Comhairle Cathrach na Gaillimhe
Galway City Council

Noise Action Plan

2024 – 2028

Operational Development Directorate
Galway City Council
City Hall
College Road
Galway

November 2024

GALWAY CITY COUNCIL

Comhairle Cathrach na Gaillimhe

Document Amendment Record

Project: **Noise Action Planning**

Title: **Noise Action Plan 2024-2028**

Document: **Noise Action Plan 2024 – 2028**

Revision	Purpose/Description	Origin	Checked	Approved	Date
A	Final Draft	SF	FMcE		July 2024
	Final	SF	FMcE		Nov 2024
	Final Rev 1	SF	FMcE		Nov 2024

EXECUTIVE SUMMARY

The aim of the Environmental Noise Directive (END)(2002/48/EC) is to 'define a common approach intended to avoid, prevent, or reduce on a prioritised basis the harmful effects, including annoyance, due to exposure to environmental noise'.

The END was transposed into Irish Law by the European Communities (Environmental Noise) Regulations 2006 (S.I. 140/2006). These regulations were revised by the European Communities (Environmental Noise) Regulations 2018, (S.I. No. 549/2018) and were amended through the European Communities (Environmental Noise)(Amendment) Regulations 2021 (S.I. No. 663/2021).

This noise action plan has been prepared by Galway City Council in accordance with the above regulations for major roads within its administrative area.

Environmental noise can be defined as unwanted or harmful outdoor sound created by human activities, including noise from transport sources and from industry. The Directive applies to environmental noise to which humans are exposed, in particular 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. It does not apply to noise that is caused by the exposed person, noise from domestic activities, noise created by neighbours, noise at workplaces or noise inside means of transport or due to military activities in military areas.

The Environmental Protection Agency (EPA) is designated as the National Authority charged with overseeing the implementation of the Regulations. Galway City Council is designated a Noise Mapping Body for the purpose of making and approving strategic noise maps for Galway City. Galway City Council is also designated an Action Planning Authority with responsibility for the preparation of a Noise Action Plan for Galway City.

Transport Infrastructure Ireland (TII) as the designated noise mapping body for national roads prepared strategic noise maps for the major national roads in Galway City. Galway City Council participated in a centralised process to commission the preparation of noise maps and population exposure assessments for major non-national roads carrying in excess of 3 million vehicles per annum. Noise mapping was undertaken in 2022, (Round 4 Noise Mapping)(R4 Mapping).

Article 6.2 of the Environmental Noise Directive specifies the use of two noise level indicators when preparing environmental noise maps and action plans, the L_{den} and L_{night}.

- L_{den} – the annual average noise level based on the day, evening and nighttime noise levels. This is the noise indicator for overall annoyance.

- L_{night} – the annual average noise level for the night-time period from 23:00 – 07:00. This is the noise indicator for sleep disturbance.

The indicators are weighted to account for the fact that the same noise level may be more annoying at different times of the day.

The results of the strategic noise maps provide information on the predicted noise levels at all noise sensitive properties within the assessment area, with an estimate of the number of inhabitants. This information is then used to identify Important Areas (IAs), where long term noise exposure to noise from infrastructure has potential to have adverse effects on the health of the exposed population. Following on from this, the Most Important Areas (MIAs), which are a subset of the IAs, were identified where the health effects are the highest.

It should be noted that the process of identifying the Important Areas and Most Important Areas is of a statistical nature and pertains to the entire population encompassed by the noise maps. The Most Important Areas should not be construed as a precise assessment of harmful effects for specific buildings, nor are the extents of the Most Important Areas definitive. The Most Important Areas are indicative for the identification of areas with a relatively high number of people who may be potentially highly annoyed due to road noise.

The following table summarises the Most Important Areas identified along the major roads in Galway City. Definitions of the abbreviations contained in Table 1 are listed in Appendix A.

Table 1 Summary of the Most Important Areas

APA	HA Threshold/100m^2	No. of MIA	Total Population	Harmful Effects Statistics		
		Road		HA	HSD	IHD
Galway City Council	15	44	6,558	1,587	495	2
Galway City Council	10	62	14,102	2,940	898	3
Galway City Council	7.5	64	21,067	3,944	1,188	4

The automated process identified 44 Most Important Areas along all the major roads in Galway City. These were prioritised to 10 Priority Important Areas (PIAs). Galway City Council selected 7 of these and is committed, subject to available resources and funding, to assessing these PIAs and confirming the relevant noise management measures for each PIA, including cost-benefit analysis and health benefits.

The Noise Action Plan is supported by a four-year programme for implementation (2024-2028) and will be reviewed every 5 years thereafter in 2028. Progress on the implementation of the plan will be reported to the EPA on an annual basis.

The following key actions are proposed over the lifetime of the NAP:

- Undertake noise monitoring and validate the noise model for all PIAs selected
- Review potential mitigation measures for all PIAs and cost benefit analysis
- Seek approval and funding for the implementation of mitigation measures.

This Plan is situated alongside a hierarchy of statutory documents that has been subject to environmental assessment/screening for environmental assessment, as appropriate, and forms the decision-making and consent-granting framework. The Plan does not provide consent or establish a framework for granting consent and will not be binding on any decisions relating to the granting of consent. In order to be realised, projects included in this Plan (in a similar way to other projects from any other sectors) will have to comply, as relevant, with various legislation, policies, plans and programmes (including requirements for lower-tier Appropriate Assessment, Environmental Impact Assessment and other licencing requirements as appropriate) that form the statutory decision-making and consent-granting framework. All proposals for development/works under the Noise Action Plan will be required to demonstrate compliance with the requirements of environmental and planning legislation

and planning and licensing processes, including existing provisions of land use plan(s) and policy documents such as the National Planning Framework, Galway Transport Strategy and Galway City Development Plan 2023-2029 (including those provisions identified in the accompanying Screening SEA report).

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1 Introduction

1.1 Policy Objective

This Noise Action Plan sets out how Galway City Council will manage environmental noise along major roads within its functional area, particularly, where the noise exposure levels have the potential to have harmful effects on human health. Galway City Council will endeavour to maintain satisfactory noise environments where they exist and will have regard to acoustical planning in the planning process (within the confines of the 2000 Planning and Development Act as amended) to ensure that future developments include provision to protect the population from the effects of environmental noise in the interests of residential amenity and public health.

1.2 Purpose

The aim of the Environmental Noise Directive (END) (2002/49/EC) is 'to define a common approach intended to avoid, prevent, or reduce on a prioritised basis the harmful effects, including annoyance, due to exposure to environmental noise'.

The END was transposed into Irish Law by S.I. 140/2006 European Communities (Environmental Noise) Regulations 2006 as amended by S.I. 549/2018 European Communities (Environmental Noise) Regulations 2018 and S.I. 663/2021 European Communities (Environmental Noise) Regulations 2021.

There are 3 key phrases in the implementation of the Directive:

- Undertake strategic noise mapping to determine exposure to environmental noise
- Ensure information on environmental noise and its effects is made available to the public
- Adopt action plans, based on the results of noise mapping

A noise map is a graphical illustration of the predicted noise level in a particular location from a particular noise source. Noise maps have different colour-coded bands, which represent the predicted decibels (dB(A)) within a certain range.

The purpose of undertaking strategic noise mapping is to determine exposure to environmental noise, with an aim to prevent and reduce environmental noise where necessary.

Noise maps are used to assess the number of people annoyed and sleep disturbed throughout each member state in the European Union. They are also used to identify priorities for noise action plans including identifying important areas and priority important areas and conserving areas where the noise quality is good.

Under The Regulations, Galway City Council is the designated Noise Mapping Body for the purpose of making and approving strategic noise maps for non-national major roads in Galway City. Galway City Council is also designated an Action Planning authority with responsibility for preparing a Noise Action Plan for Galway City.

This Noise Action Plan is the 4th prepared by Galway City Council and it replaces the previous Galway City Noise Action Plan 2019-2023.

1.3 Scope

The Regulations define environmental noise as unwanted sound arising from all areas of human activity such as noise from transport sources, industry and recreational activities.

The Regulations apply to environmental noise to which humans are exposed, particularly 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.

The Regulations do not apply to noise caused by the exposed person, noise from domestic activities, noise created by neighbours, noise at workplaces or noise inside means of transport or due to military activities in military areas.

Strategic noise maps must be prepared to display noise exposure levels in a given area from particular noise sources for:

- Major roads >3 million vehicle movements per year
- Major rail >30,000 rail passages per year
- Major airports >50,000 air movements per year
- Agglomerations >100,000 inhabitants

The strategic noise maps for Galway City were prepared in 2022 for noise from road traffic for sections of road having more than 3,000,000 vehicle passages per year.

