoustic environment for the right time and place.

There are synergies between the mitigation of traffic-related noise and air pollution because the source of emissions is often similar. Early input in the design of public spaces by considering air quality and the acoustic environment offers the opportunity to maximise the benefits of taking an integrated approach to design.

In designing public spaces to maximise the contribution in terms of maintaining good air quality, reducing environmental noise and improving the quality of sound then consideration should be given to measures including:

- Using novel environmentally friendly methods (e.g., Holistic and sustainable abatement of noise by optimized combinations of natural and artificial means (HOSANNA)[34], funded by the European Union Seventh Framework Programme, FP7/2007–2013[35]) such as barrier designs, the appropriate planting of trees, shrubs, or bushes, ground and road surface treatments, and greening of building façades and roofs;
- pedestrianising streets and the use of green infrastructure to reduce the likelihood of citizens being present in locations where air and noise pollution are highest, and creating attractive, accessible places where pollution levels are lower;
- providing options for active travel along routes other than beside busy roads, making walking and cycling increasingly attractive alternatives to private vehicle use. This will reduce citizens' exposure to air and noise pollution, and potentially vehicular emissions;
- providing and protecting tranquil outdoor environments and positive acoustic environments. This may reduce annoyance for citizens living near busy roads and ensure people have options other than being indoors when they want to enjoy respite from noise;
- encouraging exercise and other outdoor recreation to improve citizens health and well-being due to health risks posed by air and noise pollution;
- providing alternative acoustic interventions to create new positive types of sounds that mask environmental noise;

8.3 Protection: Areas to be Preserved for Environmental Noise Quality

Candidate Quiet Areas identified within the Agglomeration are summarised in **Table 19**, and detailed in **Section 10** and **Section 11.** The Candidate Quiet Areas are areas of favourably low environmental noise levels, and potential candidates to be delimited as Quiet Areas.

[34] https://cordis.europa.eu/project/id/234306 [Accessed March 2024]
[35] https://eur-lex.europa.eu/EN/legal-content/summary/seventh-framework-programme-2007-to-2013.html [Accessed March 2024]

During the implementation of the plan the APA shall consider measures to ensure the environmental noise quality in these areas are preserved, with careful management of activities which would impact upon the acoustic environment. After proposing the delimiting of a Quiet Area, a corresponding policy statement should be suggested, detailing how the Local Authority might aid in safeguarding the Quiet Area. Draft versions of any policy statement, and associated measures, should form part of a consultation process. To promote their consideration within future development plans, Quiet Areas should be considered within City or County Development Plans, and relevant Local Area Plans.

8.4 Mitigation: Areas to be Subject to Noise Management Activities

Priority Important Areas (see **Section 6.6**), have been identified within the Agglomeration as those where noise management activities are to be considered during the implementation of the Noise Action Plan.

As noted in **Section 6**, the Priority Important Areas have been identified with respect to noise from roads and railways only, as the management of noise due to airports and industrial activities are primarily with the associated authorities.

Considering the multitude and diversity of noise management options, choosing a noise mitigation measure necessitates evaluating its potential effectiveness in reducing noise exposure and adverse effects, while also considering its associated costs. The general steps in this process, which will be considered by the APA in consultation and collaboration with the NMBs during the implementation of the Noise Action Plan, are:

1. Noise measurements at Priority Important Areas.
2. Review of the assumptions used to identify the Priority Important Areas
3. Re-evaluation and confirmation of Priority Important Areas
4. Identification of practical noise mitigation measures
5. Appraisal of noise mitigation measures monetised benefits to health
6. Financial assessment of noise mitigation measures
7. Cost-benefit analysis
8. Recommendation of noise mitigation measure(s)

Each of these steps is further elaborated upon in the subsequent sections. The appraisal of the noise mitigation measures shall be undertaken during the implementation of the plan.

1. Noise measurements at Priority Important Areas

The assessment of Priority Important Areas is guided by an initial undertaking of noise measurements at locations representative of the area identified. The surveys will be conducted by the relevant Local Authority, and/ or other pertinent infrastructure owners.

The primary objective of the noise survey is to verify that the measured noise exposures accurately correspond to the results obtained from the strategic noise maps. The results of the noise measurements will service to authenticate the strategic noise models, providing a basis upon which the noise mitigation measures can be evaluated.

2. Review of the assumptions used to identify the Priority Important Areas

If disparities arise between the noise measurements and the results obtained from the strategic noise maps, investigations will be conducted into factors such as road surface, traffic speeds, traffic counts, presence of barriers etc, and these findings will be compared against the assumptions within the noise models utilised for development the strategic noise maps.

3. Re-evaluation of Priority Important Areas

A re-evaluation of the identified Priority Important Area to ensure the analysis is representative of the 2021 assessment year, and appropriate amendments to the model parameters have been incorporated. This is likely to be informed by consultation between the APA and NMBs, and may include re-running the adjusted noise model and/or a review of any noise measurements.

4. Identification of practical noise mitigation measures

The APAs, in consultation with NMBs will identify and agree on practical noise mitigation measures in relation to the Priority Important Areas that remain following steps 1-3 (above). The practicality of the measures will take into consideration its potential impact in terms of noise exposure and harmful effects reduction, planning, land-use, cost and available technology.

The noise mitigation measures are collectively described as a noise management framework, and can be considered both in isolation, and in combination. Consideration will also be given to measures that may result from existing road management, traffic and rail projects and works programmes.

Examples of noise management frameworks for road traffic noise and railway traffic noise are displayed in the following figures:

- Figure 13: Road Traffic Noise Management Framework
- Figure 14: Railway Traffic Noise Management Framework

The EPA is responsible for issuing Waste, Industrial Emission (IE) and Integrated Pollution Control (IPC) licenses. Within the licensing systems, specific activities and operations are subject to license conditions that regulate noise emissions. The requirement for industry noise mitigation measures would be identified by the EPA and evaluated on a case-by-case basis, accounting for the facilities existing licensing conditions and present noise mitigation strategies.

Industrial noise exposures within the Agglomeration are summarised in **Section 5.2**, and show the number of people exposed is relatively low compared to road. The focus of the Noise Action Plan is therefore strategic noise management activities associated with road. Rail noise is also considered.

With regards to aircraft noise, whilst Cork Airport does not have a designated competent authority for the purpose of airport noise regulation, it is assumed that the general approach to noise management in place at Dublin Airport may be viewed as national best practice and provide a suitable framework for the management of noise at Cork Airport, where necessary. The ICAO *Balanced*

Approach to Aircraft Noise Management[36] is recognised as international best practice for the management of aircraft noise in the vicinity of airports, and therefore would form a suitable framework for developing an approach to noise management at the airport.

5. Appraisal of noise mitigation measures monetised benefits to health

An assessment of the identified practical noise mitigation measures, which will likely include testing of the measures using the revised CNOSSOS-EU (or other appropriate methodology) detailed computational noise model to determine the noise exposure and health benefits of the measures.

In Ireland there is no recommended method for monetising the health benefits of noise mitigation measures. In the absence of an Irish method, the EPA Guidance recommends that appraisals use the UK environmental impact appraisal methodology within the English Department for Transport, Transport Analysis Guidance (WebTAG) to inform a cost benefit assessment.

WebTAG provides guidelines and tools for translating the expected benefits of road, rail and aviation mitigation measures into monetary terms. WebTAG is informed by noise calculation results for a year during the implementation of the plan (2024-2028) and a future year, (typically 15 years ahead), with and without the noise mitigation measure(s) in place. The WebTAG noise workbook[37] calculates the monetary value of long-term effects on sleep disturbance, amenity (annoyance), AMI (acute myocardial infarction), stroke, and dementia during the daytime, and sleep disturbance at night.

The WebTAG outcomes provide the net present value of the noise level change resulting from the assessed mitigation scheme in Pounds Sterling. This value will require conversion to Euros using the prevailing exchange rate, enabling a comparison with the estimated implementation costs.

6. Financial assessment of noise mitigation measures

The estimated cost of implementing mitigation measure(s) will be determined, considering costs over the measure's lifetime, encompassing construction and maintenance expenses. The selection of specific mitigation measure(s) will result from an appraisal of their benefits to health, monetised accordingly.

For example, road re-surfacing with respect to road traffic noise, whereby quiet road surfaces can be an effective way of reducing road traffic noise at receptors. The characteristics of a quiet road surface generally consist of its enhanced ability to absorb sound rather than reflect it, and a smoother surface so tyres encounter fewer irregularities.

[36] Guidance on the Balanced Approach to Aircraft Noise Management, Doc 9829 AN/451, ICAO 2008. Available at: https://www.icao.int/environmental-protection/pages/noise.aspx [accessed December 2023]
[37] https://www.gov.uk/government/publications/tag-environmental-impacts-worksheets [Accessed October 2023]

The noise reduction of a quiet road surface can be between 1 – 5 dB[38] [39] when compared with a common dense asphalt concrete road surface type. Larger reductions are possible, particularly when replacing worn roads with optimised quiet road surfaces.

The specific costs per square metre of a standard road surface compared with a quieter road surface can be commercially sensitive, however the Phenomena project (2021), discussed in **Section 2.2.5**, notes these cost increases can be 5-10%.

The financial assessment of noise mitigation would be developed through consultation between the APA, NMB and appropriate Local Authority departments.

7. Cost-benefit analysis

A comparison of benefits to health versus the cost of the noise mitigation measure. This is presented as a cost-benefit ratio (the ratio of costs over benefit).

Cost-benefit ratios of less than 1.0 indicate the benefits to health outweigh the costs.

8. Recommendation of noise mitigation measure(s)

The final step in the process, which allows all of the noise mitigation scenarios to be compared through the outcomes of the cost-benefit analysis.

The most cost-effective noise mitigation measures will be proposed in collaboration with NMBs and appropriate authorities, and will (subject to resources and funding) seek to be implemented.

[38] J. Sliggers: Road surface label, Push and Pull for Noise Emission Reduction from Road Traffic in the NLs and EU, Informal document GRB-65-27 (65th GRB, February 2017, agenda item 10)
[39] F. G. Praticò, F. Anfosso-Lédée, Trends And Issues In Mitigating Traffic Noise Through Quiet Pavements, Procedia - Social and Behavioral Sciences 53 (2012) 203 – 212

Figure 13: Road Traffic Noise Management Framework

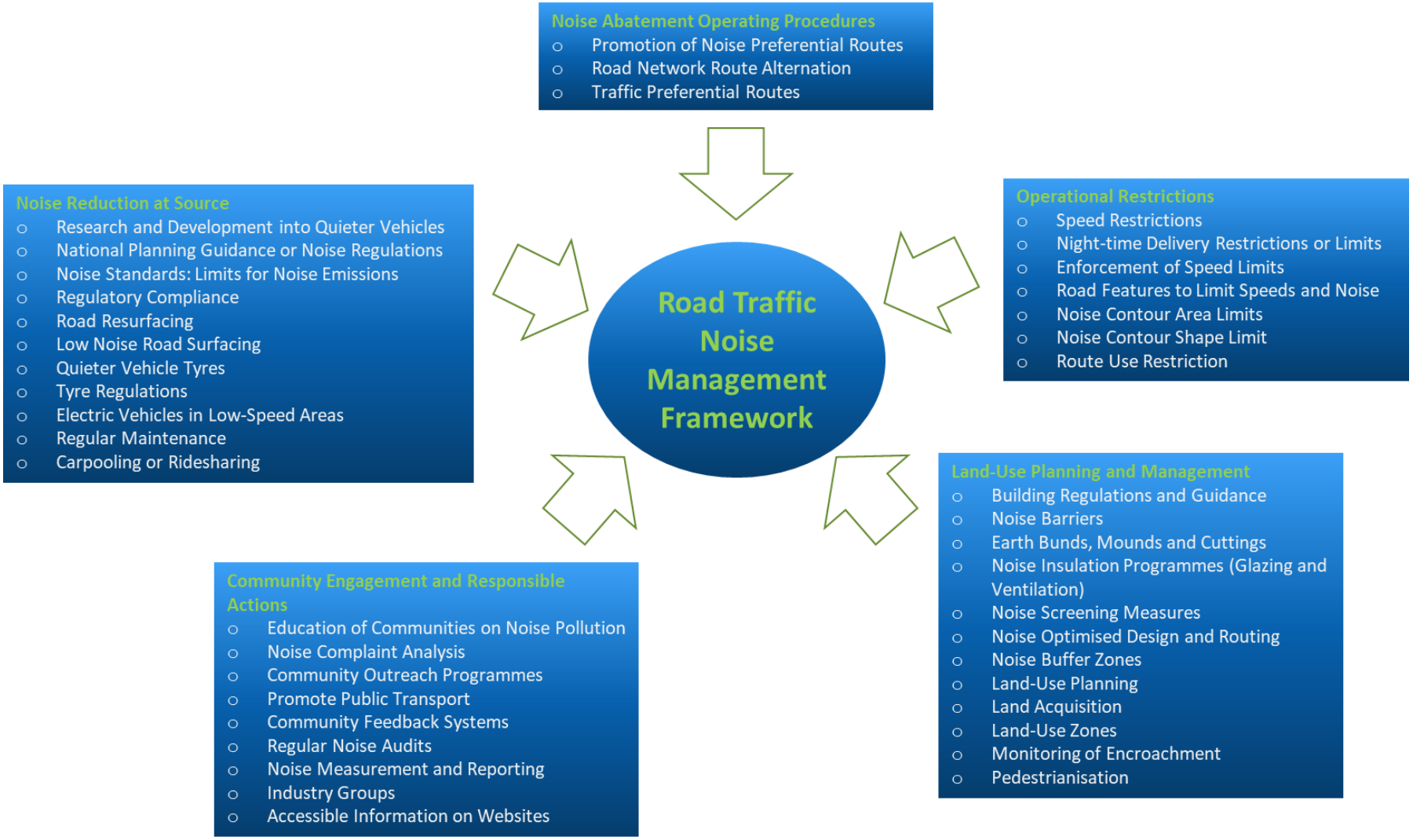


Figure 14: Railway Traffic Noise Management Framework

9 Long-term Strategy

9.1 Noise Action Plan Implementation Commitments

This Noise Action Plan is supported by a four-year programme for implementation (2024-2028), with progress reported to the EPA on an annual basis.

The Noise Action Plan is underpinned by a set of overarching noise policy principles outlined in the **Noise Policy Statement**.

These noise policy principles are supported by general commitments (**Responsible Aims**) by Cork City Council (CCiC) and Cork County Council (CCC).

9.1.1 Noise Policy Statement

The Agglomeration APAs will adopt a strategic approach to managing environmental noise from road traffic, rail traffic, airports and industrial activity sites, including ports, within its functional area, with the following overarching policy principles:

- **Prevention** – manage the risk of additional members of the community being exposed to undesirable noise levels where it is likely to have significant adverse impact on health and quality of life.
- **Protection** - protect areas which are desirably quiet, or which offer a sense of tranquillity through a process of identification and validation followed by formal designation of 'Quiet Areas'.
- **Mitigation Measures** – identify, and prioritise, appropriate mitigation measures to reduce noise levels where they are potentially harmful.

9.1.2 Responsible Aims

Responsible aims, which underpin the Noise Policy Statement:

- **RA_1 - Policy and Guidance Development** – Encourage the integration of noise considerations into the ongoing process of policy and guidance development, and actively promote existing policies and guidance related to noise.
- **RA_2 - Working Groups** – Participate in technical working groups pertinent to the implementation of the Environmental Noise Directive and with the assistance of the Environmental Protection Agency, a Round 4 Noise Action Plan Implementation Working Group shall be established.
- **RA_3 – Noise Mitigation** – In collaboration and consultation with relevant Noise Mapping Bodies, noise management interventions shall be applied on a priority basis during existing maintenance and improvement programs, where appropriate. This application will be based on a relevant evaluation of whole-life costs and benefits.
- **RA_4 – Protection** – Assess and, where appropriate, propose Candidate Quiet Areas to the Environmental Protection Agency for designation as Quiet Areas by the Minister.

- **RA_5 – Prevention** – Evaluate and condition planning proposals for noise sensitive development near major noise sources.
- **RA_6 – Community Engagement** – Commit to proactive and inclusive engagement with communities and collaboratively address noise issues for the improvement of our shared living environment.
- **RA_7 – Manage Noise Complaints** – Review and respond to all environmental noise complaints in accordance with their Customer Charter.
- **RA_8 - Regulatory Engagement** – Report the progress on the implementation of Noise Action Plans, including the investigation and implementation of noise management measures in Priority Important Areas, and the assessment of Candidate Quiet Areas for preservation of environmental noise quality, to the Environmental Protection Agency on an annual basis.

9.2 Key Round 5 Timetables

The Round 4 Noise Action Plan timetable is set out in **Section 1.5**, with the deadline for the submission of the Noise Action Plan to the European Environment Agency (EEA) on 18 January 2025.

Specific dates relating to Round 5 Noise Action Plans are to be determined, but are expected to be:

- 18 July 2028: Deadline for noise action plans
- 18 August 2028: Deadline for publishing noise action plans
- 18 August 2028: Summaries of noise action plans submitted to the EPA
- 18 January 2029: Noise actions plans to be reported to the EEA by the EPA

9.3 Round 4 Noise Action Plan Implementation

The implementation of the Noise Action Plan spans a four-year time frame, beginning in 2024.

Key measures and actions associated with its implementation have been developed which reflect the policy principles set out in the **Noise Policy Statement** (**Section 9.1.1**) and in support of the **Responsible Aims** (**Section 9.1.2**), and with reference to key regulatory dates.

The approach to implementation is presented for each APA in the Agglomeration separately in **Section 10** and **Section 11**.

Implementation is subject to resources, appropriate funding being made available and collaboration with relevant key stakeholders and infrastructure owners.

10 Cork City Council

10.1 Introduction

Sections 1 – **Section 9** of this Noise Action Plan sets out the overarching principles of the Noise Action Plan process, including the existing international, national and regional noise management legislation and guidance, a description of the noise mapping process, and methodologies advocated in the EPA Guidance for identifying and addressing the most important areas, as established by the strategic noise mapping.

This section presents the results of the noise action planning process specifically for the Cork City Council (CCiC) administrative area and sets out the considerations and actions that are specific to Cork City Council.

The referenced Action Planning Authority (APA) in this section is Cork City Council.