In accordance with the Regulations, Action Planning Authorities are required to determine the measures to be included in noise action plans and

“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 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”.

The Regulations require that the most important areas and priorities are to be addressed with the former being identified during the development of the noise action plan and the latter being addressed during the implementation of the noise action plan.

It is recommended that noise action plans support Policy Objective 65 from the National Planning Framework 2040, 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 has been prepared in accordance with the Regulations and has been informed by the results of the strategic noise mapping of major roads in Galway City.

This noise action plan includes the identification of important areas and priority important areas based on an assessment of harmful effects and details of noise management measures for consideration and assessment during the implementation stage.

1.4 Strategic Environmental Assessment (SEA)

Strategic Environmental Assessment (SEA) is a process for the formal, systematic evaluation of the likely significant environmental effects of implementing a plan or programme, before a decision is made to adopt the plan or programme.

Strategic Environmental Assessment (SEA) of plans and programmes is required by European Directive 2001/42/EC ('the SEA Directive'). For a specific range of land-use plans, this Directive is transposed into Irish law by the Planning and Development (Strategic Environmental Assessment) Regulations 2004, S.I. No. 436/2004, as amended by the Planning and Development (Strategic Environmental Assessment)(Amendment) Regulations 2011, S.I. No. 201/2011.

For all other plans, the SEA Directive is transposed into Irish law by the European Communities (Environmental Assessment of Certain Plans and Programmes) Regulations 2004. S.I. No. 435/2004, as amended by the European Communities (Environmental Assessment of Certain Plans and Programmes)(Amendment) Regulations 2011, S.I. No. 200/2011.

SEA Screening has been undertaken with respect to this Noise Action Plan, to firstly consider the applicability of the regulations, and then to consider if this Noise Action Plan would likely give any significant environmental impacts and therefore that further SEA would be required. The Environmental Authorities have been consulted in accordance with the requirements of S.I No. 435/2004 and the Draft Galway City Noise Action Plan put out for a period of public and stakeholder consultation. No significant changes have been made to the final Noise Acton Plan as a result of this consultation. The SEA Screening has concluded that no further SEA work is required.

All proposals for development/works under the Noise Action Plan will be required to demonstrate compliance with the requirements of environmental and planning legislation.

1.5 Appropriate Assessment Screening

The requirement to undertake appropriate assessment screening derives from Article 6(3) and 6(4) of the Habitats Directive (European Directive 92/43/EC). The Habitats Directive is transposed into Irish law by the European Communities (Birds and Natural Habitats) Regulations, 2011.

The Noise Action Plan has been assessed to determine if it is to be subject to an 'Appropriate Assessment' under the Habitats Directive. The Draft Noise Action Plan has been put out to a period of public and stakeholder consultation. No significant changes have been made to the final Noise Action Plan as a result of this consultation.

The finding of the screening assessment is that; it can be excluded (on the basis of objective information provided herein, individually or in combination with other plans or projects and in the absence of any mitigation) that the Plan will have a significant effect on any European site. An appropriate assessment is not, therefore, required.

Further Screening for Appropriate Assessment (AA) will be conducted for any actions required under the Noise Action Plan to determine whether the project, alone or in combination with other plans or projects, could have significant effects on a Natura 2000 site.

1.6 Consultation

A period of public consultation was completed on the draft Noise Action Plan. The results of the public consultation were taken into account in preparing this final Noise Action Plan.

In addition to seeking submissions from the general public, the following stakeholders were invited to comment on this NAP:

- Galway County Council
- Environmental Protection Agency (EPA)
- Transport Infrastructure Ireland (TII)
- Northern & Western Regional Assembly (NWRA)
- Department of the Environment, Climate and Communications
- Department of Transport
- Department of Housing, Local Government and Heritage
- Department of Agriculture, Food and the Marine

Details on Public Consultation are provided in Appendix E.

1.7 Noise Action Plan Timetable

The following outlines the timeline for the preparation and completion of Round 4 of Noise Action Plans:

Table 2 Noise Action Plan Timetable

Date	Requirement
Q1/Q2 2024	Develop Draft Noise Action Plan
Q3 2024	Public Consultation (6 – 8 weeks) on Draft Noise Action Plan
Q3 2024	Latest date at which Noise Action Plans are to be made
Q3 2024	Latest date for which Noise Action Plans are to be published
Q3 2024	Latest date for which summaries of Noise Action Plans are to be submitted to the EPA
18 January 2025	Summary Noise Action Plans to be reported using EEA Reportnet 3 – ENDRM DF7_10

The action plan must be reviewed and, if necessary, revised:

- In the event of a material change in environmental noise in the area concerned,
- If requested by the Agency or
- Not later than 5 years after the date on which it was made or last reviewed.

2 Noise and Effects on Health and Quality of Life

2.1 Noise Level Indicators

Noise is unwanted sound that can eventually cause disturbance, impairment, or damage to health.

Sound levels are expressed in decibels (dB) on a logarithmic scale, where 0dB is nominally the 'threshold of hearing' and 120dB is nominally the 'threshold of pain'. The frequency of sound is the rate at which a sound wave oscillates and is expressed in Hertz (Hz). The sensitivity of the human ear to different frequencies in the audible range is not uniform. A mechanism known as 'A-weighting' has been adopted in order to account for this non-linearity of the human ear. Sound levels expressed using 'A-weighting' are typically denoted dB(A).

There are various metrics that can be used for describing, assessing and communicating the effects of noise.

Article 6.2 of the Environmental Noise Directive specifies the use of two noise level indicators when preparing environmental noise maps and action plans, the L_{den} and L_{night}.

- L_{den} – the day, evening and night-time noise indicator based on day (07:00-19:00), evening (19:00-23:00) and night (23:00-07:00). This is the noise indicator for overall annoyance.

- L_{night} – the noise indicator for the night-time period from 23:00 – 07:00. This is the noise indicator for sleep disturbance.

The noise maps use harmonised noise indicators L_{den} (day-evening-night equivalent level) and L_{night} (night equivalent level). The indicators are weighted to account for the fact that the same noise level may be more annoying at different times of the day.

The L_{den} and L_{night} noise indicators are plotted separately for the major roads in Galway City. The different colour-coded bands on the noise map represent the predicated decibels (dB(A)) within a certain range.

The Table below summarises the noise level indicators relevant to environmental noise. All indicators are expressed in terms of decibels (dB).

Table 3 Noise Level Indicators

Indicator	Description
L_{den}	• Day-evening-night noise indicator • Representative of 24-hour period • 5dB penalty applied to evening levels and 10dB penalty to night levels to reflect people's extra sensitivity to noise during these periods • Noise indicator for overall annoyance • END threshold of 55dB for reporting on the population exposed
L_{night}	• Night-time equivalent sound level • Representative of night period (23:00-07:00) • Noise indicator for sleep disturbance • END threshold of 50dB for reporting on the population exposed
L_{Amax}	• Maximum sound level during measurement period
$L_{Aeq, T}$	• Equivalent sound level of period of T hours • Most common are L_{Aeq}, $L_{Aeq, 16hr}$, $L_{Aeq, 24hr}$
SEL	• Numerically equivalent to the total sound energy of an event normalised to 1-second

2.2 Effects on Health and Quality of Life

The World Health Organisation (WHO) and European Environment Agency (EEA) have conducted research into the links between environmental noise exposure and health. These studies have shown that excessive noise exposure can interfere with people's daily activities at school, work, home and during leisure time. It can cause sleep disturbance, cardiovascular and psychological effects, reduce performance and provide annoyance responses and changes in social behaviour.

The WHO Night Noise Guidelines for Europe (2009) recommended an annual average night-time exposure not exceeding 40dB(A) outdoors to protect human health.

The WHO Environmental Noise Guidelines for the European Regional (October 2018) recommends that long-term expose to noise from road traffic should not exceed 53dB during the day and 45dB during the night-time. A summary of the WHO guideline levels is illustrated in Table 4.