This section includes the following details:

- contact details;
- the APA's consultation process;
- the APA's historical noise action planning process;
- the APA specific noise management policy and guidance;
- the APA specific plans, projects and strategies relevant to noise;
- the results of the strategic noise mapping;
- the areas to be subject to noise management activities ('Priority Important Areas' (PIAs));
- the areas to be considered for preservation for environmental noise quality ('Candidate Quiet Areas' (CQAs));
- the mitigation and protection measures and actions; and
- associated graphical figures.

10.1.1 Name and Contact Details for Responsible Authority

Cork City Council

Traffic Regulation & Safety Section

Roads and Environment Operations Directorate

Cork City Council

City Hall

Cork

Email: traffic@corkcity.ie

10.2 Consultation

10.2.1 Stakeholder Consultation

A period of public consultation will be completed on this draft Noise Action Plan. A summary of the public consultation will be set out in the final Noise Action Plan.

10.3 Review of Noise Action Plan(s)

10.3.1 Round 3 Noise Action Plan (2018-2023)

The Cork Agglomeration Area Noise Action Plan 2018 – 2023 was prepared jointly with Cork County Council and Cork City Council. A five year plan was put in place with the following recommended actions:

- Get Noise Action Plan adopted as a policy document by both Cork City Council and Cork County Council;
- Use the Noise Action Plan as a policy document in relation to planning applications and developments in close proximity to major roads. Consideration can be given to this in formation of the next City Development Plan;
- Carry out validation checks on top five hot spots;
- Identify potential quiet areas; and
- Feed into the City and County Development Plans.

Cork City Council has prioritised the implementation of a strategic approach to the management and mitigation of environmental noise. The focus is on preventing and reducing environmental noise rather than relying on the installation of localised physical infrastructure, which tends to have a more limited spatial impact. Addressing noise at a strategic level is aimed at achieving better long-term outcomes, incorporating significant policy measures related to land use planning and traffic management controls.

The Cork City Council's progress in this regard includes ongoing efforts to facilitate sustainable transport measures, contributing to a positive impact on noise levels. These measures involve the reduction in car usage and the promotion of walking, cycling, and public transport, aligning with the council's commitment to achieving better environmental and noise outcomes.

10.4 Local Noise Management Policy and Guidance

10.4.1 Cork City Development Plan 2022-2028

The Cork City Development Plan 2022-2028 sets out how Cork City will grow and the objectives to achieve this growth. Noise related objectives are set out in **Table 21**.

Table 21: Cork City Development Plan Noise Related Objectives

Strategic Objective	Description
Strategic Objective 8 Environmental Infrastructure	• To ensure the efficient and sustainable use of water services infrastructure. • To enhance water quality and water resource management. • To sustainably manage waste generation and treatment. • To support circular economy principles. • To improve air quality and levels of pollution in the urban and hinterland areas of Cork City. • To promote the pro-active management of noise. • To support the investment and delivery of environmental infrastructure to serve the compact growth of Cork City, including water and waste water services, digital infrastructure, renewable energy and environmental improvements. Proposals for new development in Cork City will not be permitted where they would have an unacceptable detrimental impact on water resources or infrastructure, water quality or air quality, have inadequate waste management mitigation, generate excessive noise or otherwise have an unacceptable detrimental impact on the environmental infrastructure of Cork City.
Environmental Infrastructure Objective 9.20 Noise	To support the implementation of the objectives of The Cork Agglomeration Noise Action Plan 2018 – 2023 and promote the pro-active management of noise where it is likely to have significant adverse impacts on health and quality of life.
Noise Pollution	9.32 The Cork Agglomeration Noise Action Plan 2018 – 202326 was prepared in accordance with EU Directive 2002/49/EC European Communities (Environmental Noise) Regulations 2018. The Noise Action Plan is to act as a means of managing environmental noise, and to meet the aim of the European Noise Directive (END) of preventing, and reducing where necessary, environmental noise through the adoption of the action plan. Road traffic noise is the predominant source of noise within the Cork Agglomeration Area. Under the Regulations, Cork City Council and Cork County Council are designated the action planning authorities for the Cork Agglomeration area.
Noise Pollution	9.33 Cork City Council, through the planning system, will aim to minimise the adverse impacts of noise by controlling and segregating noise intensive developments from noise sensitive areas or impose conditions such as limiting the hours of operation of a proposed development where it is likely to create disturbance due to noise (See Chapter 11 'Placemaking and Managing Development' for further details).

10.5 Relevant Plans, Project and Studies

10.5.1 Road Traffic Noise

Several major transport infrastructure projects are planned for the Cork City Council administrative area during the life of the Noise Action Plan. While not their primary purpose, they will have the potential to impact on the noise environment both positively and negatively. Projects that are planned for the lifetime of the Noise Action Plan include:

Ongoing implementation of the Cork Metropolitan Area Transport Strategy (CMATS) - aimed at supporting the move to public transport and active travel Dunkettle Interchange (open February 2024)

M28 Cork to Ringaskiddy - The M28 Cork to Ringaskiddy will extend from the Bloomfield Interchange on the N40 to the port in Ringaskiddy along the route of the existing N28 single carriageway route. Once completed, this will enable all Port of Cork activities to cease at the city centre site and take significant HGV volumes out of the city with the resulting reduction in noise. However, consideration will also have to be given to the potential high noise levels along the upgraded motorway route.

M20 Cork to Limerick - The M20 Cork to Limerick (southern section) is a new motorway between Limerick and Cork approximately 100 km apart. The scheme will improve the quality of the transport network which will address road safety issues associated with the existing N20 route and provide for safer and more efficient journey times. When completed the new stretch of motorway will link Cork to Limerick and onto Tuam, Co. Galway, forming a major motorway along the western corridor. The development of a motorway will potentially reduce traffic counts and therefore road noise along the existing N20 route. However, consideration will also have to be given to potential high noise levels along the proposed new M20 on residents' health and amenity.

10.5.2 Speed limit reductions

Since 2016, the Department of Transport has annually granted funds to facilitate the introduction and expansion of 30 km/h slow zones in housing estates. Each year, Cork City Council has consistently implemented these 30km/h slow zones. The Council plans to continue this program, aiming to increase the number of people in such zones over the lifetime of the Noise Action Plan, provided funds are available.

Additionally, in line with the Guidelines for Setting and Managing Speed Limits in Ireland 2015, a citywide speed limit review is conducted every five years. Whilst the primary purpose is not noise reduction, the potential positive impact on the noise environment is recognised.

10.6 Other Relevant Plans, Studies and Measures

10.6.1 Cork City Climate Action Plan 2024-2029

The Cork City Climate Action Plan 2024-2029 sets out the actions that will make Cork City sustainable, resilient and reduce the carbon emissions of the city. While not it's primary purpose, the implementation of the plan has the potential to impact on the noise environment. In terms of transport, the plan supports the implementation of CMATS which will have positive outcomes in terms of reducing transport related noise and emissions.

10.6.2 Cork City Council Air Quality Strategy 2021-2026

The Cork City Council Air Quality Strategy 2021-2026 outlines the actions that Cork City Council will undertake between 2021 and 2026 to reduce the concentrations of air pollutants in the city area; thereby positively impacting on the health and quality of life of residents and visitors. The Air Quality Strategy incorporates a wide range of initiatives relating to transport and travel given that a large proportion of air pollution in the city is as a result of transport emissions. While not it's primary purpose the implementation of the Air Quality Strategy initiatives has the potential to impact on the noise environment positively.

10.7 Summary of the Results of the Noise Mapping Process

The Round 4 noise exposure statistics and harmful effects assessment are presented below for the Cork City Council administrative area. The statistics at Agglomeration level are presented in **Section 5.2**.

Exposure statistics are assessed independently for each noise source, and are summarised for the noise metrics across the noise exposure bands defined in the Regulations. The population exposure statistics have been rounded to the nearest 100 as required by the Regulations.

10.7.1 Exposure Statistics

Table 22: CCiC: Number of People in Dwellings – L_{den}

Noise Exposure (dB L_{den})	All Roads	All Railway	All Industry
55-59	49,000	400	1,900
60-64	32,200	300	600
65-69	10,200	400	200
70-74	1,600	100	0
>=75	300	0	0

*exposure statistics rounded to the nearest 100.

Table 23: CCiC: Percentage of Total Population Exposed to the Noise Source – L_{den}

Noise Exposure (dB L_{den})	All Roads	All Railway	All Industry
55-59	23 %	0 %	1 %
60-64	15 %	0 %	0 %
65-69	5 %	0 %	0 %
70-74	1 %	0 %	0 %
>=75	0 %	0 %	0 %

Table 24: CCiC: Number of School Buildings (& Hospital Buildings) – L_{den}

Noise Exposure (dB L_{den})	All Roads	All Railway	All Industry
55-59	57 (05)	01 (00)	02 (00)
60-64	63 (04)	00 (00)	02 (00)
65-69	16 (04)	00 (00)	00 (00)
70-74	00 (00)	00 (00)	00 (00)
>=75	00 (00)	00 (00)	00 (00)

Table 25: CCiC: Number of People in Dwellings – L_{night}

Noise Exposure (dB L_{night})	All Roads	All Railway	All Industry
50-54	20,400	300	1,600
55-59	5,300	300	500
60-64	1,900	200	0
65-69	400	0	0
>=70	0	0	0

*exposure statistics rounded to the nearest 100.

Table 26: CCiC: Percentage of Total Population Exposed to the Noise Source – L_{night}

Noise Exposure (dB L_{night})	All Roads	All Railway	All Industry
50-54	10 %	0 %	1 %
55-59	3 %	0 %	0 %
60-64	1 %	0 %	0 %
65-69	0 %	0 %	0 %
>=70	0 %	0 %	0 %

Table 27: CCiC: Number of School Buildings (& Hospital Buildings) – L_{night}

Noise Exposure (dB L_{night})	All Roads	All Railway	All Industry
50-54	42 (04)	00 (00)	04 (00)
55-59	07 (01)	00 (00)	00 (00)
60-64	00 (00)	00 (00)	00 (00)
65-69	00 (00)	00 (00)	00 (00)
>=70	00 (00)	00 (00)	00 (00)

Table 28: Total number of Noise Sensitive Buildings

Noise Sensitive Building	Number of Noise Sensitive Buildings
Schools	235
Hospitals	26

10.7.2 Harmful Effects

The exposure of harmful effects is assessed independently for each source. Where the same people are simultaneously exposed to different noise sources, the harmful effects may not, in general, be cumulated, however they can be compared to identify proportional significance.

Table 29 presents the calculated harmful effects in the case of road traffic noise for the Agglomeration, and **Table 31** present the calculated harmful effects from railway noise.

As shown in **Table 30** the statistical proportion of the total population with harmful effects associated with road and rail traffic noise in the Cork City Council administrative area is consistent with that across the Agglomeration.

Table 29: CCiC: Breakdown of Harmful Effects in the Case of Road Noise – Total Number of People – All Sources

Harmful Effect	Cork Agglomeration	Cork City Council
Ischemic Heart Disease	16.50	16.15
Highly Annoyed	17,724.06	17,325.85
Highly Sleep Disturbed	3,382.11	3,316.59

Total Populations

Cork Agglomeration: 219,286.82

APA Proportion within Agglomeration: Cork City Council: 210,163.80**, Cork County Council:** 9,123.02

Table 30: CCiC: Breakdown of Harmful Effects in the Case of Road Noise – % of Population – All Sources

Harmful Effect	Cork Agglomeration	Cork City Council
Ischemic Heart Disease	0.01%	0.01%
Highly Annoyed	8.08%	8.24%
Highly Sleep Disturbed	1.54%	1.58%

Table 31: CCiC: Breakdown of Harmful Effects in the Case of Railway Noise – Total Number of People – All Sources

Harmful Effect	Cork Agglomeration	Cork City Council
Highly Annoyed	284.33	284.33
Highly Sleep Disturbed	134.07	134.07

Table 32: CCiC: Breakdown of Harmful Effects in the Case of Railway Noise – % of Population – All Sources

Harmful Effect	Cork Agglomeration	Cork City Council
Highly Annoyed	0.13%	0.14%
Highly Sleep Disturbed	0.06%	0.06%

10.8 Noise Management Activities (Industry)

The industry sites included within the Agglomeration strategic noise maps are limited to Industrial Emission (IE) sites as regulated by the EPA under the IPPC Directive 96/61 EC, and any ports. Strategic noise maps of the industrial noise emissions are shown in **Figure 16** to **Figure 18**, listed in **Section 5.2**.

The data upon which the industry noise emission models have been developed includes default values, therefore model outputs are a strategic representation of industry noise levels, rather than being site specific.

The Noise Action Plan does not include any Priority Important Areas for industry mainly due to the lower exposure statistics reported. Notwithstanding, there will be a need for ongoing management of noise issues from industrial sites through noise complaints, development and licence application. In this regard the APA may use the maps to support this process and should continue to consult and collaborate with the EPA who have overall responsibility for site specific noise management of waste, Industrial Emission (IE) and Integrated Pollution Control (IPC) licensed sites.

10.9 Priority Important Areas

The methodology for identifying the Most Important Areas and the shortlist of Priority Important Areas, which will be subject to noise management activities, is set out in **Section 8.4.** The Priority Important Areas are listed in **Table 33** to **Table 35**, which summarise a range of statistics and information for each area, as follows:

Table 33 presents the statistics for each Priority Important Area including population, details of the harmful effects and numbers of people exposed to noise levels above the Important Areas noise limit value.

Table 34 repeats the key statistics but presents the population and harmful effects statistics as a percentage of the total population of the Cork City Council administrative area.

Table 35 presents the number of people exposed to road traffic noise (L_{den} and L_{night}) in each road Priority Important Area broken down by noise exposure bands set out in the Regulations.

With reference to the noise management frameworks described in **Section 8.4**, a summary of potential noise mitigation measures for the Priority Important Area is given in **Table 37**. It should be noted that this table is not exhaustive and these and other measures may be considered at the Priority Important Area evaluation stage during the Noise Action Plan implementation.

Cork City Council will, subject to resources and funding, undertake an assessment of the noise mitigation measure options relating to the Priority Important Area within the life cycle of the Noise

Action Plan. This will include discussions across relevant sections within Cork City Council, Iarnród Éireann and Transport Infrastructure Ireland.

Figures presenting the Most Important Areas and Priority Important Areas are included in **Section 10.13**.

- **Figure 19** shows the full set of Most Important Areas for Cork City Council and from which the shortlist of Priority Important Areas have been selected.
- **Figure 20** presents an overview of all the shortlisted Priority Important Areas in Cork City Council.
- **Figure 21** to **Figure 29** present a more detailed plan of each Priority Important Area.

Table 33: CCiC: Priority Important Area (PIA) Summary (1)

PIA	Source	MIA Criterion (People HA per 100m²)	Area (m²)	Total Population*	Harmful Effects Statistics**			Number of People Above Important Areas Noise Limit Value***			
					HA	HSD	IHD	Road 53dB L_{den}	Road 45dB L_{night}	Railway 54dB L_{den}	Railway 44dB L_{night}
CCiC_1	ROAD	15	159,600	2,541.11	371.41	64.71	0.39	1,979.7	1,648.12	-	-
CCiC_2	ROAD	15	194,900	3,153.4	582.44	154.79	0.68	2,618.99	2,613.17	-	-
CCiC_3	ROAD	15	24,200	480.69	65.97	11.35	0.06	324.52	298.16	-	-
CCiC_4	ROAD	15	69,100	1,077.08	163.87	35.32	0.19	853.15	768.56	-	-
CCiC_5	ROAD	15	17,800	341.04	65.68	20.99	0.08	268.55	341.04	-	-
CCiC_6	ROAD	15	28,600	565.34	71.89	7.75	0.06	447.87	205.42	-	-
CCiC_7	ROAD	15	28,300	308.14	50.87	12.42	0.05	306.32	308.14	-	-
CCiC_8	ROAD	15	18,600	264.31	52.5	14.06	0.06	212.8	219.4	-	-
CCiC_9	ROAD	15	33,000	486.46	120.85	35.33	0.14	449.42	343.24	-	-

* Total population inside all Most Important Areas (MIAs) associated with the Priority Important Area (PIA)

** The harmful effects presented in this table are determined from a statistical approach across the whole population covered by the noise maps, and should not be considered to be an accurate assessment of the possible health effects at any specific building

*** The total population that are exposed to noise levels above the Important Areas noise limit value (see Section 6.4) within the MIA(s) associated with the PIA

Table 34: CCiC: Priority Important Area (PIA) Summary (2)

PIA	Source	MIA Criterion (People HA per 100m²)	Area (m²)	Total Population*	Harmful Effects Statistics**			Percentage Population***	Percentage Harmful Effects****		
					HA	HSD	IHD		HA	HSD	IHD
CCiC_1	ROAD	15	159,600	2541.11	371.41	64.71	0.39	1.2%	2.1%	2.0%	2.4%
CCiC_2	ROAD	15	194,900	3153.4	582.44	154.79	0.68	1.5%	3.4%	4.7%	4.2%
CCiC_3	ROAD	15	24,200	480.69	65.97	11.35	0.06	0.2%	0.4%	0.3%	0.4%
CCiC_4	ROAD	15	69,100	1077.08	163.87	35.32	0.19	0.5%	0.9%	1.1%	1.2%
CCiC_5	ROAD	15	17,800	341.04	65.68	20.99	0.08	0.2%	0.4%	0.6%	0.5%
CCiC_6	ROAD	15	28,600	565.34	71.89	7.75	0.06	0.3%	0.4%	0.2%	0.4%
CCiC_7	ROAD	15	28,300	308.14	50.87	12.42	0.05	0.1%	0.3%	0.4%	0.3%
CCiC_8	ROAD	15	18,600	264.31	52.5	14.06	0.06	0.1%	0.3%	0.4%	0.4%
CCiC_9	ROAD	15	33,000	486.46	120.85	35.33	0.14	0.2%	0.7%	1.1%	0.9%

* Total population inside all Most Important Areas (MIAs) associated with the Priority Important Area (PIA)

** The harmful effects presented in this table are determined from a statistical approach across the whole population covered by the noise maps, and should not be considered to be an accurate assessment of the possible health effects at any specific building

*** Percentage of the total population inside all MIAs associated with the PIA from the total population in the APA administrative area

**** Percentage of the total harmful effect inside all MIAs associated with the PIA from the harmful effects of the APA administrative area

Table 35: CCiC: Priority Important Area (PIA) Summary (Road Noise – All Sources)

		Number of People in Noise Exposure Band (dB L_{den})					Number of People in Noise Exposure Band (dB L_{night})				
PIA	**Source**	**55-59**	**60-64**	**65-69**	**70-74**	**>=75**	**50-54**	**55-59**	**60-64**	**65-69**	**>=70**
CCiC_1	ROAD	480.43	1240.85	286.08	1.84	0	389.86	22.25	0	0	0
CCiC_2	ROAD	413.96	847.51	1166.67	230.2	4.91	764.75	588.7	443.48	10.79	0
CCiC_3	ROAD	82.12	260.46	0	0	0	24.66	0	0	0	0
CCiC_4	ROAD	89.89	540.17	188.11	0	0	422.52	35.98	0	0	0
CCiC_5	ROAD	0	270.73	62.35	7.96	0	248.19	84.89	7.96	0	0
CCiC_6	ROAD	238.1	154.19	32.91	0	0	30.85	0	0	0	0
CCiC_7	ROAD	140.07	154.87	13.18	0	0	129.43	1.82	0	0	0
CCiC_8	ROAD	4.39	38.95	176.03	0	0	71.97	131.46	0	0	0
CCiC_9	ROAD	42.39	83.61	15.57	40.22	192.54	86.31	0	40.22	192.54	0

10.10 Areas to be Preserved for Environmental Noise Quality

The approach and criteria used to identify Candidate Quiet Areas for the Agglomeration has been explained in **Section 7.3.1**, and the Candidate Quiet Areas are presented in **Section 7.3.2**. The Candidate Quiet Areas identified within the Cork City Council administrative area are summarised in **Table 36**, and shown in figures presented in **Section 10.13**.

Investigations into whether there is an appropriate benefit to delimiting the Candidate Quiet Area as a Quiet Area may include consideration of sound pressure measurements, visitor experience, expert assessment, and other local community evaluation criteria (see **Section 7.4**).

Given the resources available it may not be possible to investigate all Candidate Quiet Areas summarised in **Table 36** during the implementation of the Noise Action Plan. Therefore, Cork City County Council will aim to prioritise a shortlist of areas for initial focus. This selection process shall consider aspects such as the median noise level, population within 1,000m, size of the area and relevant local factors such as amenity/community value.

Table 36: CCiC: Summary of Candidate Quiet Areas (CQAs)

CQA ID	Name	Electoral Area	Easting	Northing	Area (m^2)	Pop. within 1,000m	Noise Level, $L_{Aeq, 16hr}$, dB	Area of CQA below 45 dB $L_{Aeq, 16hr}$ (m^2)	CQA Criteria
C_CITY_5	Tank Field	North East LEA-6	569606	573118	42,674	11,486	45	22,408	A
C_CITY_14	The Glen River Park	North East LEA-6	568516	573555	176,029	20,674	46	74,716	A
C_CITY_25	Glentrasna Park	North East LEA-6	567723	573177	14,434	17,211	50	504	R
C_CITY_12	Laburnum Green Fairhill	North West LEA-6	566449	574033	31,381	10,153	48	565	A
C_CITY_17	Bantry Park Road Green, Churchfield	North West LEA-6	566357	573246	15,400	18,037	48	100	A
C_CITY_53	Kilmore Park	North West LEA-6	565165	572900	18,623	9,377	45	8,663	A
C_CITY_62	St. John's Well, Fairhill	North West LEA-6	566418	574178	7,381	8,134	47	595	A
C_CITY_16	Regional Park, Ballincollig	North West LEA-6 and	558483	571267	597,852	15,669	46	132,482	A

CQA ID	Name	Electoral Area	Easting	Northing	Area (m^2)	Pop. within 1,000m	Noise Level, $L_{Aeq, 16hr}$, dB	Area of CQA below 45 dB $L_{Aeq, 16hr}$ (m^2)	CQA Criteria
		South West LEA-7							
C_CITY_21	Cork Skate Park & Green Area at Mardyke Bridge	South Central LEA-6	566259	571772	8,363	17,976	52	0	R
C_CITY_24	Vernon Mount Walkway, Grange	South Central LEA-6	568604	568730	46,192	10,710	48	14,615	A
C_CITY_59	Fitzgerald's Park	South Central LEA-6	565873	571645	41,756	16,043	49	2,347	A
C_CITY_61	Deerpark	South Central LEA-6	567062	570958	10,757	20,027	51	0	R
C_CITY_15	Marina Park	South East LEA-6	569824	571917	46,211	6,870	54	0	#
C_CITY_18	Beaumont Park	South East LEA-6	570351	571021	122,586	10,981	51	11,600	#
C_CITY_55	Holland Park (Marina Park)	South East LEA-6	571051	571871	31,652	8,317	59	0	#
C_CITY_63	Atlantic Pond (Marina Park)	South East LEA-6	570488	572049	162,193	15,208	55	1,300	#

CQA ID	Name	Electoral Area	Easting	Northing	Area (m^2)	Pop. within 1,000m	Noise Level, $L_{Aeq, 16hr}$, dB	Area of CQA below 45 dB $L_{Aeq, 16hr}$ (m^2)	CQA Criteria
C_CITY_46	Murphy's Farm	South West LEA-7	562989	569874	6,830	4,992	49	0	A
C_CITY_58	Elton Lawn	South West LEA-7	563333	570100	9,864	6,935	48	25	A

CQA Criteria: A - Absolute CQA, R – Relative CQA, * - Existing designated Quiet Area, # - APA requested CQA

10.11 Mitigation and Protection Measures and Actions

An overview of the general prevention, protection and mitigation measures that could be considered for the management of noise from road, rail and industry within the Agglomeration is presented within **Section 8**.

This section considers those measures in a local context, together with key local noise management related policy guidelines and local and regional projects and set out the framework that Cork City Council intends to follow to help manage and mitigate the effects of exposure to environmental noise.

The environmental noise management measures within the framework are presented across the three policy principle categories covered by the **Noise Policy Statement**, together with a fourth supporting 'General' category as follows;

- General – Noise Management Measures
- Prevention – Noise Management Measures
- Protection – Noise Management Measures
- Mitigation – Noise Management Measures.

In some instances, measures do not necessarily stand in isolation and may be relevant for, or overlap, with other categories.

Furthermore, the measures collectively support the **Responsible Aims** which underpin the **Noise Policy Statement**. A summary of the **Responsible Aims** that are achieved, or partially achieved, through the proposed measure is set out in **Table 38**.

When considering the broader framework of measures and actions aimed at mitigating exposure to environmental noise from the transport and industry sectors, it is important to emphasize that Cork City Council, in some instances, does not have exclusive ownership or influence over certain noise sources, areas, and the measures presented in this Noise Action Plan. Many of the measures and actions will require input, collaboration, and execution by other infrastructure owners, along with support from government departments and bodies through relevant legislation and funding.

In addition to third-party collaboration, the successful implementation of this Noise Action Plan will also depend on the availability of adequate resources to execute the proposed measures and actions.

The measures are described below across each of the four categories. The measures, and associated actions are presented in **Table 38**.

10.11.1 General – Noise Management Measures

General noise noise management measures cover a range of activities to support the implementation of the Noise Action Plan including other measures across the three policy principle categories.

Measure CCiC_M1: Support the Development of National Noise and Other Related Policy and Guidance

At present there is no national policy relating specifically to noise other than specific objectives set out within a range of national plans and strategies such Policy Objective 65 from the National Planning

Framework 2040. Furthermore, there is no adopted consistent approach for Local Authorities to apply in the evaluation of noise issues at the planning application stage. Some have developed their own guidelines, and many apply the ProPG approach which is used within the UK. Development of national policy and guidelines will be the responsibility of the Department of Environment, Climate and Communications (DECC).

In addition to specific national policy and guidance relating to noise, other national policy and guidance can have an indirect impact on noise related issues. An example includes the National Speed Limit Review lead by the Department of Transport and published in September 2023.

Cork City Council will actively support and engage with the development of national policy and guidance on the subject of noise and all related policy.

Measure CCiC_M2: Noise Action Plan Working Group(s)

Cork City Council will support the establishment of relevant noise working groups both within Cork City Council to co-ordinate the activities and actions from the Noise Action Plan and with Cork County Council as part of the wider agglomeration to co-ordinate and collaborate with the relevant Noise Mapping Bodies (Transport Infrastructure Ireland & Iarnród Éireann) in respect of noise management issues in general and mitigation measures at a Priority Important Area level.

Measure CCiC_M3: Annual Report to Environment Protection Agency (EPA)

Cork City Council will prepare an annual report for the EPA setting out progress made in respect of the implementation of the Noise Action Plan including the investigations of Priority Important Areas and implementation of noise mitigation measures for those areas and other general areas.

In addition, progress with respect to the assessment of the Candidate Quiet Areas will be presented together with any recommendations for referring any of these areas to the EPA and the Minister for designating as a Quiet Area. Cork City Council will liaise with relevant third party infrastructure owners in respect of progress made by them with implementing actions that may be relevant for them and their infrastructure.

Measure CCiC_M4: Continued Investigation and Management of Noise Complaints

Cork City Council's Environment Section investigates complaints under the provisions of the Environmental Protection Agency Act 1992 (Noise) Regulations 1994. The Unit has regard to best international best practice guidelines and standards.

Measure CCiC_M5: Stakeholder Collaboration

Cork City Council's Environment Section actively collaborates with a number of stakeholders in relation to potential and existing air /noise nuisances:

- **EPA - IPC Licences** - The Environmental Section collaborates with the EPA in the investigation of noise complaints within the city boundary.
- **Irish Rail** - The Environment Section liaises with Irish Rail as required in relation to complaints, night time works, and infrastructure projects which may increase noise levels.
- **Port of Cork** - The Environment Section engages directly with the Port of Cork in relation to noise emissions and noise monitoring in the Port of Cork area.

- **TII & National Roads** Office – The Environment Section liaises with TII and the National Roads Office in relation to noise complaints within the city boundary.

Measure CCiC_M6: Ongoing Community Engagement

A key requirement in the development of the strategic noise maps and Noise Action Plan is that the information is made available to the public in a clear, comprehensible, and accessible manner. Furthermore, the public should be consulted on the preparation of the Noise Action Plan, provided with the opportunity to participate and comment on the Noise Action Plan, and the feedback from public engagement should be considered when finalizing the Plans.

To date the strategic noise maps, together with background information, has been published on the Cork City Council website and a period of formal public consultation held on the draft Noise Action Plan. Furthermore, engagement has been on-going through the elected representatives of Cork City Council through the relevant Strategic Policy Committee and Local Area Committee meetings.

As part of the implementation of the Noise Action Plan, it is proposed to continue with, and build on this public engagement as part of the evaluation of the Priority Important Areas and also through engagement on relevant existing Plans and Projects.

10.11.2 Prevention – Noise Management Measures

Measure CCiC_M7: Planning Application Advice, Conditioning and Enforcement

Cork City Council's Environment Section consults directly with the Planning Department advising on planning applications and enforcement of planning conditions in relation to noise emissions and have standard planning conditions in relation to the construction and operation stages of development for this purpose.

In reviewing and advising on planning applications the Environment Section will give due consideration to the existing strategic noise maps and this Noise Action Plan and in particular any Candidate Quiet Areas.

10.11.3 Protection - Noise Management Measures

Measure CCiC_M8: Evaluation of Shortlisted Candidate Quiet Areas

Cork City Council will complete an initial evaluation of each of the shortlisted Candidate Quiet Areas identified **Section 10.10**, **Table 36**. The objective of the evaluation process will be to confirm the validity of the Candidate Quiet Area for delimiting as a Quiet Area.

The evaluation will include some or all the elements described in **Section 7.3.2.** For instance, in order to assess the value of each site to the local community, it may be appropriate to evaluate the soundscape of each site through the visitor experience and stakeholder engagement process and by undertaking organized soundwalks or other applicable methodologies.

The results of the evaluation will be used to make a recommendation on whether to designate the site as a Quiet Area or not.

Measure CCiC_M9: Proposal for Quiet Area(s) Designation

For each of the Candidate Quiet Areas that are recommended for designation as a Quiet Area, a proposal will be prepared setting out the findings of the investigations and the feedback from the consultation process to support the recommendation for the area being designated as a Quiet Area.

This will be consulted with the EPA before being issued to the Minister of the Environment, Climate and Communications to approve the delimitation of the recommended Candidate Quiet Areas as a Quiet Area.

10.11.4 Mitigation – Noise Management Measures

Existing Plans, Projects and Strategies

Measure CCiC_M10: Support the Implementation of Other Relevant Plans, Projects and Strategies

There are a number of existing plans, projects and strategies which aim to deliver more sustainable infrastructure and services for the city of Cork and its surrounding areas. The successful implementation of these will bring indirect benefits for noise reduction through encouraging more sustainable modes of transport in combination with reduced traffic volumes. Key examples with noise benefit synergies include;

- the Cork Metropolitan Area Transport Strategy 2040
- the Cork City Climate Action Plan 2024-2029
- Cork City Council Air Quality Strategy 2021-2026

This measure aims to work collaborative with each of these to support their implementation and engage on aspects for noise management and benefits.

Priority Important Areas

Measure CCiC_M11: Evaluation of each Priority Important Area

Cork City Council will complete an evaluation of each Priority Important Area identified in this chapter of the Noise Action Plan. Where the Priority Important Area relates to infrastructure that is exclusively the responsibility of and managed by Cork City Council, then the evaluation will be completed exclusively by Cork City Council. Where the Priority Important Area relates to infrastructure for which a third party has overall responsibility, then the evaluation will require significant input from the relevant infrastructure owner, such as Transport Infrastructure Ireland and/or Irish Rail.

The objective of the evaluation process will be to confirm the validity of the Priority Important Area and identify the most appropriate noise mitigation measures through detailed economic and health benefits appraisal. The steps in the evaluation process are described in **Section 8.4**.

Measure CCiC_M12: Review Road Maintenance Works Programme for Noise Benefits within PIAs and other Areas

The Roads Maintenance Services (RMS) section of Cork City Council implements an annual programme of road maintenance works. The works packages included within each annual programme are identified based on road condition and other relevant criteria such as customer enquiries, road safety etc.

It is proposed to work with RMS to review their proposed annual roads maintenance programme in the context of the Priority Important Areas identified and the strategic noise maps produced to incorporate, where possible, road noise within the decision criteria process and to support the use of low noise road surface types where feasible and appropriate to do so.

Measure DCC_M13: Implementation of Recommended Noise Mitigation Measures

Subject to the outcome of CCiC_M11, Cork City Council will implement measures deemed technically, economically, and environmentally justified as part of this round of the Noise Action Plan or future rounds, contingent upon resources and funding.

Implementation will involve reviewing the effectiveness of the measures through monitoring where appropriate. The implementation of measures related to infrastructure not under Cork City Council's responsibility should be carried out by the third parties responsible for that infrastructure. Cork City Council will coordinate with these parties in monitoring progress and reporting to the EPA as part of the annual report.

Consideration will be given to funding sources and will include liaising with relevant Cork City Council sections and projects as well as third parties and government departments with a view to securing funding for relevant measures or ensuring the noise measures are incorporated within existing funding streams for existing projects.

Potential Priority Important Area Noise Mitigation Measures

Measure CCiC_M11 commits to undertaking an evaluation of each Priority Important Area including the identification of appropriate noise mitigation measures for each area. Table 37 below provides a summary of some of the potential noise mitigation measures that could be considered for each area, including where appropriate reference to relevant measures set out in this Section 10.11 of the Noise Action Plan (measure number is included in brackets).

Measures presented in the table below are for consideration only and would need to be fully evaluated through the completion of Measure CCiC_M11 to confirm their appropriateness and justification for each Priority Important Area. Any potential measures for national roads would need to be reviewed, discussed, and agreed with TII for the relevant Priority Important Areas.

Table 37: CCiC: Priority Important Area (PIA) Example Mitigation Measure Considerations

PIA	Source	Noise Reduction at Source	Noise Abatement Operating Procedures	Community Engagement and Responsible Actions	Operational Restrictions	Land-Use Planning and Management	Comments
CCiC_1	ROAD	Low Noise Road Surfacing Road Resurfacing (CCiC_M12)	Implementation of Plans (CCiC_M10)	Community & Stakeholder Engagement (CCiC_M4 & M5)	Implementation of Plans (CCiC_M10) Speed Limit Review Traffic Calming & Management	Implementation of Plans (CCiC_M10) Planning Applications (CCiC_M7) Policy & Guidance (CCiC_M1)	Noise barriers not suitable for urban city centre environment
CCiC_2	ROAD	Low Noise Road Surfacing Road Resurfacing (CCiC_M12)	Implementation of Plans (CCiC_M10)	Community & Stakeholder Engagement (CCiC_M4 & M5)	Implementation of Plans (CCiC_M10) Speed Limit Review Traffic Calming & Management	Implementation of Plans (CCiC_M10) Planning Applications (CCiC_M7) Policy & Guidance (CCiC_M1)	Noise barriers not suitable for urban city centre environment
CCiC_3	ROAD	Low Noise Road Surfacing Road Resurfacing (CCiC_M12)	Implementation of Plans (CCiC_M10)	Community & Stakeholder Engagement (CCiC_M4 & M5)	Implementation of Plans (CCiC_M10) Speed Limit Review Traffic Calming & Management	Implementation of Plans (CCiC_M10) Planning Applications (CCiC_M7) Policy & Guidance (CCiC_M1)	Noise barriers not suitable for urban city centre environment

PIA	Source	Noise Reduction at Source	Noise Abatement Operating Procedures	Community Engagement and Responsible Actions	Operational Restrictions	Land-Use Planning and Management	Comments
CCiC_4	ROAD	Low Noise Road Surfacing Road Resurfacing (CCiC_M12)	Implementation of Plans (CCiC_M10)	Community & Stakeholder Engagement (CCiC_M4 & M5)	Implementation of Plans (CCiC_M10) Speed Limit Review Traffic Calming & Management	Implementation of Plans (CCiC_M10) Planning Applications (CCiC_M7) Policy & Guidance (CCiC_M1)	Noise barriers not suitable for urban city centre environment
CCiC_5	ROAD	Low Noise Road Surfacing Road Resurfacing (CCiC_M12)	Implementation of Plans (CCiC_M10)	Community & Stakeholder Engagement (CCiC_M4 & M5)	Implementation of Plans (CCiC_M10) Speed Limit Review Traffic Calming & Management	Implementation of Plans (CCiC_M10) Planning Applications (CCiC_M7) Policy & Guidance (CCiC_M1)	Noise barriers in place at this location
CCiC_6	ROAD	Low Noise Road Surfacing Road Resurfacing (CCiC_M12)	Implementation of Plans (CCiC_M10)	Community & Stakeholder Engagement (CCiC_M4 & M5)	Implementation of Plans (CCiC_M10) Speed Limit Review Traffic Calming & Management	Implementation of Plans (CCiC_M10) Planning Applications (CCiC_M7) Policy & Guidance (CCiC_M1)	Noise barriers not suitable for urban city centre environment
CCiC_7	ROAD	Low Noise Road Surfacing Road Resurfacing	Implementation of Plans (CCiC_M10)	Community & Stakeholder Engagement (CCiC_M4 & M5)	Implementation of Plans (CCiC_M10) Speed Limit Review	Implementation of Plans (CCiC_M10)	Noise barriers not suitable for urban city centre environment

PIA	Source	Noise Reduction at Source	Noise Abatement Operating Procedures	Community Engagement and Responsible Actions	Operational Restrictions	Land-Use Planning and Management	Comments
		(CCiC_M12)			Traffic Calming & Management	Planning Applications (CCiC_M7) Policy & Guidance (CCiC_M1)	
CCiC_8	ROAD	Low Noise Road Surfacing Road Resurfacing (CCiC_M12)	Implementation of Plans (CCiC_M10)	Community & Stakeholder Engagement (CCiC_M4 & M5)	Implementation of Plans (CCiC_M10) Speed Limit Review Traffic Calming & Management	Implementation of Plans (CCiC_M10) Planning Applications (CCiC_M7) Policy & Guidance (CCiC_M1)	Noise barriers not suitable for urban city centre environment
CCiC_9	ROAD	Low Noise Road Surfacing Road Resurfacing (CCiC_M12)	Implementation of Plans (CCiC_M10)	Community & Stakeholder Engagement (CCiC_M4 & M5)	Implementation of Plans (CCiC_M10) Speed Limit Review Traffic Calming & Management	Implementation of Plans (CCiC_M10) Planning Applications (CCiC_M7) Policy & Guidance (CCiC_M1)	Noise barriers not suitable for urban city centre environment

10.11.5 Noise Management Framework – Summary of Actions

A summary of the proposed noise management measures is set out in **Table 38** below together with details of the proposed action(s) for each. **Table 38** also sets out the **Responsible Aims** that each measure helps to support through the implementation of the Plan.