Table 4 WHO Noise Guideline Levels

Level of effect	Source	Level	WHO Guidelines
No effect on sleep is observed	Any	Below 30 dB $L_{night, inside}$ Below 42 dB $L_{Amax,inside}$	NNG 2009
Lowest observed adverse effect level (LOAEL) for night noise	Any	40 dB $L_{night,outside}$	NNG 2009
Noise above these levels is associated with adverse health and sleep effects	Aircraft	45 dB $L_{den, outside}$ 40 dB $L_{night,outside}$	ENG 2018
	Railways	54 dB $L_{den, outside}$ 44 dB $L_{night,outside}$	ENG 2018
	Roads	53 dB $L_{den, outside}$ 45 dB $L_{night,outside}$	ENG 2018

The European Environment Agency estimates that approximately 113 million people in the European Union are exposed to noise levels from road traffic that are equal to or above 55 dB L_{den}.

The EU Action Plan: 'Towards a Zero Pollution for Air, Water and Soil' (and annexes) was adopted by the European Commission on 12 May 2021. This action plan has a target to reduce the share of people chronically disturbed by transport noise by 30% by 2030, compared to 2017 levels (European Commission).

To achieve this commitment, the EC has agreed on a number of actions:

- Monitoring progress towards achieving a 30% reduction on people chronically disturbed in 2030 based on EEA assessments.
- Improving the EU noise-related regulatory framework on tyres, road vehicles, railways, aircrafts, also at international level.
- Reviewing progress in 2022, based on noise pollution trends resulting from Member States noise, and consider whether there is a need to set noise reduction targets at the EU level in the Environmental Noise Directive.
- Improving integration of noise action plans into sustainable urban mobility plans and benefitting from an extension of clean public transport and active mobility (ETC-HE Report 2022/5 Projected health impacts from transportation noise – Exploring two scenarios for 2030).

The EPA Research Report No. 423 Environmental Transport Noise and Health: Evidence from Ireland (Noise-Health) makes a number of recommendations in relation to the management of environmental noise at both EU and national level. The recommendations for EU level policy include the stipulation of limit values for population exposure to potential harmful levels of noise. The report also recommends consideration to include noise limit values which would trigger a mitigation response from the relevant authorities. Other recommendations relate to the definition of quiet areas in the END and guidelines to raise public awareness about noise pollution.

At national level, the Report recommends responsibility for the strategic noise mapping process be centralised to ensure consistency. Noise mapping data for all roads in agglomerations be submitted to the EC to better reflect the number of people exposed to environmental noise from road traffic. The report also recommends that Ireland develop an ambient noise strategy to ensure best practices and guidance is utilised to manage environmental noise.

Recommendations were also made for the management of a noise complaints management system in accordance with international best practice.

3 EU Legal and Policy Framework

3.1 EU Policy and Guidance

3.1.1 Zero Pollution Action Plan

The EU Action Plan: 'Towards a Zero Pollution for Air, Water and Soil' (and annexes) was adopted by the European Commission on 12 May 2021.

The Zero Pollution Action Plan for 2050 has a vision for air, water, soil and noise pollution to be reduced to levels which are no longer harmful to health and the environment. The plan sets out key targets to accelerate the reduction of pollution at source.

The targets include:

- Improving air quality to reduce the number of premature deaths caused by air pollution by 55%
- Reducing plastic litter at sea by 50% and reducing microplastics litter by 30%
- Improving soil quality by reducing nutrient losses and use of chemical pesticides by 50%
- Reducing the number of people disturbed by transport noise by 30% (compared to 2017 levels)
- Reducing waste generated and residual municipal waste by 50%

Environmental noise is caused by road, rail, airports, industry and construction activities. According to the World Health Organisation (WHO) prolonged exposure to noise can lead to serious illnesses including cardiovascular disease, sleep disturbance, tinnitus, severe annoyance and reduced cognitive performance in children. The economic costs of noise pollution include increased demands on health systems, less productive working days and reduced property values.

There is an EU regulatory framework for noise at source including for tyres, road vehicles, airports and railways. It is recommended that noise action plans should be integrated into sustainable urban mobility plans to reduce noise pollution.

The ETC-HE Report 2022/5 Projected health impacts from transportation noise – Exploring two scenarios for 2030 presented the findings from projected conservative and best scenarios examined. Inside agglomerations, both scenarios result in a reduction in the people exposed by 2030. Outside agglomerations, noise pollution is only reduced in the best implementation scenario. However, in both cases the reduction is below the 30% target. The report outlines how the more limited number of abatement measures outside agglomerations (major roads) may explain its lower performance than inside agglomerations. The report states that a combination of measures including switching to electric vehicles in cities, reductions in speed limits and the use of low noise surfaces and noise barriers could result in a reduction between 3-15% in the number of people being affected by road traffic noise.

3.1.2 EEA Reports

3.1.2.1 Good Practice Guide on Quiet Areas (GPG) – EEA Technical Report No. 4/2014

The aim of the END is to define a common approach to avoid, prevent, or reduce the harmful effects of noise. The Directive aims to preserve environmental noise quality where it is good and to preserve quiet areas. The latter is an area that is undisturbed by noise created by human activities. The GPG states that quiet areas do not have to be silent but rather an area where noise is absent or not dominant. Access to quiet areas benefits the health and wellbeing of residents and visitors.

Quiet areas are usually identified by noise mapping, measurement of in-situ sound levels, evaluation of user/visitor experience and expert assessments. The report recommends that quiet areas in agglomerations may need to be assessed differently to quiet areas in rural countryside.

The GPG recommended that the four methods stated above be used to identify quiet areas. It also introduced the Quietness Suitability Index (QSI) as a means of assessing potential quiet areas outside urban areas. However, it also recommended further research and collaboration to support development on this topic.

3.1.2.2 Quiet Areas in Europe EEA Report No 14/2016

This report examines quiet areas in Europe's rural countryside and the extent to which these areas are undisturbed by noise pollution.

Quiet areas may be found in cities and in open countryside. The END defines a quiet area in open country as an area, delimited by the relevant authority, that is largely undisturbed by noise from traffic, industry or recreational activities. Protecting these areas can bring significant environmental health benefits, however, access to these areas is required to realise these benefits.

The report provides a first assessment of the potential quiet areas in Europe's open country. It also presents a quietness index for Europe as a whole and for individual EEA member countries. An assessment of the accessibility of Europe's potential quiet areas is included in this study.

The report concluded that noise pollution impacts on human health and the environment in Europe and protecting areas, which are not affected by noise, can result in environmental health benefits.

The report elaborates on the Quietness Suitability Index (QSI) as a means of identifying potential quiet areas in open country. This assessment method describes quietness as a combination of noise limit values and land use and land cover elements that is perceived as positive. The QSI is based on the thresholds specified in the END, therefore, areas with acoustic quality below 55dB L_{den} should be preserved.

The report contains maps of potential quiet areas in Europe based on the QSI. The highest proportion of quiet areas (QSI=1) are in northern Europe with the noisiest areas (low QSI values) located primarily in areas with higher population densities and major transport infrastructure. Ireland has one of the highest proportion of quiet areas with more than 50% with QSI>0.75.

The definition and delineation of quiet areas is mainly intended for the benefit of people in order to improve quality of life and wellbeing (EEA, 2010). Therefore, access to quiet areas is important to realise this benefit. This paper analysed the accessibility of quiet areas within 1 hour from cities with more than 50,000 inhabitants. Ireland has one of the highest accessibility per inhabitant (above 100ha/inhabitant). One of the challenges going forward is to protect these quiet areas from noise pollution. The measures required to meet this include land use planning, appropriate development of transport corridors and regulation of industry.

3.1.2.3 Environmental Noise in Europe – 2020 EEA Report No 22/2019

This report gives an assessment of the European population which is exposed to high levels of environmental noise and the associated health effects based on the World Health Organisation (WHO) Environmental Noise Guidelines for the European Region (2018). The report outlines the actions being taken to manage and reduce noise exposure and to review progress.

The report highlights that environmental noise and in particular road traffic noise remains a major environmental problem which affects the health and wellbeing of millions of Europeans. The number of people exposed to high levels of noise has remained stable since 2012, however, this is expected to rise as a result of urban growth and mobility demand.

The effects of exposure to environmental noise are not uniform across the population, socially deprived groups and groups with increased susceptibility to noise may suffer more pronounced health-related impacts of noise.

European member states are taking action to manage and reduce environmental noise. These measures include mitigation of noise at source, land use and urban planning. Despite these measures, policy objectives to reduce environmental noise and to move toward the WHO recommended levels by 2020 has not been achieved. Progress is also required on designating quiet areas in the countryside and to ensure to designate quiet areas in cities.

3.1.2.4 Phenomena Project – Assessment of Potential Health Benefits of Noise Abatement Measures in the EU 2021

The Phenomena Study was undertaken to explore the potential measures capable of delivering reductions in adverse health effects due to environmental noise.