Table 38: CCiC: Noise Management Framework – Summary of Actions

Measure	Responsible Aim (RA)	Measure Description	Action
General – Noise Management Measures			
CCiC_M1	RA_1 & 5	Support the Development of National Noise and Other Related Policy and Guidance	Support the Department of Environment, Climate and Communications (DECC) and other government departments and bodies in the development of national noise and other related policies and guidance, and assist in their implementation once in place.
CCiC_M2	RA_2, 3, 4 & 5	Noise Action Plan Working Group(s)	Support the establishment of and participate in relevant Noise Working Groups established to deliver the Noise Action Plan
CCiC_M3	RA_8	Annual Report to Environment Protection Agency (EPA)	Prepare an annual progress report regarding the implementation of the Noise Action Plan and submit it to the EPA.
CCiC_M4	RA_5 & 7	Continued Investigation and Management of Noise Complaints	Review and investigate all noise complaints received in a timely manner and in accordance with national and international best practice.
CCiC_M5	RA_3, 4 & 5	Stakeholder Collaboration	Continue liaison and collaboration with a range of key stakeholders to address noise-related issues and complaints to ensure the effective management of noise from related industry and infrastructure sites.
CCiC_M6	RA_3, 4, 5 & 6	Ongoing Community Engagement	Publish the final Noise Action Plan and provide updates on the progress made with its implementation.

Prevention – Noise Management Measures			
CCiC_M7	RA_5	Planning Application Advice, Conditioning and Enforcement	Review relevant planning applications for noise related issues in the context of existing Strategic Noise Maps, this Noise Action Plan and existing or candidate Quiet Areas and condition developments as appropriate to manage impacts on ambient noise levels.
Protection – Noise Management Measures			
CCiC_M8	RA_4	Evaluation of Shortlisted Candidate Quiet Areas	For each shortlisted Candidate Quiet Area carry out an investigation of the area and make a recommendation on whether to designate each area as a Quiet Area or not.
CCiC_M9	RA_4	Proposal for Quiet Area(s) Designation	For all Candidate Quiet Areas recommended for designation, prepare proposal for EPA consultation and Ministerial Approval.
Mitigation – Noise Management Measures			
Existing Plans, Projects and Strategies			
CCiC_M10	RA_3 & 5	Support Implementation of Other Relevant Plans, Projects & Strategies	Collaborate with relevant Cork City Council sections and 3rd Party organisations to support the implementation of the following; • the Cork Metropolitan Area Transport Strategy 2040 • the Cork City Climate Action Plan 2024-2029 • Cork City Council Air Quality Strategy 2021-2026
Priority Important Areas			
CCiC_M11	RA_3	Evaluation of each Priority Important Area	For each Priority Important Area, conduct a review and update of the noise model used in the development of the strategic noise maps, including the completion of sound measures where appropriate. Additionally, perform a detailed appraisal of the noise mitigation measures in each area to identify the preferred measure(s) for implementation, if any.

CCiC_M12	RA_3	Review Road Maintenance Works Programme for Noise Benefits within PIAs and other Areas	Meet with Roads Maintenance Section as required to review the proposed annual works program including consideration of works locations and road surface type in the context of existing Priority Important Areas and in general.
CCiC_M13	RA_3	Implementation of Recommended Noise Mitigation Measures	Liaise with relevant Cork City Council sections, third parties, and government departments to secure funding for noise mitigation measures. Implement the measures for which Cork City Council has responsibility and support third parties in the implementation of their measures.

10.12 Noise Action Plan Implementation

A summary of the proposed noise management measures is set out in **Table 38** together with details of the proposed action(s) for each. The table also sets out the **Responsible Aims** that each measure helps to support through the implementation of the Plan.

Figure 15 below provides a summary of the Cork City Council measures in respect of their timescale for implementation over the period of the Plan and beyond, and the **Responsible Aims** which the measure supports, as set out in **Section 9.1.2**.

The timescales presented relate to the period of the Noise Action Plan, 2024 - 2028, and beyond and with the following definitions assumed;

- "Short term" indicates implementation by 2026
- "Medium-term" indicates implementation by 2030
- "Long-term" indicates implementation beyond 2030.

As is shown in **Figure 15**, many of the measures relate to ongoing management activities, maintenance works and longer-term plans and projects. In this regard many of the measures overlap and will be continuous over the period of the Plan.

The establishment of the Cork City Council and Noise Action Plan working groups will significantly improve the co-ordination and collaboration across all parties and will be essential to ensure successful implementation of the measures within and beyond the life of the Plan.

Successful implementation will also be subject to resources and funding.

Figure 15: CCiC: Noise Action Plan Implementation

Cork City Council Measures		Responsible Aim (RA)	Time scale	2024				2025				2026				2027				2028				2029+	
				Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2
Noise Action Plan Preparation																									
	Noise Action Plan Completion		18th July 2024																						
General - Noise Management Measures																									
CCiC_M1	Support National Policy & Guidance	RA_1 & 5	Short to Long-term																						
CCiC_M2	Noise Action Plan Working Group(s)	RA_2, 3, 4 & 5	Bi-annual				Establish																		
CCiC_M3	Annual Report to EPA	RA_8	Annual																						
CCiC_M4	Manage Noise Complaints	RA_5 & 7	Ongoing																						
CCiC_M5	Stakeholder Collaboration	RA_3, 4 & 5	Ongoing																						
CCiC_M6	Ongoing Community Engagement	RA_3, 4, 5 & 6	As Required																						
Prevention - Noise Management Measures																									
CCiC_M7	Planning Applications	RA_5	Ongoing																						
Protection - Noise Management Measures																									
CCiC_M8	Evaluate Shortlisted CQAs	RA_4	Short to Medium-term																						
CCiC_M9	Proposal for Quiet Area Designation	RA_4	Annually																						
Mitigation - Noise Management Measures																									
Existing Plans, Projects and Strategies																									
CCiC_M10	Support Other Plans, Projects & Strategies	RA_3 & 5	Ongoing																						
Priority Important Areas																									
CCiC_M11	Evaluation of each PIAs	RA_3	Short to Medium-term																						
CCiC_M12	Road Maintenance Works Programme	RA_3	Ongoing																						
CCiC_M13	Implement Noise Mitigation Measures	RA_3	Medium to Long-term																						

10.13 Figures

Figures supporting the strategic noise mapping results for Cork City Council are set out in the following section. The figures include a graphical representation of:

- Industry noise contours – carried out to facilitate engagement between Cork City Council and the EPA regarding the evaluation of issues related to industry regulation;
- the Most Important Areas – locations with the greatest concentration of harmful effects;
- the Priority Important Areas – Most Important Areas, or groups of Most Important Areas which will be addressed during the implementation of the Noise Action Plan; and
- the Candidate Quiet Areas identified as candidates to be preserved for their environmental noise quality, and those identified for investigation.

Figure 16: CCiC: Industry – Dwellings Exceeding 55 dB L_{den}

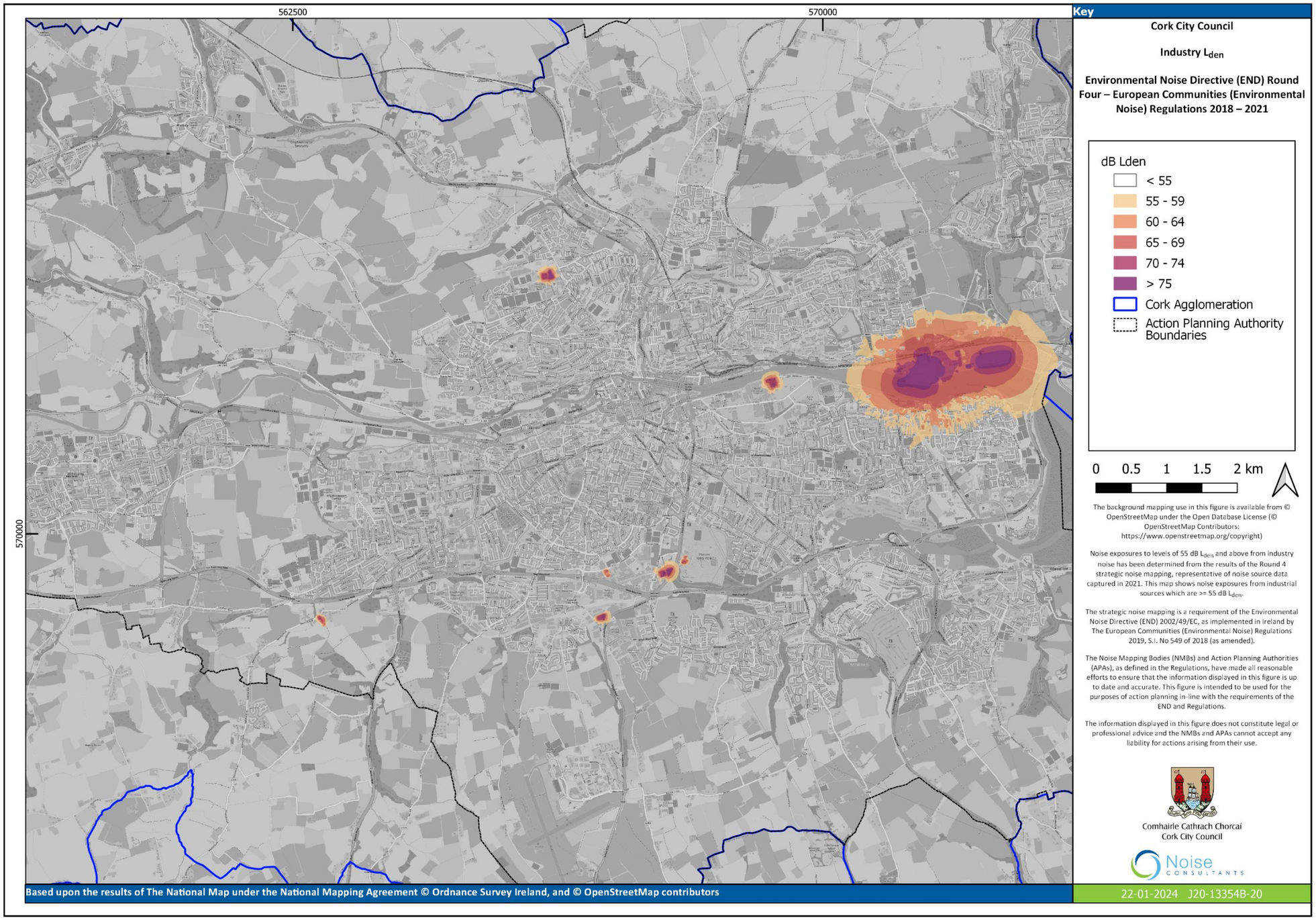


Figure 17: CCiC: Industry – Dwellings Exceeding 55 dB L_{den} (Focussed Area 1)

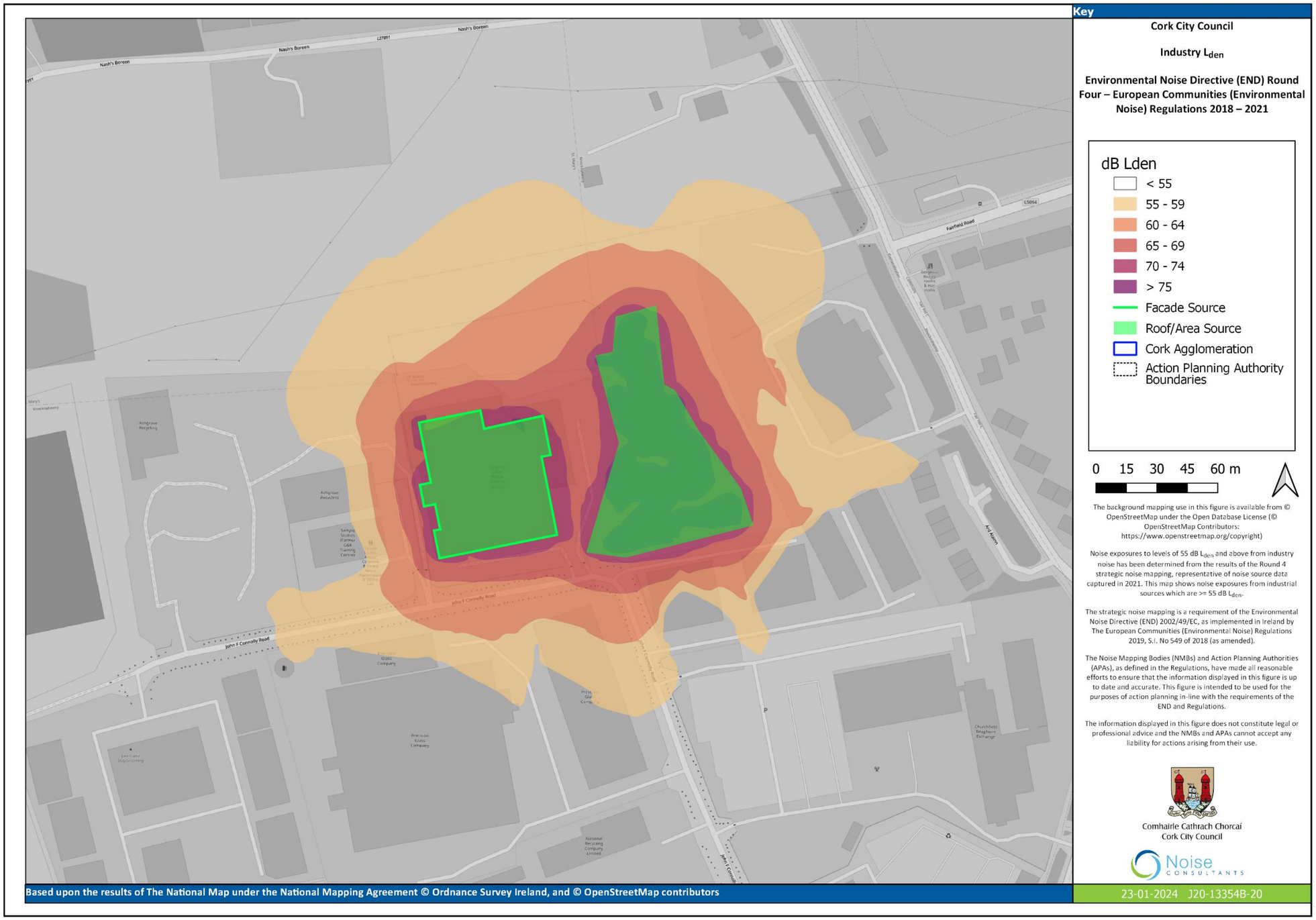


Figure 18: CCiC: Industry – Dwellings Exceeding 55 dB L_{den} (Focussed Area 2)

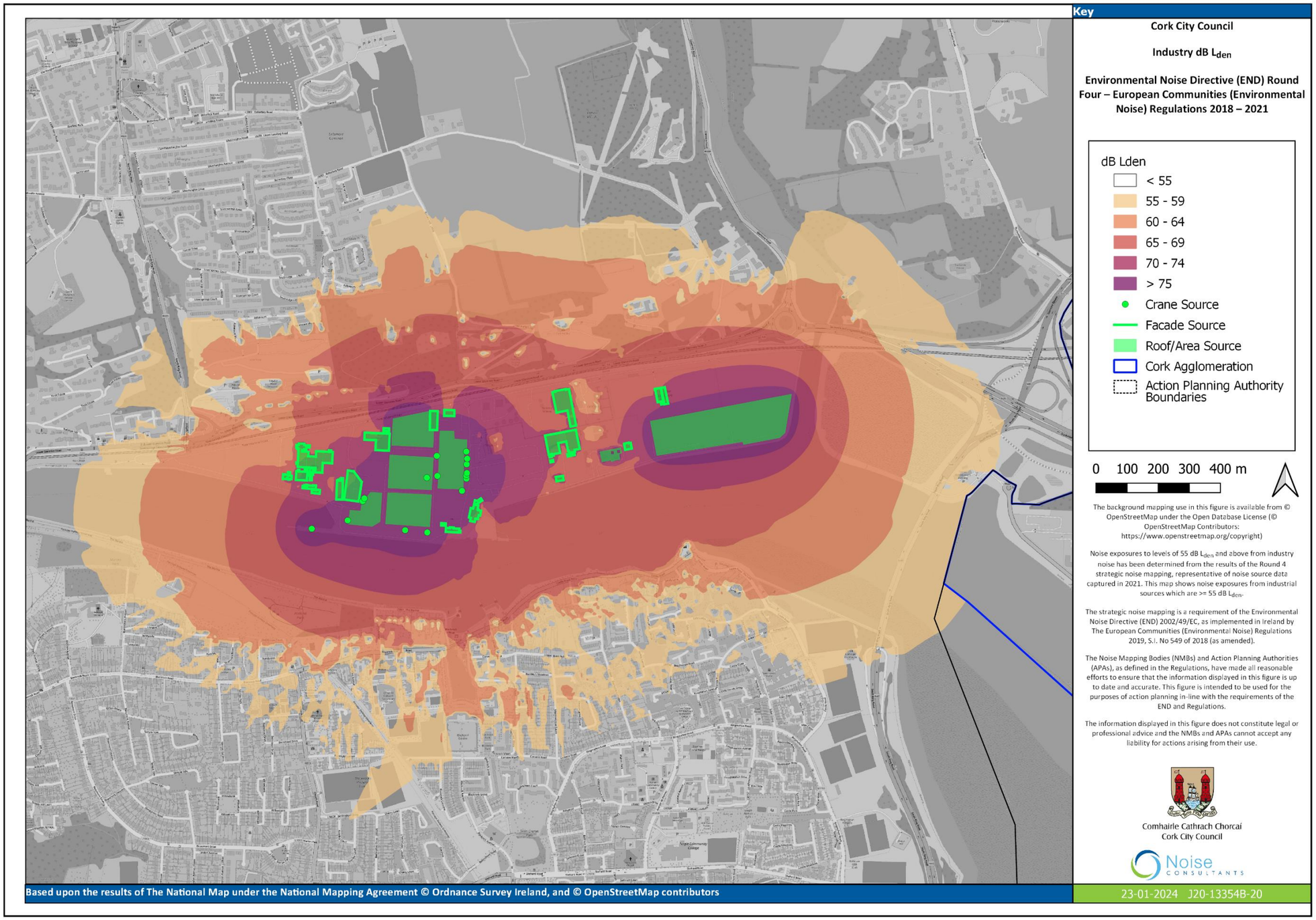


Figure 19: CCiC: Most Important Areas (MIAs)

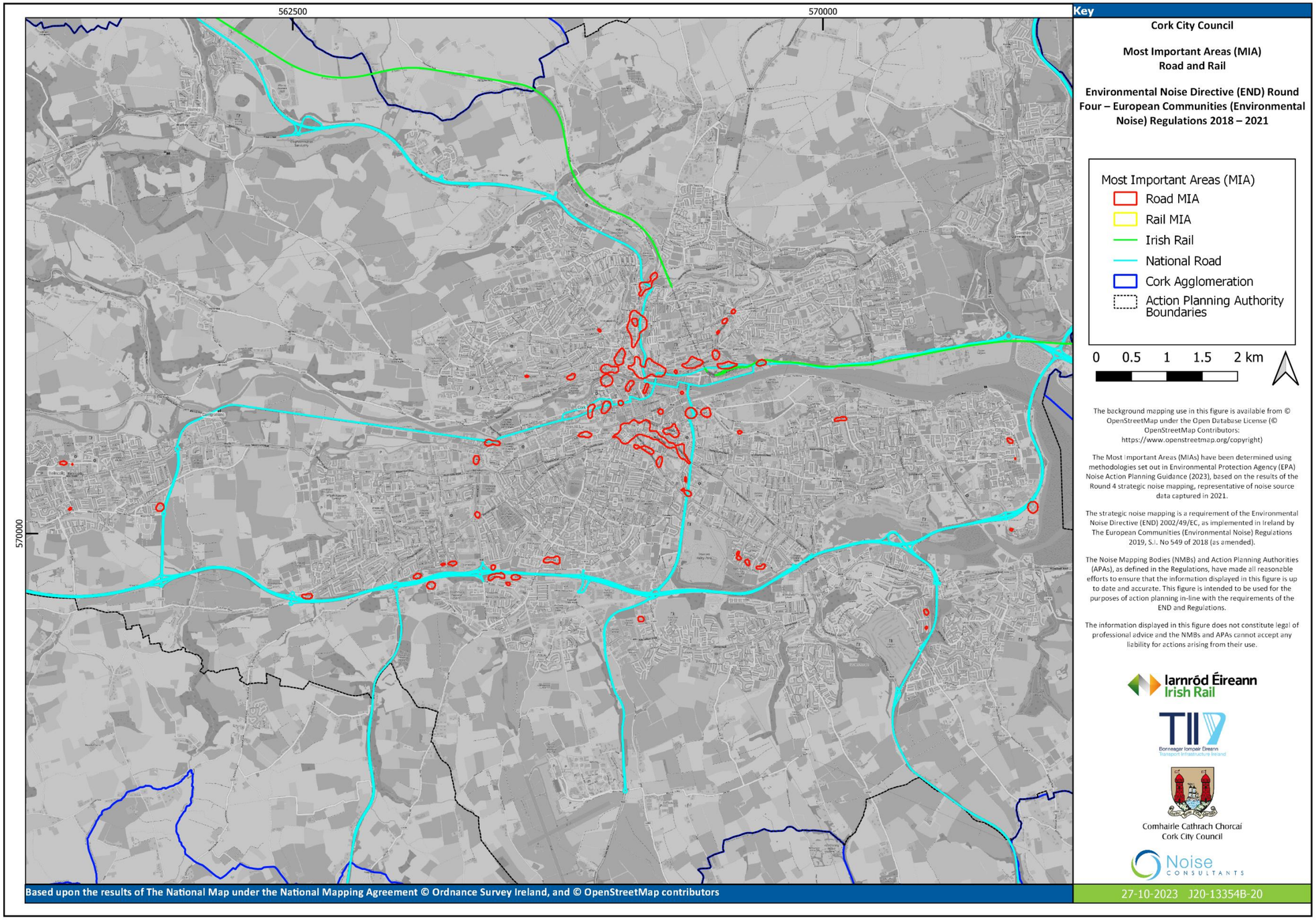


Figure 20: CCiC – Priority Important Areas (PIAs)

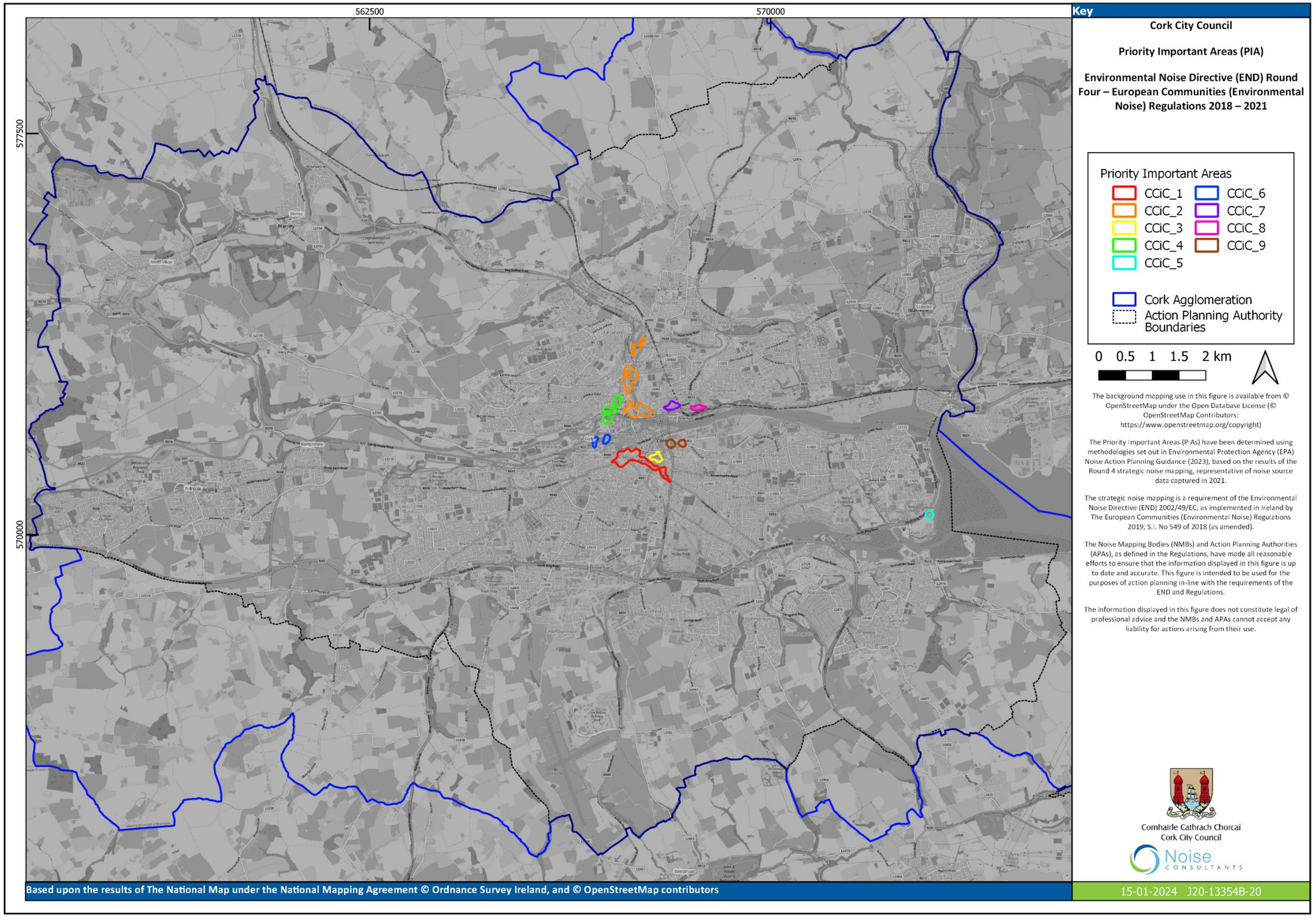


Figure 21: CCiC: Priority Important Area 1 (PIA 1)

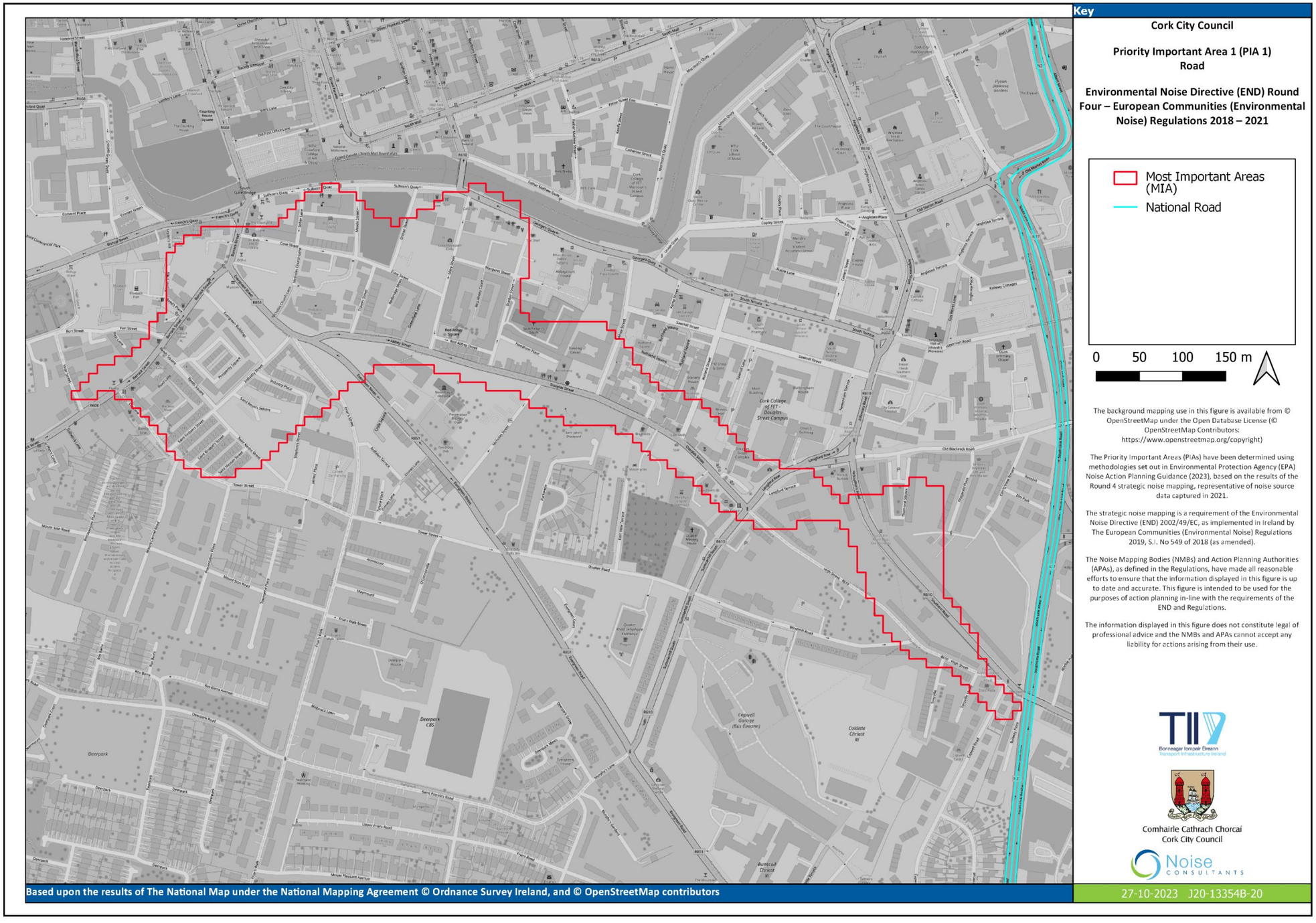


Figure 22: CCiC: Priority Important Area 2 (PIA 2)

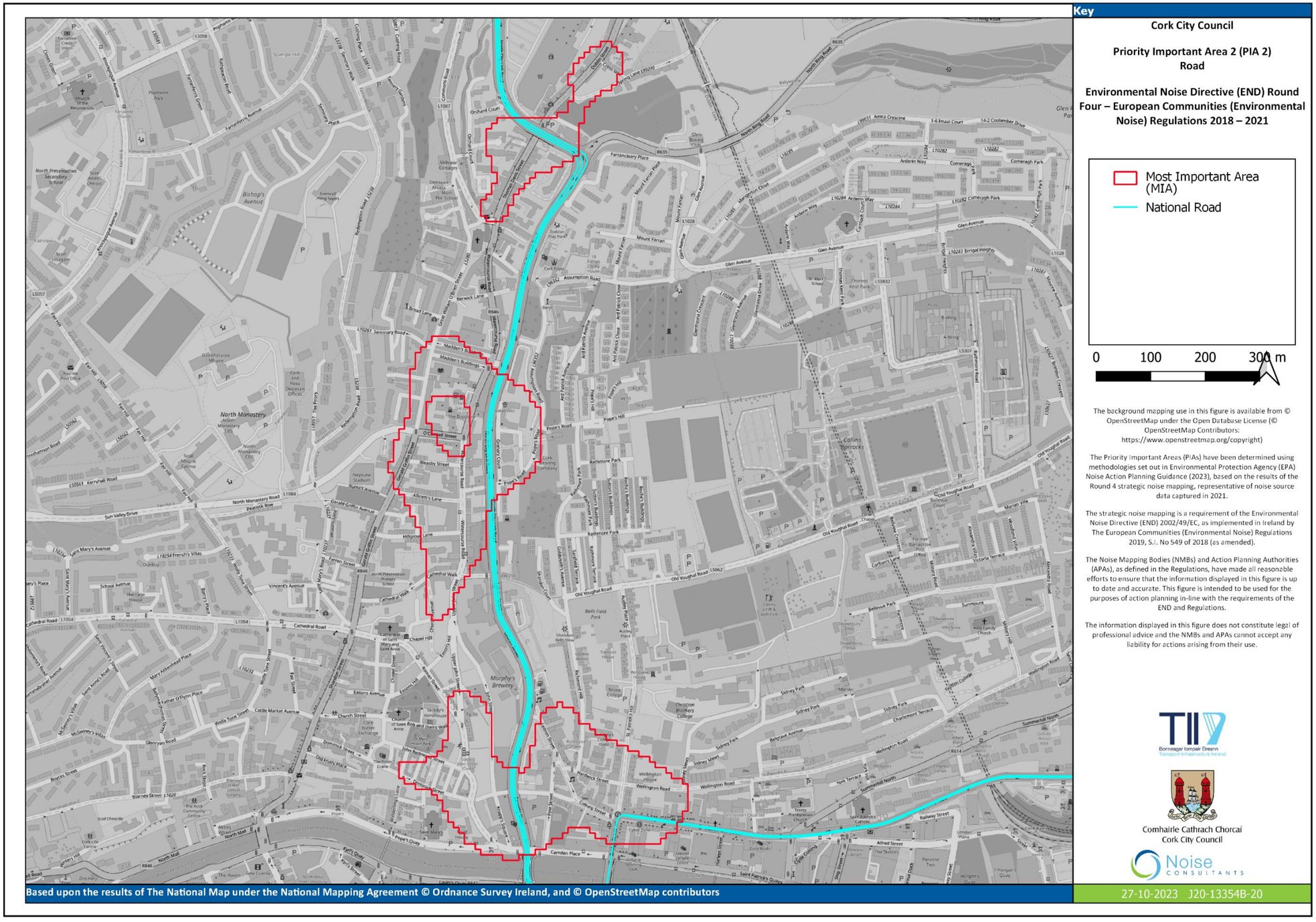


Figure 23: CCiC: Priority Important Area 3 (PIA 3)