The report focused on areas in agglomerations and along major roads with a noise level above 53 dB L_{den}, railways with noise levels above 54 dB L_{den} and airports with noise levels above 45 dB L_{den}. The study included an analysis of the summaries of 200 NAPs and an in-depth analysis of 100 NAPs from Member States to identify noise abatement measures. . Stakeholders were also consulted on the effectiveness of implemented noise abatement measures.

The study found that noise barriers and road surface were the most commonly used solutions. Planned measures in many of the NAPs studied included mobility plans, speed limits and traffic re-routing. The report concluded that combined solutions are required to achieve a reduction in road traffic noise.

3.2 EU Regulations and Directive

3.2.1 EC Directive 2002/49/EC - Environmental Noise Directive (END)

Directive 2002/49/EC of the European Parliament and of the Council relates to the assessment and management of environmental noise and is commonly referred to as the Environmental Noise Directive (END).

The aim of the Directive is '*to define a common approach intended to avoid, prevent or reduce on a prioritised basis the harmful effects, including annoyance, due to exposure to environmental noise'*.

Article 3(a) of the END defines environmental noise as 'unwanted or harmful outdoor sound created by human activities, including noise emitted by means of transport, road traffic, rail traffic, air traffic, and from site of industrial activity'.

Article 3(b) defines harmful effects as 'negative effects on human health'.

To achieve the aim of the Directive, 3 stages are set out:

- Undertake strategic noise mapping to determine exposure to environmental noise;
- Ensure information on environmental noise and its effects is made available to the public;
- Adopt action plans, based on noise mapping results, with a view to prevent and reduce environmental noise where necessary and particularly where exposure levels can induce harmful effects on human health and to preserving environmental noise quality where it is good.

The Directive applies to environmental noise to which humans are exposed, in particular, 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. The Directive does not apply to noise that is caused by the exposed person, noise from domestic activities, noise created by neighbours, noise at workplaces or noise inside means of transport or due to military activities in military areas.

3.2.2 EU Directive 2015/996 – CNOSSOS-EU

Directive 2015/996 established the common noise assessment methods according to Directive 2002/49/EC. This replaced Annex II of the END, removed the recommended Interim Methods, and established the common noise assessment methods.

The Directive sets out the noise calculation methods (CNOSSOS-EU) in the Annex, and some guidance on aircraft modelling, and database tables of input data for roads, railway and aircraft in a series of Appendices. The CNOSSOS-EU methods are to be used for strategic noise maps under the END from 31 December 2018.

This Directive was transposed into Irish Law by S.I. No. 549/2018 the Environmental Noise (Amendment) Regulations 2018.

A Corrigendum to CNOSSOS-EU 2018 was published in January 2018 to address errors in the original Directive.

3.2.3 EU Regulation 2019/1010 – Alignment of Environmental Reporting Obligations

Regulation 2019/1010 on alignment of reporting obligations in the field of legislation related to the environment, and amended Directive 2002/49/EC.

Regulation 2019/1010 establishes the European Environment Agency (EEA) as managers of a data repository. It also provides for an additional 12 months for the development of R4 Noise Action Plans.

This Regulation was transposed into Irish Law by S.I. No. 549/2018 the Environmental Noise (Amendment) Regulations 2018.

3.2.4 EU Directive 2020/367 Assessment Methods for Harmful Effects of Environmental Noise

Directive 2020/367 amended Annex III of the END and established health impact assessment methods. The assessment methods for the harmful effects of environmental noise are based on the dose-response relationship established in the WHO ENG 2018. The health impacts to be assessed and reported for agglomerations and major sources are: number of people Highly Annoyed (HA) and number of people Highly Sleep Disturbed (HSD) for roads, railways and aircraft; and instances of Ischemic Heart Disease (IHD) for roads.

The Directive was transposed into Irish Law by S.I. No. 549/2018 the Environmental Noise (Amendment) Regulations 2018.

3.2.5 EU Directive 2021/1226 Amending for the purposes of adapting to scientific and technical progress, annex II to Directive 2002/49/EC

This Directive introduced a number of amendments to CNOSSOS-EU (annex II of the END), including the alignment of the aircraft noise section with European Civil Aviation Conference (ECAC) noise calculation method, called ECAC doc. 29 4th version. New noise emission factors and road surface corrections were also included in the revisions.

This Directive was transposed into Irish Law by S.I. No. 549/2018 the Environmental Noise (Amendment) Regulations 2018.

3.2.6 Commission Implementing Decision (EU) 2021/1967 – Data Repository and Information Exchange

Commission Implementing Decision (EU) 2021/1967 sets up a mandatory data repository and a mandatory digital information exchange mechanism in accordance with Directive 2002/49/EC. It established mandatory reporting under the END to the EEA Reportnet platform.

Commission Implementing Decision (EU) 2021/1967 was given full effect by S.I. No. 549/2018 the Environmental Noise (Amendment) Regulations 2018.

3.2.7 EC Directive 2010/75/EU Industrial Emissions Directive (IED)

Directive 2010/75/EU on industrial emissions (Integrated Pollution Prevention and Control) is the main EU instrument regulating pollutant emissions, including noise from industrial

installations. The IED aims to achieve a high level of protection of human health and the environment by reducing harmful industrial emissions across the EU, in particular through better application of Best Available Techniques (BAT).

The Directive is transposed into Irish Law by S. No. No. 138/2013 European Union (Industrial Emissions) Regulations, 2013. The EPA is the competent authority for permitting under the Regulations.

3.2.8 EU Regulation 598/2014 Noise Relation Operating Restrictions at Union Airports with a Balanced Approach (BAR Regulations)

Regulation EU No. 598/2014 established rules and procedures regarding the introduction of noise-related operating restrictions at EU airports within the International Civil Aviation Organisation (ICAO) Balanced Approach.

The ICAO framework was adopted at the 37th Session of the ICAO Assembly in 210 and contains a process for implementing the concept of the 'Balanced Approach' to manage aircraft noise at international airports.

The Balanced Approach Guidance recommends identifying noise issues associated with an airport and then considering the measures available to reduce noise, with appropriate consideration of the following:

- The reduction of noise at source,
- Use of land planning and management
- Noise abatement operational procedures
- Operating restrictions, only after consideration of the other preceding measures, and may include air traffic movement and noise quotas.

The legislation applies to all airports in Europe with more than 50,000 movements per year. This is the same threshold used in Directive 2002/49/EC to define a "major airport".

While there is an airport located east of Galway City at Carnmore, the airport is closed to commercial flights. Based on air traffic levels, in Ireland, the regulations only apply to Dublin Airport.

The Aircraft Noise (Dublin airport) Regulation Act 2019 gives effect to EU Regulation 598/2014 and establishes Fingal County Council as the Airport Noise Competent Authority (ANCA) for the purposes of the Regulations with exclusive competence in relation to operating restrictions at Dublin Airport.

The Act provides that noise generated by aircraft activity at the airport, including flight activity, will be subject to assessment, monitoring and review.

The competent authority is required to assess noise in accordance with the European Communities (Environmental Noise) Regulations 2018 (S.I. No. 549 of 2018) and the Environmental Noise Directive. Where a noise problem has been identified, the competent authority must adopt a Balanced Approach.

The competent authority must publish reports on its draft decisions on its website. Notices must be published in national newspapers advising the public when draft decisions are made and where information in relation to decisions can be accessed. Members of the public can make observations/submissions on draft decisions, within the allowable 14 week timeframe, and these must be considered by the competent authority prior to the making of any

decision. An Bord Pleanála is the appeal body for the purposes of the Aircraft Noise Regulations.

3.2.9 EC Directive 2009/33/EC Promotion of Clean and Energy Efficient Road Transport Vehicles (Clean Vehicles Directive)

Directive 2009/33/EC requires public authorities and certain other transport operators to consider the impact of clean and energy-efficient vehicles during their operational lifetime in terms of energy consumption, CO2 emissions and other pollutant emissions.

The Directive was transposed into Irish Law by S.I. No. 339/2011 European Communities (Clean and Energy-Efficient Road Transport Vehicles) Regulations 2011.

3.2.10 EU Directive 2019/1161 amending EC Directive 2009/33 on the promotion of clean and energy-efficient road transport vehicles

Directive 2019/1161 EU defines 'clean vehicles', promotes clean mobility solutions in public procurement tenders and sets national targets for member states public procurement. The Directive does not include special vehicles such as those used by armed services, fire services, civil defence.