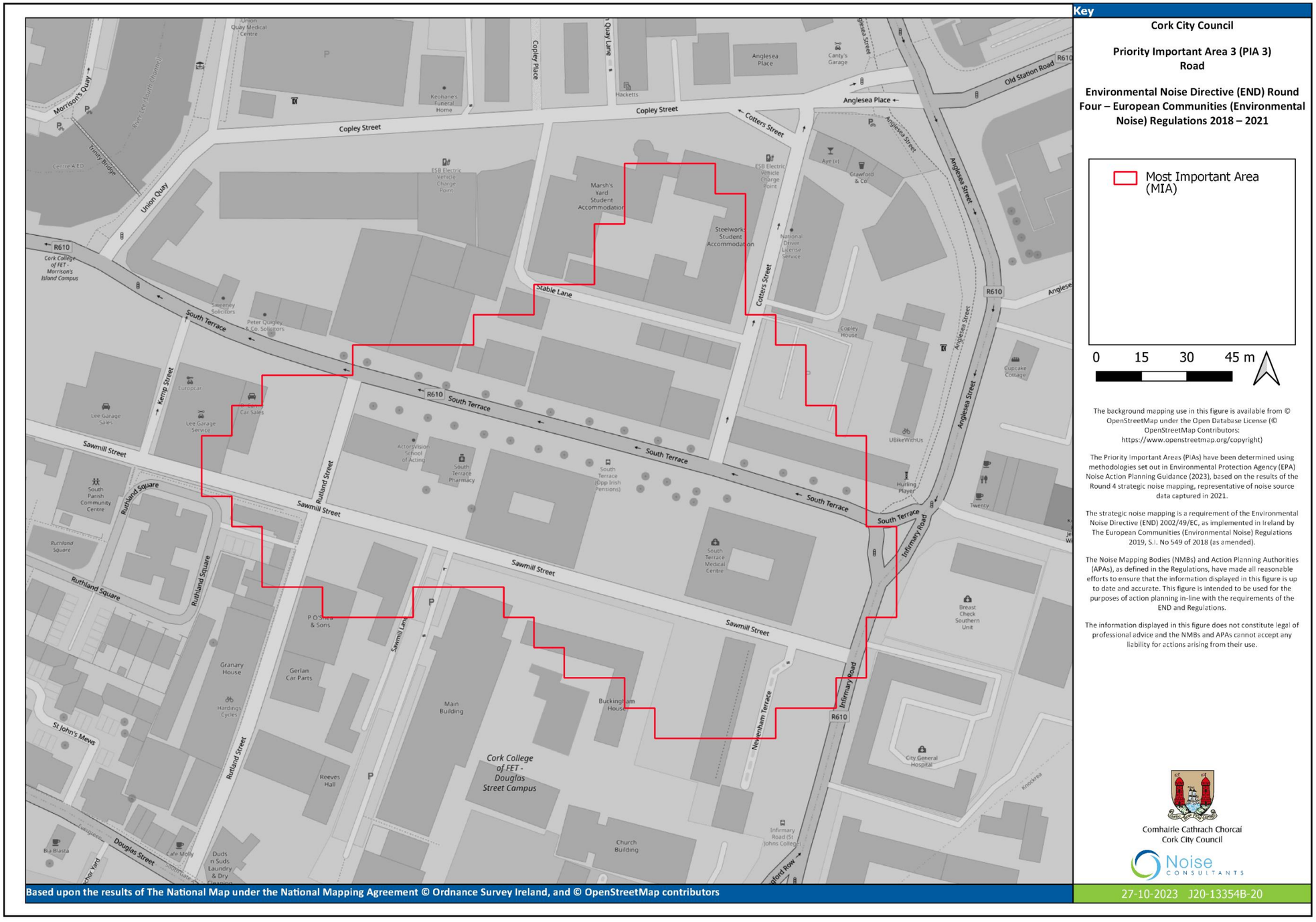


Figure 24: CCiC: Priority Important Area 4 (PIA 4)

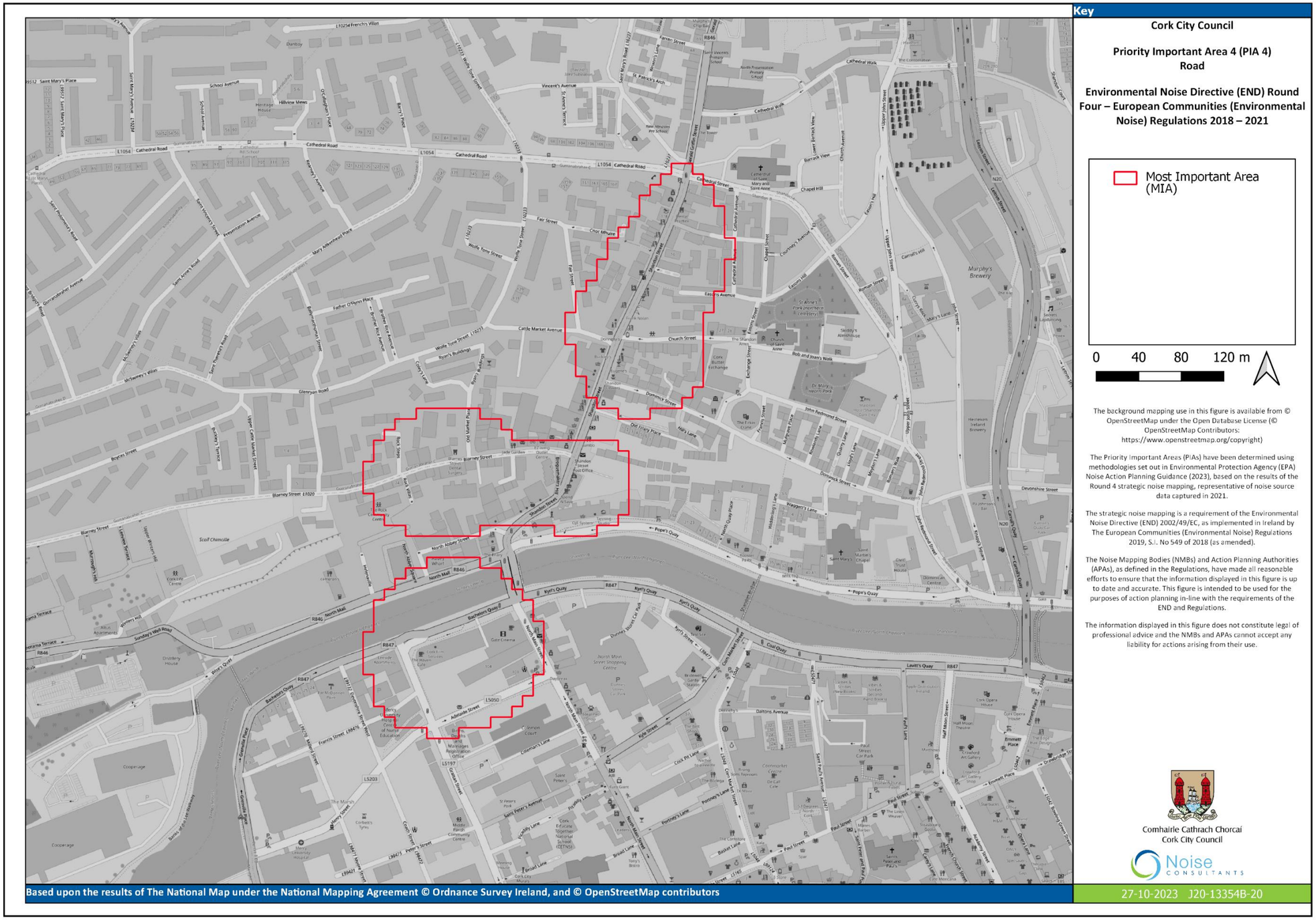


Figure 25: CCiC: Priority Important Area 5 (PIA 5)

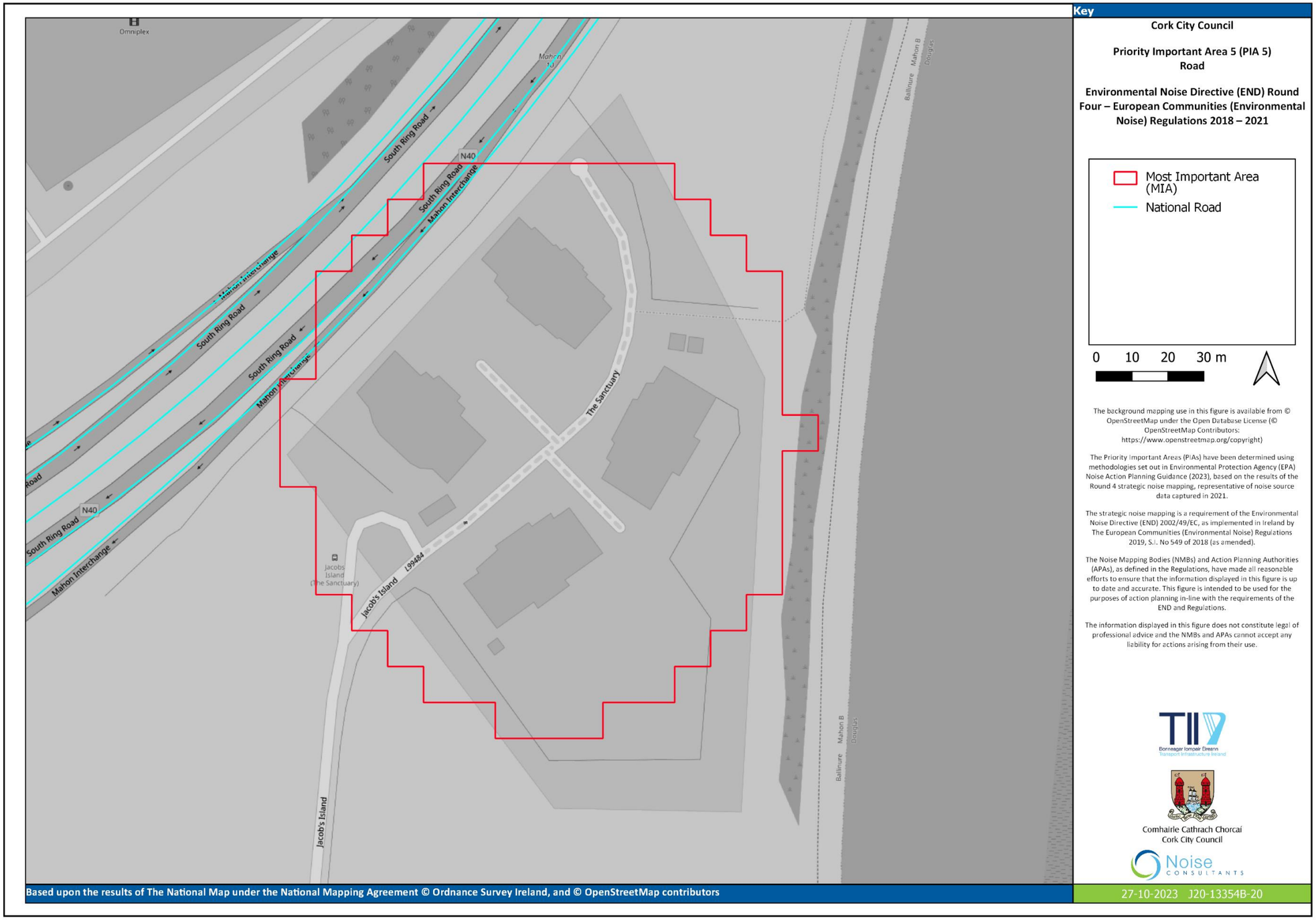


Figure 26: CCiC: Priority Important Area 6 (PIA 6)

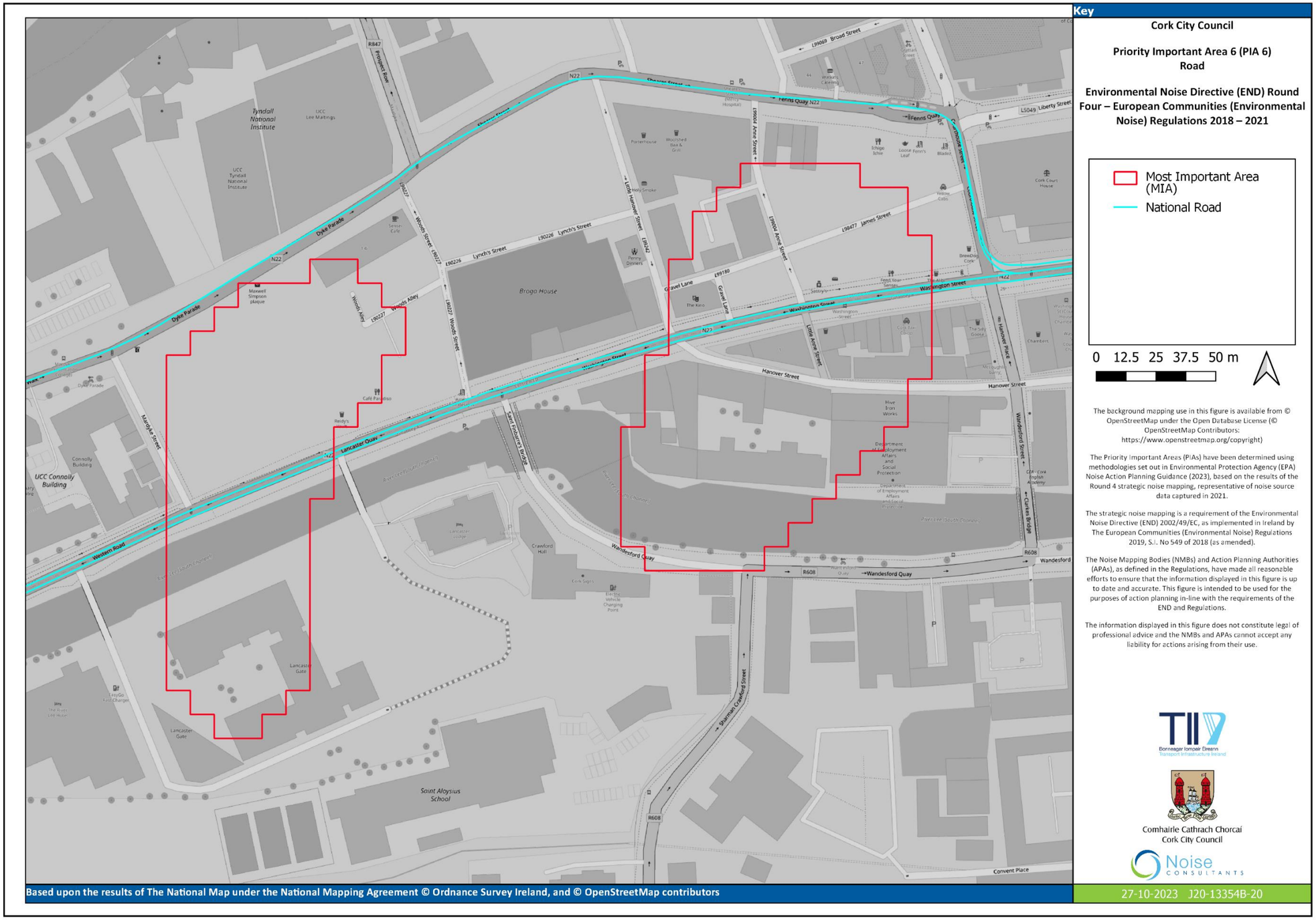


Figure 27: CCiC: Priority Important Area 7 (PIA 7)

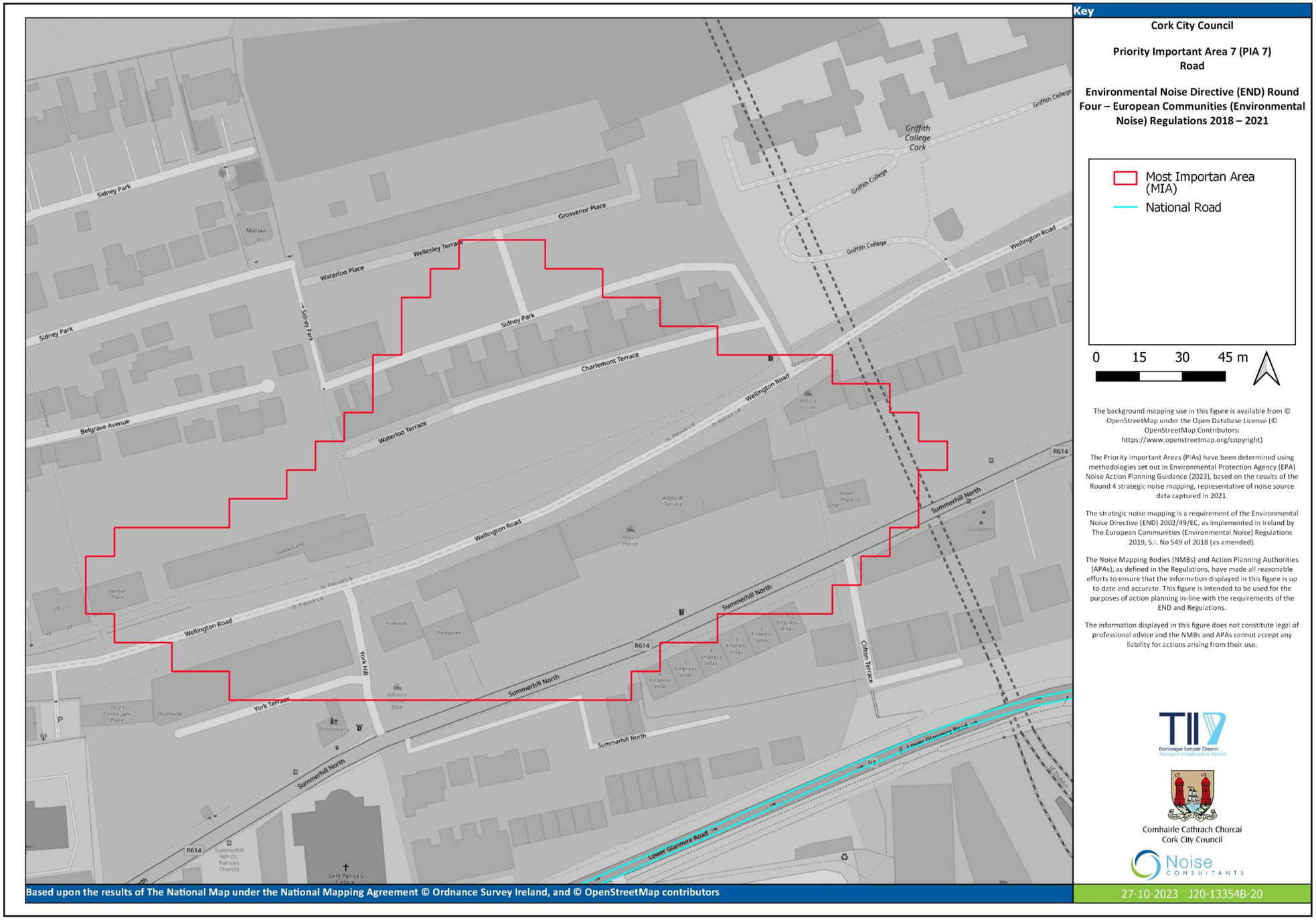


Figure 28: CCiC: Priority Important Area 8 (PIA 8)

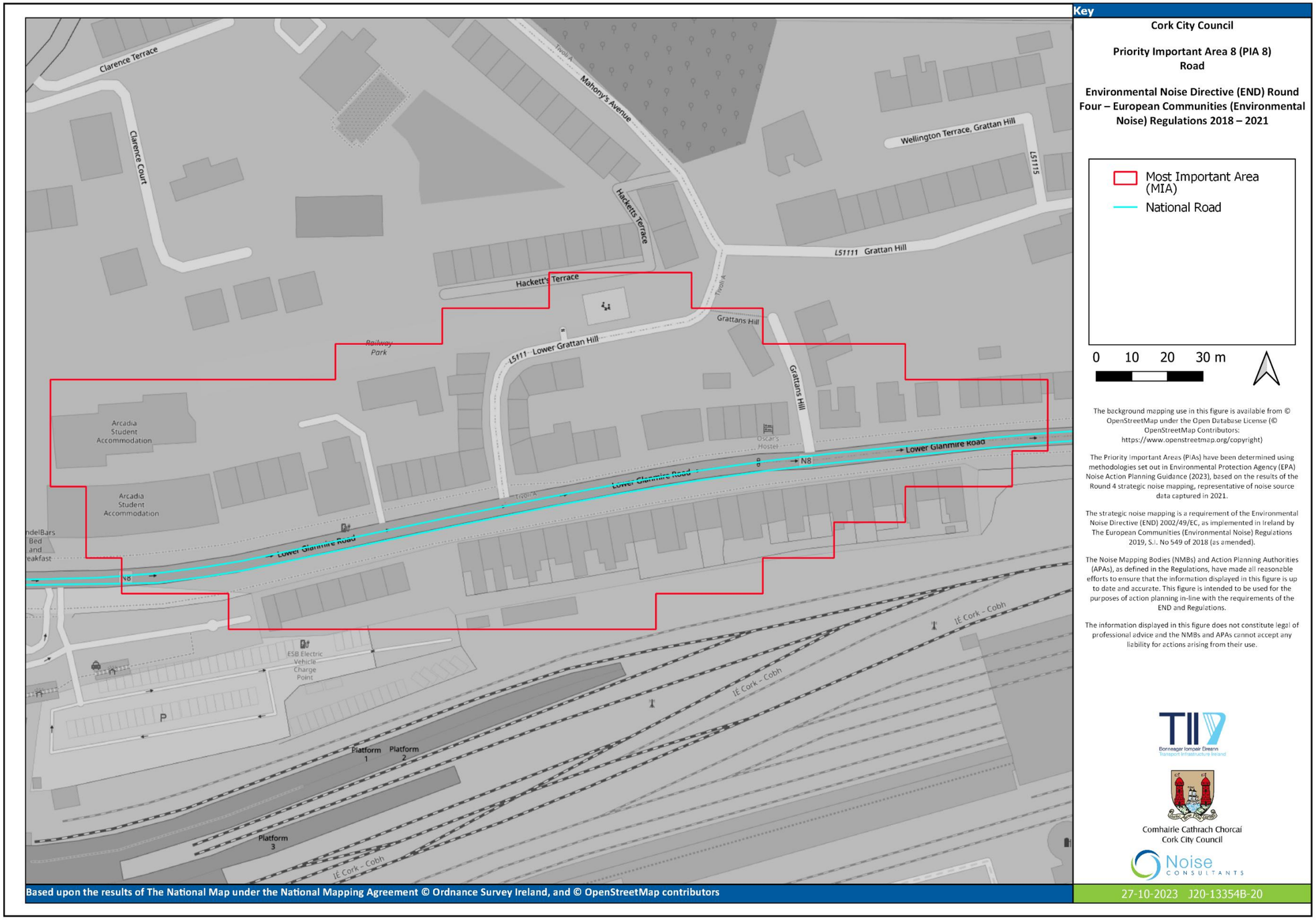


Figure 29: CCiC: Priority Important Area 9 (PIA 9)

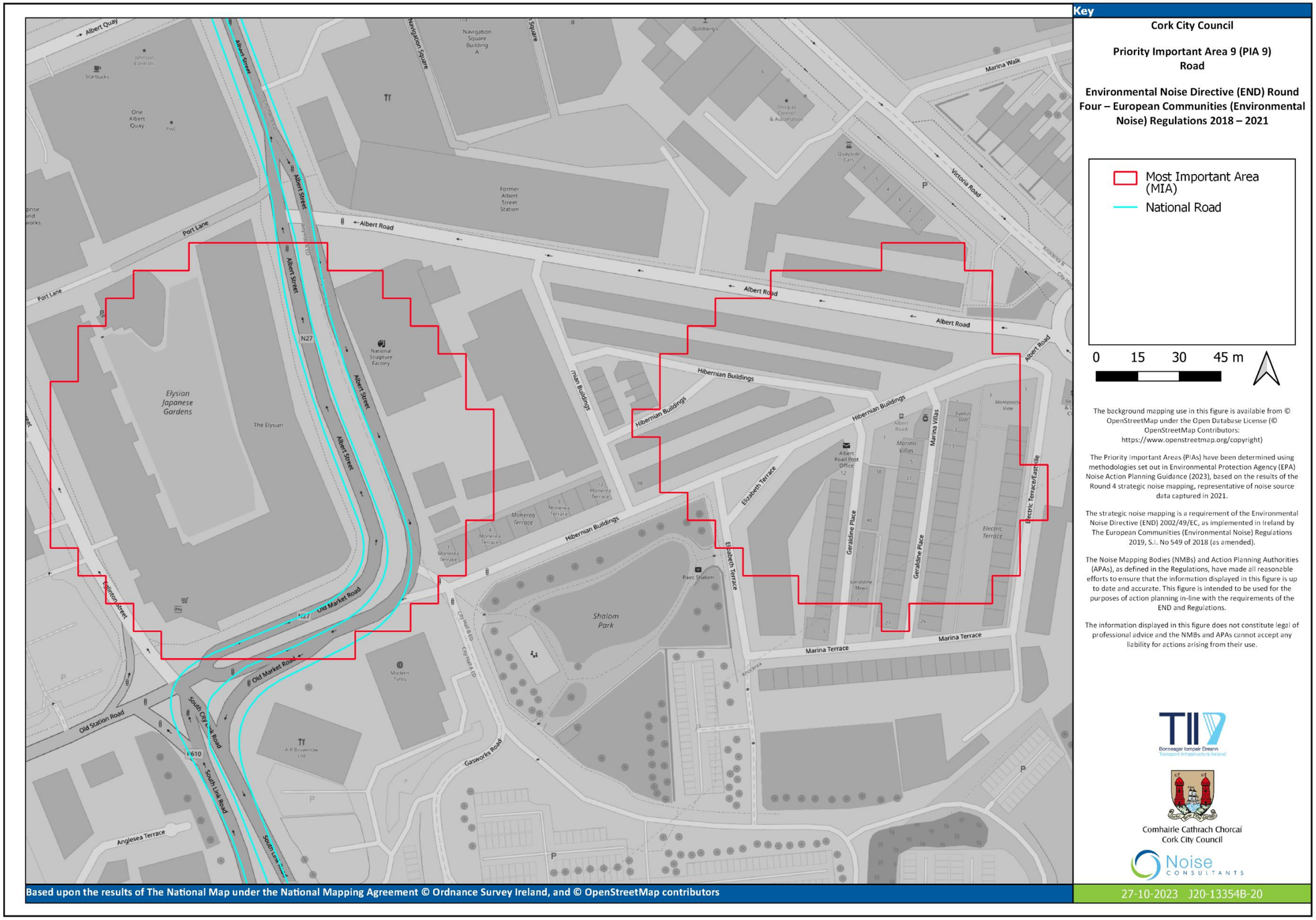
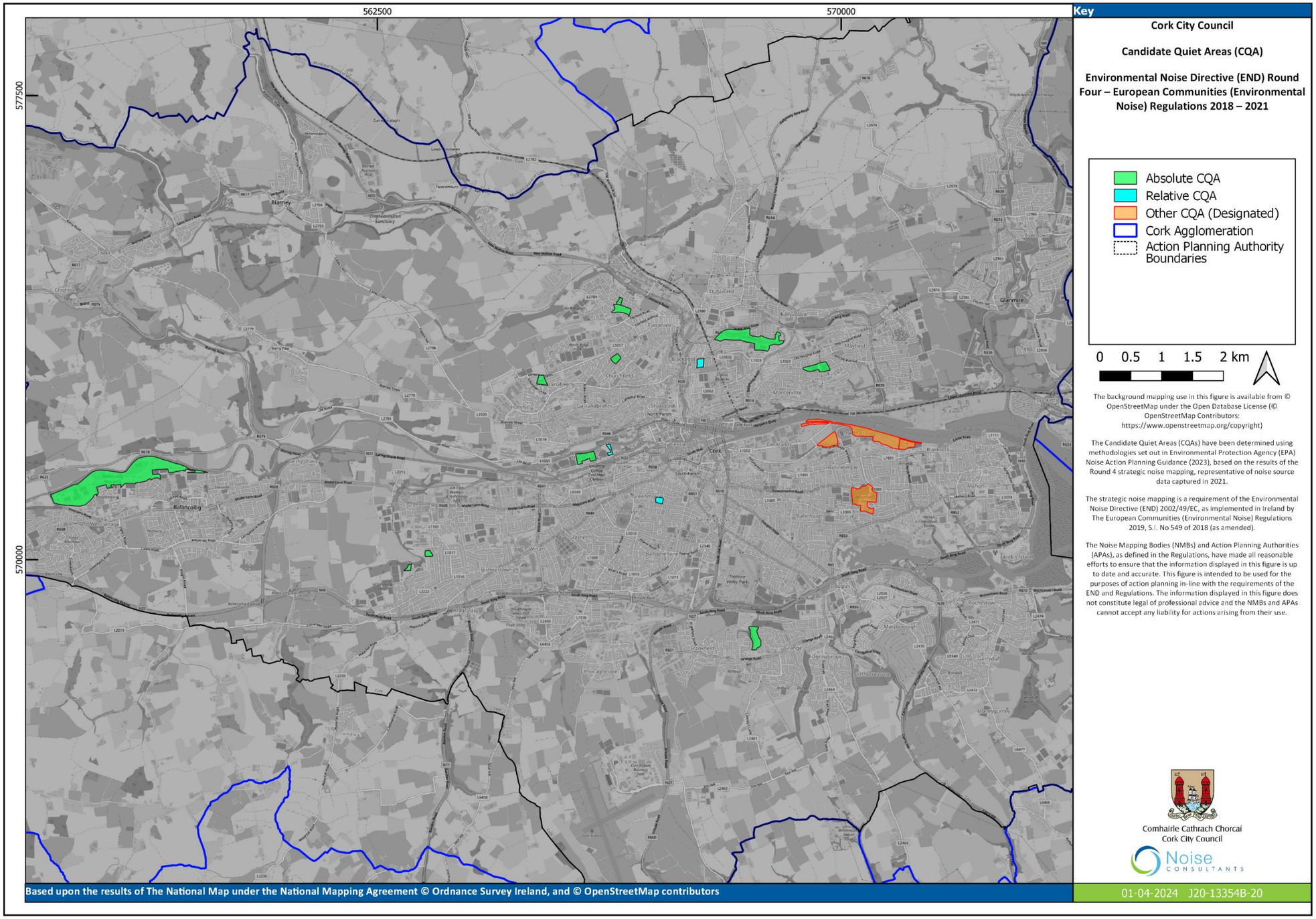


Figure 30: CCiC: Candidate Quiet Areas (CQAs)



11 Cork County Council

11.1 Introduction

Sections 1 – **Section 9** of this Noise Action Plan sets out the overarching principles of the Noise Action Plan process, including the existing international, national and regional noise management legislation and guidance, a description of the noise mapping process, and methodologies advocated in the EPA Guidance for identifying and addressing the most important areas, as established by the strategic noise mapping.

This section presents the results of the noise action planning process specifically for the Cork County Council (CCC) administrative area and sets out the considerations and actions that are specific to Cork County Council.

The referenced Action Planning Authority (APA) in this section is Cork County Council.

This section includes details of:

- contact details;
- the APA's consultation process;
- the APA's historical noise action planning process;
- the APA specific noise management policy and guidance;
- the APA specific plans, projects and strategies relevant to noise;
- the results of the strategic noise mapping;
- the areas to be subject to noise management activities ('Priority Important Areas' (PIAs));
- the areas to be considered for preservation for environmental noise quality ('Candidate Quiet Areas' (CQAs));
- the mitigation and protection measures and actions; and
- associated graphical figures.

11.1.1 Name and Contact Details for Responsibly Authority

Cork County Council

National Roads Design Office

Richmond

Glanmire

Co. Cork

Email: info@corkrdo.ie

11.2 Consultation

11.2.1 Stakeholder Consultation

A period of public consultation will be completed on this draft Noise Action Plan. A summary of the public consultation will be set out in the final Noise Action Plan.

11.3 Review of Noise Action Plan(s)

11.3.1 Round 3 Noise Action Plan (2018-2023)

The Round 3 Noise Action Plan had the focus to manage exposure to environmental noise where necessary, aiming to prevent or reduce noise to minimise the number of people affected by traffic noise emissions. The actions taken were strategic and represented the best practice approach to environmental noise mitigation and the limitation of exposure to environmental noise.

Road traffic are the dominant noise source within the Cork Agglomeration. A reduction in the number of people exposed to levels over 70dB L_{den} as a result of the construction of grade separated junctions along the N40 at Kinsale Road, Sarsfield Road and Bandon Road. During the period of the plan many major roads in the agglomeration were resurfaced with low noise emission surfacing. The model data used in Round 3 is more robust than the data used for the previous round model. The reduction to exposure to a noise above 70dB L_{den} was not attributed entirely to the works undertaken but partially because of better data.

Thus, the Noise Action Plan aims was to minimise the population exposed to values greater than 70dB L_{den} through mitigation measures such as noise barrier, low noise surfacing etc., subject to budget and available resources. With quieter areas to be preserved through a combination of policy and planning.

11.4 Local Noise Management Policy and Guidance

11.4.1 Cork County Development Plan 2022-2028

The Cork County Development Plan 2022 has been prepared in accordance with the steps set out in the Planning and Development Plan Acts. The Elected Members of Cork County Council have adopted the Cork County Development Plan 2022-2028 at the Full Council Meeting held on 25 April 2022 and it came into effect on 6 June 2022.

It is expected to remain in force (subject to any interim variations that the Council may make) until 2028. It is a six-year development plan for the County that attempts to set out, as concisely as possible Cork County Council's current thinking on planning policy looking towards the horizon year of the 2028. The plan also sets out the overall planning and sustainable development strategy for the county which must be consistent with the National Planning Framework 2018 and the Southern Region Regional Spatial and Economic Strategy and Cork Metropolitan Area Strategic Plan (MASP) 2020.

The Cork County Development Plan 2022 will be different from the current County Development Plan as it will relate to the new administrative boundary of the county, post the extension of the City boundary.

The Cork County Development Plan 2022 will from Monday June 6, 2022, replace:

- The Cork County Development Plan, 2014.
- The 8 Municipal District Local Area Plans adopted in 2017.
- The 9 Town Development Plan of former Town Council Towns.

There are local sustainability programmes driven by Cork County and City Council, which aim to reduce long-term traffic congestion levels in the Cork Agglomeration Area. These include initiatives such as provision of Park & Ride facilities, Green Routes, new cycling infrastructure, Intelligent Transport Systems (ITS) etc. whose aim is to facilitate the use of more non-car sustainable forms of travel which will also contribute to the reduction of overall traffic noise generation.

11.5 Relevant Plans, Projects and Studies

Several major transport infrastructure projects are planned for the Cork County Council administrative area during the life of the Noise Action Plan. While not their primary purpose, they will have the potential to impact on the noise environment both positively and negatively. Projects that are planned for the lifetime of the Noise Action Plan include:

- Various active travel projects across the city proposed in CMATS
- Dunkettle Interchange (nearing completion)
- NM20 Cork to Limerick Project
- M28 Cork to Ringaskiddy

11.5.1 NM20 Cork to Limerick Project

A new M20 motorway linking Limerick to Cork was given the go-ahead by the government in October 2017. Limerick and Cork cities are approximately 100 km apart, yet at present the economic interaction and inter-relationships between the cities is limited with poor transport connectivity being a factor. An opportunity exists to provide better connectivity between the two cities, by improving the quality of the transport network which will address road safety issues associated with the existing N20 route and provide for safer and more efficient journey times.

When completed the new stretch of motorway will link Cork to Limerick and onto Tuam, Co. Galway, forming a major motorway along the western corridor.

The development of a motorway will potentially reduce traffic counts and therefore road noise impacting towns along the route (e.g., Banoge) and ribbon development housing. However, consideration will also have to be given to potential high noise levels along the proposed new M20 on residents' health and amenity.

11.5.2 M28 Cork to Ringaskiddy

This project is a 12.4Km upgrade of a national primary route from the N40 South Ring Road in Cork to the Port of Ringaskiddy. This development will support strategic growth of Port facilities at Ringaskiddy, in accordance with European and National policy, meet TEN-T core network level of service requirements, thus facilitating economic development in the local area and nationally, increase safety and capacity of N28 corridor to meet existing and estimated future traffic needs and improve access to the M28 corridor in a safe and sustainable way.

This motorway will potentially bring high noise levels; however, mitigations measures will be in place, i.e. a low noise surface for the entire scheme and acoustic barriers at recommended locations along the scheme.

11.6 Other Relevant Plans, Studies and Measures

11.6.1 Speed limit reductions

A county wide speed limit review is carried out every five years as required by the Guidelines for Setting and Managing Speed Limits in Ireland 2015. While not the primary purpose, reduction of speed limits has the potential to have a positive impact on the noise environment.

11.7 Summary of the Results of the Noise Mapping Process

The Round 4 noise exposure statistics and harmful effects assessment are presented below for the Cork County Council administrative area. The statistics at Agglomeration level are presented in **Section 5.2**.

Exposure statistics are assessed independently for each noise source, and are summarised for the noise metrics across the noise exposure bands defined in the Regulations. The population exposure statistics have been rounded to the nearest 100 as required by the Regulations.

11.7.1 Exposure Statistics

Table 39: CCC: Number of People in Dwellings – L_{den}

Noise Exposure (dB L_{den})	All Roads	All Railway	All Industry
55-59	1,200	0	0
60-64	700	0	0
65-69	200	0	0
70-74	0	0	0
>=75	0	0	0

*exposure statistics rounded to the nearest 100.