The Directive was transposed into Irish Law by S.I. No. 381/2021 European Communities (Clean and Energy Efficient Road Transport Vehicles) (Amendment) Regulations 2021.

3.2.11 Regulation EU 2020/740 Labelling of tyres with respect to fuel efficiency and other parameters

Regulation EU 2020/740 sets out the requirements for labelling tyres to allow consumers to make an informed choice when purchasing tyres, for the purpose of increasing safety, the protection of health, and the economic and environmental efficiency of road transport, by promoting fuel-efficient, long-lasting and safe tyres with low noise levels.

The labels will display information on tyre performance including the fuel efficiency class, the wet grip class, the external rolling noise class and the measured value.

This Regulation apply to tyres produced from May 2021, for passenger cars (C1 tyres), buses and coaches, light and heavy goods vehicles, and light and heavy trailers (C2 and C3 tyres).

This regulation was given effect in Irish law by S.I. 670/2022 European Union (Tyre Labelling) (Energy Efficiency(Regulations 2022.

3.2.12 Regulation EU 540/2014 Sound level of motor vehicles and of replacement silencing systems

These regulations introduced new noise limit value levels for motor vehicles which became/will become applicable in 2016, 2022 and 2026. These sound levels apply to new vehicles and range from 68dB(A) – new passenger cars by 2026 to 82dB(A) – new trucks 2016.

S.I. No. 670/2022 European Union (Tyre Labelling)(Energy Efficiency) Regulations 2022 give effect to Regulation EU 540/2014.

This Regulation was amended by Commission Delegated Regulation EU 2017/1576 and Commission Delegated Regulation EU 2019/839.

3.2.13 Regulation EU 858/2018 Approval and market surveillance of motor vehicles and their trailers, and of systems, components and separate technical units intended for such vehicles

Regulation EU 858/2018 sets out the rules on the technical requirements and procedures to ensure that new motor vehicles and their trailers confirm to EU standards on safety and environmental protection.

This regulation was given effect in Irish law by S.I. No. 556/2020 European Union (Road Vehicles: Type-Approval and Market Surveillance) Regulations 2020.

3.2.14 Regulation EU 168/2013 Approval and market surveillance of two- or three-wheel vehicles and quadricycles

Regulation EU 168/2013 sets out technical requirements that vehicles must conform with and the approval mechanism for the certification of compliance with these standards.

This Regulation was given effect by S.I. No. 614/2015 European Union (Two or Three Wheel Motor Vehicles and Quadricycles Type-Approval) Regulations 2015.

3.2.15 Regulation EU 2019/2144 on type-approval requirements for motor vehicles and their trailers, and systems, components and separate technical units intended for such vehicles, as regards their general safety and the protection of vehicle occupants and vulnerable road users

Regulation (EU) 2019/2144 concerning type-approval requirements for motor vehicles and their trailers, systems, components and separate technical units intended for such vehicles, as regards to their general safety and the protection of vehicle occupants and vulnerable road users, lays down fundamental provisions on vehicle safety, carbon dioxide and rolling noise emissions from tyres.

The requirements for tyre performance included therein are replaced by the equivalent in UN Regulation Number 117. The latter classifies tyres in different categories depending on intended use and sets uniform provisions regarding the approval of tyres including with respect to rolling sound emissions.

The regulation was given effect into Irish law by S.I. No. 201 of 2024 European Union (Road Vehicles: Type-Approval and market Surveillance)(Amendment) Regulations 2024.

The National Standards Authority of Ireland (NSAI) is the appointed approval authority in Ireland and has responsibility for issuing all national approvals for brand new unregistered vehicles.

3.2.16 EU Directive 2014/45 on Periodic roadworthiness tests for motor vehicles and their trailers and repealing Directive 2009/40/EC

This Directives establishes minimum standards for a regime of periodic roadworthiness test of vehicles used on public roads.

Annexes I and II detail the categories of vehicles to be tested, the frequency of testing and the items to be tested. A vehicle's noise suppression system (including exhaust silences and under bonnet noise) is inspected. Maximum permissible exhaust sound for different vehicles and fuel type are set out in the directive.

The Directive has been transposed into Irish legislation under S.I. No. 554/2020 European Union (National Car Test – EU Roadworthiness Certificates) and S.I. No. 617/2021 European Union (Commercial Vehicle Roadworthiness)(Roadworthiness Certificate and Roadworthiness Test) Regulations 2021.

The Regulation also introduced requirements for all new electric vehicles to be fitted with an Acoustic Vehicle Alerting System (AVAS) from April 2019 to alert pedestrians of the presence of electric vehicles running below 20km/h.

4 National Legal and Policy Framework

4.1 National Policy and Guidance

4.1.1 National Planning Framework - National Policy Objective 65

The 'National Planning Framework 2040' was published in 2018 and is to be used as the guideline for current planning policy. Specific reference to noise is made under 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."

The National Planning Framework will support:

- Noise management and action planning measures through strategic noise mapping, noise action plans and suitable planning conditions;
- Good acoustic design in new developments, in particular residential development, through a variety of measures;
- The further enjoyment of natural resources through the preservation of low sound levels or a reduction in undesirably high sound levels.

Extra value is placed on areas with low sound levels, coined Quiet Areas, because they are deemed to be of environmental quality and to have a positive impact on quality of life.

The National Planning Framework lists noise management as one of its Environment and Sustainability Goals for creating a clean environment for a healthy society.

On 20th June 2023, the Government gave approval to commence the process of undertaking the First Revision of the National Planning Framework in accordance with Section 20C(5) of the Planning and Development Act, 2000 (as amended) and to publish the Road Map for the First Revision.

However, on 5th March 2024 the Government agreed to the deferral of the approval of a revised National Planning Framework until data from Census 2022 is available for inclusion in demographic and econometric modelling.

4.1.2 National Development Plan 2021-2030

The National Development Plan (NDP) represents the strategy for investment in infrastructure and public services. The NDP pledges an investment of €165 billion to address the opportunities and challenges faced by Ireland including housing, health, Brexit, climate action and a projected growth in population of 1 million people between 2016 and 2040.

4.1.3 EPA Guidance

Environmental noise is unwanted or harmful noise arising from all human activity. In Ireland the most widespread sources of noise pollution are from various forms of transport including road, rail and airports.

The EPA is the national authority for overseeing the implementation of the Environmental Noise Regulations. The EPA has responsibility for issuing waste, IE and IPC licences which may have conditions stipulating noise control measures.

The EPA published guidance notes pertaining to strategic noise mapping and for noise action planning. Round 4 Strategic Noise Mapping of Major Roads for the fourth round of the Environmental Noise Regulations 2018 was published in 2021. It sets out the responsible authorities and the extent of the roads to be mapped in Round 4. The document outlines the traffic data to be used and the CNOSSOS-EU 2015 methodology to be used for noise mapping.

The EPA Draft Guidance Note for Noise Action Planning Version 2 was circulated to all local authorities in March 2024. This document sets out the statutory responsibilities and requirements for developing noise action plans.

The Framework provides guidance on identifying important areas (IA), most important areas (MIA) and priority important areas (PIA). Important areas are locations which are exposed to noise which may be harmful to human health. Most important areas are sites where the health effects are the highest and priority important areas are a selection of MIAs which the action planning authority propose to address during the implementation of the Noise Action Plan.

4.1.4 TII Guidance

In 2004, the former National Roads Authority, now Transport Infrastructure Ireland, published a guidance document, entitled 'Guidelines for the Treatment of Noise & Vibration in National Road Schemes'. The purpose of the document is to provide guidance on the treatment of noise and vibration during the planning and design of national road schemes and cover the constraints, route corridor selection and environmental impact assessment stages. The Guidelines also set out a 'design goal' for noise to ensure that the current roads programme proceeds on a path of sustainable development.

TII published a further guidance document entitled 'Good Practice Guidance for the Treatment of Noise during the Planning of National Road Schemes' in 2014.

The current design goal is that all national road schemes should be designed, where feasible, to meet a day-evening-night sound level of 60 dB L_{den} (free-field residential façade criterion), at both in the year of opening and in the design year The guidelines put forward measures for mitigation of the adverse effects of road construction in so far as possible through the use of measures such as alignment changes, barrier construction and the use of low noise road surfaces.

The Good Practice Guidance is intended to expand and supplement the advice already provided in the Guidelines.

TII's National Roads 2040 (NR2040) is TII's strategy for planning, operating and maintaining the National Road network. The document aligns with commitments in other policy document including the Climate Action Plan and the DoTTS's National Sustainable Mobility Policy. The Transport sector is required to reduce emissions by 50 percent by 2030. The achievement of these reductions will, potentially, have a positive impact on environmental noise generated by road traffic.