Table 40: CCC: Percentage of Total Population Exposed to the Noise Source – L_{den}

Noise Exposure (dB L_{den})	All Roads	All Railway	All Industry
55-59	14 %	0 %	0 %
60-64	7 %	0 %	0 %
65-69	2 %	0 %	0 %
70-74	0 %	0 %	0 %
>=75	0 %	0 %	0 %

Table 41: CCC: Number of School Buildings (& Hospital Buildings) – L_{den}

Noise Exposure (dB L_{den})	All Roads	All Railway	All Industry
55-59	02 (00)	00 (00)	00 (00)
60-64	00 (00)	00 (00)	00 (00)
65-69	00 (00)	00 (00)	00 (00)
70-74	00 (00)	00 (00)	00 (00)
>=75	00 (00)	00 (00)	00 (00)

Table 42: CCC: Number of People in Dwellings – L_{night}

Noise Exposure ($dB\ L_{night}$)	All Roads	All Railway	All Industry
50-54	400	0	0
55-59	100	0	0
60-64	0	0	0
65-69	0	0	0
>=70	0	0	0

*exposure statistics rounded to the nearest 100.

Table 43: CCC: Percentage of Total Population Exposed to the Noise Source – L_{night}

Noise Exposure ($dB\ L_{night}$)	All Roads	All Railway	All Industry
50-54	5 %	0 %	0 %
55-59	1 %	0 %	0 %
60-64	0 %	0 %	0 %
65-69	0 %	0 %	0 %
>=70	0 %	0 %	0 %

Table 44: CCC: Number of School Buildings (& Hospital Buildings) – L_{night}

Noise Exposure ($dB\ L_{night}$)	All Roads	All Railway	All Industry
50-54	00 (00)	00 (00)	00 (00)
55-59	00 (00)	00 (00)	00 (00)
60-64	00 (00)	00 (00)	00 (00)
65-69	00 (00)	00 (00)	00 (00)
>=70	00 (00)	00 (00)	00 (00)

Table 45: Total number of Noise Sensitive Buildings

Noise Sensitive Building	Number of Noise Sensitive Buildings in the SNM
Schools	8
Hospitals	0

11.7.2 Harmful Effects

The exposure of harmful effects is assessed independently for each source. Where the same people are simultaneously exposed to different noise sources, the harmful effects may not, in general, be cumulated, however they can be compared to identify proportional significance.

Table 46 presents the calculated harmful effects in the case of road traffic noise for the Agglomeration, and **Table 48** present the calculated harmful effects from railway noise.

As shown in **Table 47** the statistical proportion of the total population with harmful effects associated with road traffic noise in the Cork County Council administrative area is half that of the Agglomeration.

Table 46: Breakdown of Harmful Effects in the Case of Road Noise – Total Number of People – All Sources

Harmful Effect	Cork Agglomeration	Cork County Council
Ischemic Heart Disease	16.50	0.35
Highly Annoyed	17724.06	398.22
Highly Sleep Disturbed	3382.11	65.52
Total Populations		
Cork Agglomeration: 219,286.82		
APA Proportions within Agglomeration: Cork City Council: 210,163.80**, Cork County Council:** 9,123.02		

Table 47: Breakdown of Harmful Effects in the Case of Road Noise – % of Population – All Sources

Harmful Effect	Cork Agglomeration	Cork County Council
Ischemic Heart Disease	0.01%	0.00%
Highly Annoyed	8.08%	4.36%
Highly Sleep Disturbed	1.54%	0.72%

Table 48: Breakdown of Harmful Effects in the Case of Railway Noise – Total Number of People – All Sources

Harmful Effect	Cork Agglomeration	Cork County Council
Highly Annoyed	284.33	0.00
Highly Sleep Disturbed	134.07	0.00

Table 49: Breakdown of Harmful Effects in the Case of Railway Noise – % of Population – All Sources

Harmful Effect	Cork Agglomeration	Cork County Council
Highly Annoyed	0.13%	0.00%
Highly Sleep Disturbed	0.06%	0.00%

11.8 Areas to be Subject to Noise Management Activities (Industry)

The industry sites included within the Agglomeration strategic noise maps are limited to Industrial Emission (IE) sites as regulated by the EPA under the IPPC Directive 96/61 EC, and any ports. Strategic noise maps of the industrial noise emissions are shown in figures listed in **Section 5.2**, with none identified within the Cork County Council administrative area.

The data upon which the industry noise emission models have been developed includes default values, therefore model outputs are a strategic representation of industry noise levels, rather than being site specific.

The Noise Action Plan does not include any Priority Important Areas for industry mainly due to the lower exposure statistics reported. Notwithstanding, there will be a need for ongoing management of noise issues from industrial sites through noise complaints, development and licence application. In this regard the APA may use the maps to support this process and should continue to consult and collaborate with the EPA who have overall responsibility for site specific noise management of waste, Industrial Emission (IE) and Integrated Pollution Control (IPC) licensed sites.

11.9 Priority Important Areas

No Most Important Areas and subsequently no Priority Important Areas were identified using the methodologies in **Section 6**.

The focus of Cork County Council during the implementation of the Noise Action Plan shall therefore be the long-term strategy, and associated policy and actions set out in **Section 9.**

11.10 Areas to be Preserved for Environmental Noise Quality

No Candidate Quiet Areas were identified using the methodologies summarised in **Section 7**. The focus of Cork County Council during the implementation of the Noise Action Plan shall therefore be the long-term strategy, and associated policy and actions set out in **Section 9.**

11.11 Noise Management Framework - Measures and Actions

An overview of the general prevention, protection and mitigation measures that could be considered for the management of noise from road, rail and industry within the Agglomeration is presented within **Section 8**.

This section considers those measures in a local context, together with key local noise management related policy guidelines and local and regional projects and set out the framework that Cork County

Council intends to follow to help manage and mitigate the effects of exposure to environmental noise.

The environmental noise management measures within the framework are presented across the three policy principle categories covered by the **Noise Policy Statement**, together with a fourth supporting 'General' category as follows;

- General – Noise Management Measures
- Prevention – Noise Management Measures
- Protection – Noise Management Measures
- Mitigation – Noise Management Measures.

In some instances, measures do not necessarily stand in isolation and may be relevant for, or overlap, with other categories.

Furthermore, the measures collectively support the **Responsible Aims** which underpin the **Noise Policy Statement**.

When considering the broader framework of measures and actions aimed at mitigating exposure to environmental noise from the transport and industry sectors, it is important to emphasize that Cork County Council, in some instances, does not have exclusive ownership or influence over certain noise sources, areas, and the measures presented in this Noise Action Plan. Many of the measures and actions will require input, collaboration, and execution by other infrastructure owners, along with support from government departments and bodies through relevant legislation and funding.

In addition to third-party collaboration, the successful implementation of this Noise Action Plan will also depend on the availability of adequate resources to execute the proposed measures and actions.

The measures are described below across each of the four categories.

11.11.1 General – Noise Management Measures

General noise management measures cover a range of activities to support the implementation of the Noise Action Plan including other measures across the three policy principal categories.

Measure CCC_M1: Support the Development of National Noise and Other Related Policy and Guidance

At present there is no national policy relating specifically to noise other than specific objectives set out within a range of national plans and strategies such Policy Objective 65 from the National Planning Framework 2040. Furthermore, there is no adopted consistent approach for Local Authorities to apply in the evaluation of noise issues at the planning application stage. Some have developed their own guidelines, and many apply the ProPG approach which is used within the UK. Development of national policy and guidelines will be the responsibility of the Department of Environment, Climate and Communications (DECC).

In addition to specific national policy and guidance relating to noise, other national policy and guidance can have an indirect impact on noise related issues. An example includes the National Speed Limit Review lead by the Department of Transport and published in September 2023.

Cork County Council will actively support and engage with the development of national policy and guidance on the subject of noise and all related policy.

Measure CCC_M2: Noise Action Plan Working Group(s)

Cork County Council will support the establishment of relevant noise working groups both within Cork County Council to co-ordinate the activities and actions from the Noise Action Plan and with Cork City Council as part of the wider agglomeration to co-ordinate and collaborate with the relevant Noise Mapping Bodies [Transport Infrastructure Ireland & Iarnród Éireann] in respect of noise management issues in general and mitigation measures at a Priority Important Area level.

Measure CCC_M3: Annual Report to Environment Protection Agency (EPA)

Cork County Council will prepare an annual report for the EPA setting out progress made in respect of the implementation of the Noise Action Plan. Cork County Council will liaise with relevant third-party infrastructure owners in respect of progress made by them with implementing actions that may be relevant for them and their infrastructure.

Measure CCC_M4: Continued Investigation and Management of Noise Complaints

Cork County Council's Environment Section investigates complaints under the provisions of the Environmental Protection Agency Act 1992 (Noise) Regulations 1994. The Unit has regard to best international best practice guidelines and standards.

Measure CCC_M5: Stakeholder Collaboration

Cork County Council's Environment Section actively collaborates with a number of stakeholders in relation to potential and existing air /noise nuisances:

- **EPA - IPC Licences** - The Environmental Section collaborates with the EPA in the investigation of noise complaints within the city boundary.
- **Irish Rail** - The Environment Section liaises with Irish Rail as required in relation to complaints, night time works, and infrastructure projects which may increase noise levels.
- **Port of Cork** - The Environment Section engages directly with the Port of Cork in relation to noise emissions and noise monitoring in the Port of Cork area.
- **TII & National Roads Office** – The Environment Section liaises with TII and the National Roads Office in relation to noise complaints within the county boundary.

Measure CCC_M6: Ongoing Community Engagement

A key requirement in the development of the strategic noise maps and Noise Action Plan is that the information is made available to the public in a clear, comprehensible, and accessible manner. Furthermore, the public should be consulted on the preparation of the Noise Action Plan, provided with the opportunity to participate and comment on the Noise Action Plan, and the feedback from public engagement should be considered when finalizing the Plans.

The strategic noise maps, together with background information, will be published on the Cork County Council website and a period of formal public consultation held on the draft Noise Action Plan. Furthermore, engagement will be on-going through the elected representatives of Cork County Council through the relevant Strategic Policy Committee and Local Area Committee meetings.

As part of the implementation of the Noise Action Plan, it is proposed to continue with, and build on this public engagement as part of the evaluation of the Priority Important Areas and also through engagement on relevant existing Plans and Projects.

11.11.2 Prevention – Noise Management Measures

Measure CCC_M7: Planning Application Advice, Conditioning and Enforcement

Cork County Council's Environment Section consults directly with the Planning Department advising on planning applications and enforcement of planning conditions in relation to noise emissions and have standard planning conditions in relation to the construction and operation stages of development for this purpose.

In reviewing and advising on planning applications the Environment Section will give due consideration to the existing strategic noise maps and this Noise Action Plan and in particular any Candidate Quiet Areas.

11.11.3 Mitigation – Noise Management Measures

Existing Plans, Projects and Strategies

Measure CCC_M8: Support the Implementation of Other Relevant Plans, Projects and Strategies

There are a number of existing plans, projects and strategies which aim to deliver more sustainable infrastructure and services for the County of Cork and its surrounding areas. The successful implementation of these will bring indirect benefits for noise reduction through encouraging more sustainable modes of transport in combination with reduced traffic volumes. Key examples with noise benefit synergies include;

- the Cork Metropolitan Area Transport Strategy 2040
- the Cork County Climate Action Plan 2024-2029

This measure aims to work collaborative with each of these to support their implementation and engage on aspects for noise management and benefits.

11.11.4 Noise Management Framework – Summary of Actions

A summary of the proposed noise management measures is set out in **Table 50** below together with details of the proposed action(s) for each. The table also sets out the **Responsible Aims** that each measure helps to support through the implementation of the Plan.

Table 50: CCC: Noise Management Framework – Summary of Actions

Measure	Responsible Aim (RA)	Measure Description	Action
General – Noise Management Measures			
CCC_M1	RA_1 & 5	Support the Development of National Noise and Other Related Policy and Guidance	Support the Department of Environment, Climate and Communications (DECC) and other government departments and bodies in the development of national noise and other related policies and guidance, and assist in their implementation once in place.
CCC_M2	RA_2, 3, 4 & 5	Noise Action Plan Working Group(s)	Support the establishment of and participate in relevant Noise Working Groups established to deliver the Noise Action Plan
CCC_M3	RA_8	Annual Report to Environment Protection Agency (EPA)	Prepare an annual progress report regarding the implementation of the Noise Action Plan and submit it to the EPA.
CCC_M4	RA_5 & 7	Continued Investigation and Management of Noise Complaints	Review and investigate all noise complaints received in a timely manner and in accordance with national and international best practice.
CCC_M5	RA_3, 4 & 5	Stakeholder Collaboration	Continue liaison and collaboration with a range of key stakeholders to address noise-related issues and complaints to ensure the effective management of noise from related industry and infrastructure sites.
CCC_M6	RA_3, 4, 5 & 6	Ongoing Community Engagement	Publish the final Noise Action Plan and provide updates on the progress made with its implementation.

Prevention – Noise Management Measures			
CCC_M7	RA_5	Planning Application Advice, Conditioning and Enforcement	Review relevant planning applications for noise related issues in the context of existing Strategic Noise Maps, this Noise Action Plan and existing or candidate Quiet Areas and condition developments as appropriate to manage impacts on ambient noise levels.
Mitigation – Noise Management Measures			
Existing Plans, Projects and Strategies			
CCC_M8	RA_3 & 5	Support Implementation of Other Relevant Plans, Projects & Strategies	Collaborate with relevant Cork County Council sections and 3rd Party organisations to support the implementation of the following; • the Cork Metropolitan Area Transport Strategy 2040 • the Cork County Council Climate Action Plan 2024-2029 •

11.12 Noise Action Plan Implementation

A summary of the proposed noise management measures is set out in **Table 50** together with details of the proposed action(s) for each. The table also sets out the **Responsible Aims** that each measure helps to support through the implementation of the Plan.

Figure 31 below provides a summary of the Cork County Council measures in respect of their timescale for implementation over the period of the Plan and beyond, and the **Responsible Aims** which the measure supports, as set out in **Section 9.1.2**.

The timescales presented relate to the period of the Noise Action Plan, 2024 - 2028, and beyond and with the following definitions assumed;

- "Short term" indicates implementation by 2026
- "Medium-term" indicates implementation by 2030
- "Long-term" indicates implementation beyond 2030.

The establishment of the Cork County Council and Noise Action Plan working groups will significantly improve the co-ordination and collaboration across all parties and will be essential to ensure successful implementation of the measures within and beyond the life of the Plan.

Successful implementation will also be subject to resources and funding.

Figure 31: CCC: Noise Action Plan Implementation

Cork County Council Measures		Responsible Aim (RA)	Time scale	2024				2025				2026				2027				2028				2029+	
				Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2
Noise Action Plan Preparation																									
	Noise Action Plan Completion		18th July 2024																						
General - Noise Management Measures																									
CCC_M1	Support National Policy & Guidance	RA_1 & 5	Short to Long-term																						
CCC_M2	Noise Action Plan Working Group(s)	RA_2, 3, 4 & 5	Bi-annual				Establish																		
CCC_M3	Annual Report to EPA	RA_8	Annual																						
CCC_M4	Manage Noise Complaints	RA_5 & 7	Ongoing																						
CCC_M5	Stakeholder Collaboration	RA_3, 4 & 5	Ongoing																						
CCC_M6	Ongoing Community Engagement	RA_3, 4, 5 & 6	As Required																						
Prevention - Noise Management Measures																									
CCC_M7	Planning Applications	RA_5	Ongoing																						
Mitigation - Noise Management Measures																									
Existing Plans, Projects and Strategies																									
CCC_M8	Support Other Plans, Projects & Strategies	RA_3 & 5	Ongoing																						

Appendix A: Glossary

A-weighting	A frequency weighting applied to measured or predicted sound levels in order to compensate for the non-linearity of human hearing.
Acoustic environment	Sound at the receiver from all sources of sound as modified by the environment, as defined in ISO 12913-1:2014.
CNOSSOS-EU: 2020	The common noise assessment method according to the END.
CRTN 1988	The noise calculation method Calculation of Road Traffic Noise 1988.
dB (decibel)	The unit of sound pressure level, calculated as a logarithm of the intensity of sound. 0 dB is the threshold of hearing, 120 dB is the threshold of pain. Under normal circumstances, a change in sound level of 3 dB is just perceptible. A change of 1 or 2 dB is detectable only under laboratory conditions. A change of 10 dB corresponds approximately to halving or doubling the loudness of sound.
Design Goal	A target limit for noise or vibration adopted during the early design stages of a project, not necessarily having a statutory basis but based on current best practice and the particular circumstances of a given scheme.
Do Minimum	Describes a scenario under which a road scheme that is under consideration does not proceed (sometimes referred to as "Do Nothing").
Do Something	Describes a scenario under which a road scheme that is under consideration proceeds.
EEA	European Environment Agency.
END	Environmental Noise Directive.
EPA	Environmental Protection Agency. .
Free Field	Free field noise levels are measured or predicted such that there is no contribution made up of reflections from nearby building façades.
$L_{eq,T}$	The equivalent continuous sound level - the sound level of a steady sound having the same energy as a fluctuating sound over a specified measuring period T.
$L_{eq,16hr}$	The equivalent continuous sound level - the sound level of a steady sound having the same energy as a fluctuating sound over a specified measuring period of 16 hours.

L_{den}	The day-evening-night composite noise indicator adopted by the EU for the purposes of assessing overall annoyance. Equation below. $$L_{den} = 10\lg\frac{1}{24}\left(12*10^{\frac{L_{day}}{10}} + 4*10^{\frac{L_{evening}+5}{10}} + 8*10^{\frac{L_{night}+10}{10}}\right)$$
L_{day}	The A-weighted long term average sound level as defined in ISO1996-2: 2017, determined over the day periods over a long-term period (e.g. a year).
$L_{evening}$	The A-weighted long term average sound level as defined in ISO1996-2: 2017, determined over all the evening periods over a long-term period (e.g. a year).
L_{night}	The A-weighted long term average sound level as defined in ISO1996-2: 2017, determined over all the night periods over a long-term period (e.g. a year).
NAP	Noise Action Plan.
NPO	National Policy Objective in the National Development Plan.
NRA	National Roads Authority.
NTA	National Transport Authority.
Soundscape	The acoustic environment as perceived or experienced and/or understood by a person or people, in context, as defined in ISO 12913-1:2014.
Soundwalk	A walk with a focus on the listening environment.
TII	Transport Infrastructure Ireland.
WebTAG	Transport analysis guidance tool for the proposal of policies and interventions to ensure a consistent approach in transport appraisal