4.1.5 National Planning Guidance

4.1.5.1 National Climate Action Plan 2023 (CAP 2023)

The National Climate Action Plan 2023 was prepared under the Climate Action and Low Carbon Development (Amendment) Act 2021, and following the introduction, in 2022, of economy-wide carbon budgets and sectoral emissions ceilings. The plan implements the carbon budgets and sectoral emissions ceilings and sets out a roadmap for taking decisive action to halve our emissions by 2030 and reach net zero no later than 2050, as committed to in the Programme for Government.

At national level, transport accounted for approximately 19% of Ireland's greenhouse gas (GHG) emissions. CAP 2023 sets an ambitious target of 50% reduction in transport emissions nationally by 2030.

The 'Avoid, Shift, Improve' framework will be used as a tool to reduce emissions. This entails avoiding or reducing private car travel, shifting to sustainable modes of transport and improving the efficiency of vehicles we use. The action measures related to active travel include:

Table 5 CAP 2023 Active Travel Action Measures

Action Number	2023 Action
TR/23/20	Advance speed management and enforcement work programme
TR/23/25	LAs to identify roads and streets suitable for road reallocation
TR/23/27	Pedestrian enhancement plans developed for five metropolitan areas
TR/23/29	Advance roll-out of 1,000km walking/cycling infrastructure
TR/23/30	Advance roll-out of National Cycle and Greenway Networks
TR/23/31	Advance widespread and consistent implementation of National Cycle Manual guidance and the Design Manual for Urban Roads and Streets with DHLGH
TR/23/32	Leverage of Protection and Renewal road infrastructure programme to enhance safety of sustainable mobility users
TR/23/34	Identify and implement mechanisms for improved multiple Local Authority delivery of strategic, network-based Active

	Travel projects (e.g. NTA-led projects, Section 85 Agreements under the Local Government Act 2001) in line with the objective of CycleConnects pathfinder project
TR/23/35	Advance BusConnects programme in 5 cities
TR/23/49	Expand operation and availability of bike share schemes nationally

The wider potential benefits of these changes include reduced noise pollution, improvements in air quality and health benefits.

4.1.5.2 Electric Vehicle Charging Infrastructure Strategy 2022-2025

The Electric Vehicle Charging Infrastructure Strategy 2022-2025 was launched in January 2023. The strategy aims to deliver an accessible national electric vehicle charging network which will facilitate the change over from fossil fuelled vehicles to electric vehicles.

The Zero Emissions Vehicles Ireland (ZEVI) Office was established to oversee the delivery of this infrastructure. The provision of this infrastructure will assist meeting the ambition of having one million EVs on the roads by 2030.

The Infrastructure Strategy will be reviewed in 2025 with an updated strategy being published for 2026-2030.

4.1.6 National Sustainable Mobility Policy

The National Sustainable Mobility Policy sets out a strategic policy framework for active travel and public transport to support Ireland's overall requirement to achieve a 51% reduction in carbon emissions by the end of this decade.

This policy has a target to deliver at least 500,000 additional daily active travel and public transport journeys and a 10% reduction in kilometres driven by fossil fuelled cars by 2030 in line with the metrics for transport set out in the Climate Action Plan. The achievement of these targets will potentially impact positively on noise pollution from road traffic sources.

4.1.7 National Speed Limit Review

The National Speed Limit Review was published by the Department of Transport in September 2023.

The key recommendations include a default speed limit of 30km/h for urban centres, residential areas and locations where there is a significant presence of vulnerable/active road users. Exceptions to this may be permitted in pedestrian zones/ shared spaces where a 20km/h speed limit would apply, national, regional and key public transport routes where a

50km/h speed limit would apply; 60km/h speed limit on transition zones on national, regional, arterial and key public transport routes.

The report recommends that the speed limit be reduced from 100km/h to 80km/h on national secondary roads. A reduced speed limit of 60km/h is recommended for local roads.

Specific recommendations were made on the application of speed limits for particular circumstances including cycle street, school speed zones, urban shared space, pedestrian zones, slow zones, quiet lanes, rural cycleway/greenway, variable speed limit zones, roadworks speed limit zones, gateways and transition zones, restricted roads and traffic calming.

A review of existing guidelines is underway and it is envisaged that primary legislation to implement the recommendations will be introduced during 2024. The introduction of new lower default speed limits may potentially result in reduced road traffic noise levels.

4.2 National Legislation

4.2.1 Noise Regulations

The END was transposed into Irish Law by the Environment Noise Regulations 2006 (S.I. 140/206).

The Regulations set out to 'provide for the implementation in Ireland of a common approach within the European Community intended to avoid, prevent or reduce on a prioritised basis the harmful effects, including annoyance, due to exposure to environmental noise'.

The Regulations aim to address local noise issues by requiring competent authorities to draw up action plans to reduce noise where necessary and maintain the environmental acoustic quality where it is good. The Directive does not set any limit value, nor does it prescribe the measures to be used in the action plans, which remain at the discretion of the competent authorities. As with the Directive itself, the Regulations do not apply to nuisance noise which can be dealt with under the Environmental Protection Agency Act 1992.

These regulations were revised by the European Communities (Environmental Noise) Regulations 2018 (S.I. 549/2018) which transposed Commission Directive (EU) 2015/996 into Irish Law. The CNOSSOS-EU methodology has been used to produce the strategic noise maps and to calculate the noise exposure statistics and harmful effects of road traffic noise.

The European Communities (Environmental Noise)(Amendment) Regulations 2021 (S.I. 549/2018) set out the establishment of common noise assessment methods

The Regulations were amended further by S.I. No. 663/2021 European Communities (Environmental Noise) Amendment Regulations 2021 which set out the alterations to the agglomeration boundaries. The Amendment also gave effect to a one-year extension granted by the EU for the completion of the Round 4 Noise Action Plans from 2023 to 2024.

The European Communities (Environmental Noise)(Amendment) Regulations 2021 (S.I. 663/2021) set out the establishment of common noise assessment methods and allow for the development of a data repository and a means to enable EU Member States to share information on strategic noise maps and noise action plans. The definition of agglomerations was also updated in these regulations to reflect the growth of the urban

landscape in recent years. The Regulations set out the assessment methods for the harmful effects of noise.

4.2.2 EPA Act

Noise pollution is covered by the Environmental Protection Agency Act, 1992, and the Protection of the Environment Act, 2003.

The EPA Act 1992 addresses the control of noise in two ways:

- Under the provision and requirements of Part IV of the EPA Act, 1992
- Under the provisions and requirements of Section 106, 107, 108 and 109 of Part VI of the EPA Act, 1992.

Section 106 of the Act deals with the introduction of Regulations for the control of noise. The Minister has the power to introduce regulations under the Act, in order to prevent or limit noise.

Section 107 of the EPA Act deals with the powers of the EPA or local authorities to require measures to be taken to prevent or limit noise.

Section 108 sets out a process whereby noise issues may be taken to the District Court, which may make an order requiring that the person or body responsible for the noise takes steps to eliminate or ameliorate the noise in question.

Section 109 states that the provisions of sections 106, 107 and 108 shall be without prejudice to the provisions of the Safety, Health and Welfare at Work Act, 1989.

4.2.3 The Roads Act 1993

This legislation sets out the responsibilities of roads authorities for the maintenance and construction of public roads. The legislation was amended in 2015 with the creation of Transport Infrastructure Ireland (TII) from the merger of the National Roads Authority and the Railway Procurement Agency.

Under Section 77 of the Roads Act 1993, the Minister may make regulations requiring relevant road authorities to mitigate the effects of road traffic noise. The Minister may specify limits for road traffic noise which, if exceeded, would require mitigation action from road authorities.

There are currently no statutory limits or standards for governing road traffic noise or its assessment on either new or existing roads.

4.2.4 S.I. No. 381/2021 – European Communities (Clean and Energy Efficient Road Transport Vehicles)(Amendment) Regulations 2021

These regulations transpose into Irish law the provisions of the European Clean Vehicle Directive. The Directive defines ‘clean vehicles’, promotes clean mobility solutions in public procurement tenders and sets national targets for member states public procurement. The Directive does not include special vehicles such as those used by armed services, fire services, civil defence.

Under the Directive a ‘clean vehicle’ is defined as:

- Clean light duty vehicle is any car or van meeting the following emission thresholds: Until 31 December 2025: no more than 5og/kg CO2 and up to 80% of applicable real driving emission (RDE) for NOx and PN;
  From 1 January 2026: only zero emission vehicles

- Clean heavy-duty vehicle: any truck or bus using one of the following alternative fuels: hydrogen, battery electric (including plug-in hybrids), natural gas, liquid biofuels, synthetic and paraffinic fuels, LPG.

Ireland's target is to procure 38.5% of clean vehicles in public procurement tenders. The target for buses is 45%.

As the changeover to cleaner vehicles, including zero emission vehicles, progresses this has potential to have a positive impact on road traffic noise pollution.

4.2.5 IPPC/IED

The Environmental Protection Agency Office of Environmental Enforcement (OEE) published in January 2016 a guidance document entitled 'Guidance Note for Noise: Licence Applications, Surveys and Assessments in Relation to Scheduled Activities (NG4)'. The objective of this guidance is to provide practical information, advice and guidance on noise from activities licensable by the EPA under the Integration Pollution Prevention Control (IPPC) and waste licensing systems. It provided a variety of practical techniques and measures to control noise, and includes suggested daytime, evening and night-time limits, of 55 dB(A) L_{arT}, 50 dB L_{arT} and 45 dB(A) L_{AeqT}, with said limits to be applied to 'sensitive locations'.

4.2.6 Building Regulations

Technical guidance document Part E (2014) of the Building Regulations 1997 (S.I. No. 497 of 1997) relates to the mitigation of sound transfer between dwellings and rooms within a building. The regulations specify sound insulation levels for walls and floors as detailed below:

Table 6 Sound Insulation Levels

Sound Performance levels		
Separating Construction	**Airbourne sound insulation $D_{nT,w}$ dB**	**Impact sound insulation $L_{nT,w}$ dB**
Walls	53 (min)	-
Floors	53 (min)	58 (max)

The guidance document details the design goals and testing requirements to demonstrate compliance with sound performance levels.

4.2.7 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.

4.2.8 Professional Practice Guidance on Planning and Noise (ProPG)

ProPG was prepared by the Institute of Acoustics (IOA), Association of Noise Consultants (ANC) and the Chartered Institute of Environmental Health (CIEH). The purpose of the document is to "encourage better acoustic design for new residential development and aims to protect people from the harmful effects of noise".

There are two stages in ProG, stage 1 consists of undertaking a site survey to determine the existing noise levels. The results are compared against a graph to determine the potential effects of noise on future residents if no noise mitigation measures are incorporated into the design. Stage 2 is the good acoustic design process to ensure an optimum design for acoustic conditions at each particular site.

4.2.9 Statutory Limit Values in Place or Preparation

The Road Traffic (Construction, Equipment and Use of Vehicles) Regulations 1963 (SI 190 of 1963) address exhaust noise. Under section 29 of the Regulations, combustion engine vehicles must be fitted with a silencer or other device for reducing exhaust noise to a reasonable level.

Section 34(2) states that such silencers must be in good working order.

Section 85(10)(a) states that a person shall not use, or permit to be used, a vehicle that causes excessive noise as a result of defects or poor maintenance of the vehicle or equipment.

The National Car Test (NCT) includes an assessment of silencers in reducing exhaust noise. The 99dB limit advised in the NCT Tester Manual is for older cars, to allow them to be tested against the standards which they were designed to meet. However, a noise test is carried out during the NCT where exhaust noise is excessive.

4.3 Regional and Local Policy and Guidance

4.3.1 NWRA Regional Spatial and Economic Strategy (RSES) 2020-2032

The Northern and Western Regional Spatial and Economic Strategy (RSES), 2020-2032 sets out a strategic regional planning framework for the Northern and Western regions. The RSES supports the role of the City as a Regional City and a key economic driver for the Northern and Western Region.

The RSES supports transition from the private car to sustainable modes of transport and promotes greater efficiency in the use of the transport networks.

Regional Policy Objective (RPO) 3.6.7 supports the delivery of the Galway City Ring Road and Galway Transport Strategy to develop the Galway Metropolitan Area Strategic Plan (GMASP)

RPO 3.6.8 supports the concept of reverse commuting to encourage the increased and efficient use of resources particularly public transport

RPO 3.6.9 supports the provision of a dual railway track between Galway and Athlone

RPO 3.6.13 supports the delivery of a strategic Greenway Network for the GTS to include National Dublin to Galway Cycleway, Oranmore to Bearna Coastal Greenway and the Galway to Clifden Greenway.

RPO 6.12 promotes the upgrade of the capacity of the Athlone-Athenry-Galway rail line

RPO 6.14 supports provision of Smarter Travel Infrastructure

RPO 6.19 supports the reduction on the dependency on fossil-fuel powered bus vehicles

RPO 6.20 undertake network reviews for city, regional centres and support towns across the region, to provide local bus services

RPO 6.23 to provide sustainable travel which will be supported by providing walking and cycling facilities (including Greenway and Blueway projects) as a priority across the region

RPO 6.26 supports the preparation and implementation of local transport plans for Galway Metropolitan Area

RPO 6.33 reduce dependency on the fossil-fuel powered vehicles and have regard to the National Policy Framework for Alternative Fuels Infrastructure for Transport

RPO 6.34 promote deployment of targeted, convenient and safe recharging infrastructure across the region to meet the changing needs of the electric vehicle with particular emphasis on in public parking areas and employment locations

4.3.2 Planning Policy – Galway City Development Plan 2023-2029

Local authorities have it within their powers to set conditions relating to noise as part of a grant of planning permission. Galway City Development Plan 2023-2029 includes policy provisions outlined below, in respect of environmental noise. The policy provisions have been informed by the Noise Action Plan 2019-2023.

Policy no. 9 Air Quality and Noise includes a policy to ‘ensure that developments incorporate measures to minimise noise levels in their design and reduce the emission and intrusion of any noise or vibration which might adversely impact on amenities, in particular residential amenities where appropriate.’

Policy no. 9.6 also states that the Noise Action Plan 2019-2023 shall be considered in the assessment and design of relevant development applications in the interests of protecting future amenity. The Policy also states that environmental noise mitigation measures will be implemented as outlined in the Galway City Council Noise Action Plan 2019-2023.

Section 11.4.1 Land Use Zoning Objectives and Development Standards and Guidelines states that potential noise nuisances shall be addressed at the design stage and appropriate mitigation measures included for in the proposed development.

The Strategic Environmental Assessment (SEA) Report for the City Development Plan 2023-2029 lists the following Strategic Environmental Objective with regard to population, human health, noise:

PHH1 Promote good quality of life based on high quality residential, working and residential environments and on sustainable travel patterns, land uses, including potential adverse noise quality impacts.

PHH3 Minimise noise, vibration and emissions from traffic and minimise impact on residential amenities.

4.3.3 Ardaun Local Area Plan

Galway City Council developed a local area plan for the Ardaun area, which is located on the east of the city. The plan was adopted in 2018 and sets out a strategy and framework to direct the future development of Ardaun as an 'Urban Village' and a sustainable neighbourhood in the city.

A key role and function of Ardaun is to strategically rebalance settlement patterns in the city and to facilitate increased co-location of living and working areas in the city, thereby minimizing travel demand and providing for urban consolidation.

4.3.4 Galway Transport Strategy (GTS)

Galway City Council & Galway County Council in partnership with the National Transport Authority (NTA) developed the Galway Transport Strategy (GTS). The GTS was published in 2016 and is an integrated transport strategy for Galway City and its Environs. The Galway Transport Strategy aims to address the current and future transport needs of the strategy area, including Galway City and the surrounding towns and villages of Bearna, Oranmore, Maigh Cuilin and Baile Chláir.

The National Transport Authority (NTA), in conjunction with Galway City Council and Galway County Council is currently developing the Galway Metropolitan Area Transport Strategy (GMATS), which will replace the GTS.

Public consultation on the draft GMATS is expected to commence in 2024 and following review and consideration of the public consultation responses, the GMATS document will be finalised.

4.3.5 Galway City Council Local Authority Climate Action Plan 2024-2029

The Climate Action and Low Carbon Development (Amendment) Act 2021 requires each local authority to prepare a climate action plan for its administrative area. These plans will enable local authorities to address the mitigation of greenhouse gas emissions and climate change adaptation. The Galway City Council Local Authority Climate Action Plan was adopted at a meeting of Galway City Council held on 12 February 2024.

Private cars are the dominant form of transport in Galway City accounting for 67% of transport emissions. Buses and light/heavy duty vehicles account for 15% and 18% of these emissions respectively. A modal change from private car to sustainable transport including bus, walking and cycling will potentially have a positive impact on transport emissions and noise pollution from road traffic. The Galway City LACAP includes actions to support the

development of greater accessibility, active travel and modal shift away from private vehicles to more sustainable transport modes. The City Council will support the uptake of active travel by engaging with key stakeholders, community groups, institutions and schools.

The decarbonization zone action DZ9 is to achieve a changeover to 40% electric vehicles by 2030. This has the potential to impact positively on road traffic noise pollution in this area.

The Council is transitioning its fleet of vehicles towards more sustainable options including electric vehicles. This potentially will have a positive impact on the effects of transport noise in the city area. Council employees, will, whenever possible, replace business travel with virtual meetings or if travel is necessary utilise environmentally friendly transportation methods. Reducing the number of business private car journeys may contribute positively to road traffic noise pollution levels.

4.3.6 Regional Roads

There is no current guidance in respect of noise from regional roads and no national mandatory noise limits in force in Ireland, and no obligatory sector-specific limits.

The two exceptions are:

- Those referenced in the Planning and Development Regulations 2008, S.I. No. 235/2008 which specifies a 43 dB noise limit in relation to small scale energy production sources such as boilers, wind turbines, heat pumps and CHP plans, and
- By-laws issued in relation to busking.

4.3.7 Galway City Council Special Speed Limit Bye-Laws No. 1, 2023

The Galway City Council Special Speed Limit Bye-Laws No. 1, 2023 came into effect on 28 August 2023. These bye-laws introduced a speed limit of 30km/h in the city centre area.

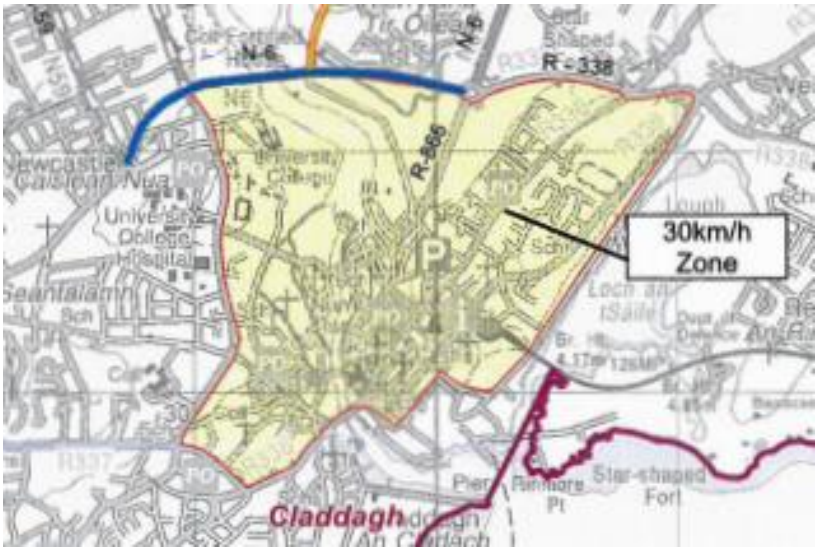


Figure 1 Map of the 30km/h zone in Galway City

4.3.8 Guidelines regarding use of EPA Act

Enfo, the Environmental Information Service has produced a guidance document on the noise regulations. This document is used by Galway City Council when dealing with noise nuisance complaints.

4.3.9 Galway City Council EV Charging Infrastructure

Consultants were appointed by Galway City Council to prepare a strategy for electric vehicle charging infrastructure. The strategy is in draft form and it is intended to be implemented in 2024.

4.3.10 Galway City Council Green Spaces Strategy

Galway City Council is currently developing a Green Spaces Strategy which will be used by the council to make and shape decisions such as making new playgrounds and other outdoor facilities, while enhancing the natural and built heritage of Galway City.

5 Responsible Authority for Action Planning

5.1 Name and contact details

Galway City Council is the Action Planning Authority responsible for the preparation of this Noise Action Plan, which applies to major roads identified within Galway City. Any queries in relation to this report can be forwarded to:

Mr. Patrick Greene
Director of Services Operational Development
Galway City Council
City Hall
College Road
Galway
H91 X4K8
Tel: 0035391 536400
Email: roads@galwaycity.ie

5.2 Description of other bodies of relevance

The Environmental Protection Agency (EPA) is the designated national authority responsible for the implementation of the Regulations. The EPA is required to provide advice and guidance to the relevant noise mapping bodies and action planning authorities and is responsible for reporting information to the European Commission. Further details can be found at https://www/epa.ie/our-services/monitoringassessments/noise/noise-mapping-and-action-plans/

TII is the designated mapping body for national roads identified as major roads. Galway City Council is the designated mapping body for non-national major roads in Galway City. However, Galway City Council participated in a centralised process to commission TII to prepare strategic noise maps (Round 4 Mapping) of major non-national roads in Galway City. Noise maps for major national roads can be accessed at https://www.tii.ie/technicalservices/environment/noise-maps/

TII is responsible for the operation, maintenance and improvement of national primary and secondary roads in the state including the N6, N59, N83 and N84 national roads that lie within the functional area of Galway City Council. The Transport Department of Galway City Council is responsible for the maintenance and upkeep of the road network in Galway City. Non-national roads are funded through the Department of Transport, Tourism and Sport and from the Council's own resources.

Galway County Council is the adjacent Action Planning Authority of relevance. The N6, N59, N83 and N84 national routes and R336, R338, R339 and R446 regional routes each lie within the functional area of both local authorities.

5.3 Description of associated working groups/steering groups

The Galway City Council, Operational Development Directorate prepared the Galway City Noise Action Plan 2024-2028.

5.4 Review of previous noise action plan

The table below lists the works programme from the ‘Galway City Council Noise Action Plan 2019-2023. The comment column indicated whether the action has been completed or not. The COVID-19 pandemic and subsequent lockdowns during the term of the plan has adversely impacted on the ability of Galway City Council to complete some work items.

Table 7 Review of Galway City Noise Action Plan 2019 – 2023				
Year	**Item**	**Description**	**Action Date**	**Comment**
2019	1	Application of the matrix assessment method to identify specific areas from noise maps for which further assessment may be warranted	On-going	On-going
	2	Implementation of the proposals set out in the Galway Transport Strategy and the Galway City Centre Transport Management Plan	On-going	On-going
	3	Kirwan Roundabout Upgrade to Signalised Junction	On-going	Oral hearing held by ABP &CPO confirmed by ABP
	4	Salmon Weir Pedestrian & Cycle Bridge	On-going	Design on-going
2020	1	Application of the matrix assessment method to identify specific areas from noise maps for which further assessment may be warranted	2019	Completed 2020. Areas identified for future monitoring
	2	Initiate monitoring in specific areas if required to determine existing noise levels in dB(A)	2020	Not possible to progress due to level of COVD-19 restrictions in place
	3	Identify appropriate mitigation measures for specific locations for which corrective measures are required	2020	Not completed
	4	N6 Galway City Ring Road	On-going	Oral hearing completed and awaiting decision from ABP
	5	Kirwan Roundabout Upgrade to Signalised Junction	On-going	Advance works completed

	6	Salmon Weir Pedestrian & Cycle Bridge	On-going	Application for consent submitted to ABP
	7	Bus Connects Galway Projects	On-going	Non-statutory public consultation commenced in October 2020
	8	Martin Roundabout Upgrade to Signalised Junction	On-going	Detailed design on-going
2021	1	Commence implementation of the relevant actions outlined in Section 7 of the Galway City Noise Action Plan	On-going	Noise mitigation considered
	2	Headford Road Local Area Plan	On-going	Policy 10.2 of the Galway City Council Development Plan 2017-2023
	3	Mitigation in the planning process	On-going	On-going
	4	Collection and monitoring of traffic flow data to determine roads with an excess of three million vehicles per annum	2021	Not complete due to COVID-19 restrictions & associated reduced traffic volumes
	5	Noise monitoring	2021	Not complete. Road noise levels not representative due to reduced traffic volumes associated with COVID-19
	6	Implementation of the proposals set out in the Galway Transport Strategy and the Galway City Centre Transport management Plan	On-going	On-going
	7	N6 Galway City Ring Road	On-going	Planning consent obtained from ABP
	8	Kirwan Roundabout Upgrade to Signalised Junction	On-going	Completed Q4 2021
	9	Salmon Weir Pedestrian and Cycle Bridge	On-going	Planning consent obtained from ABP

	10	Bus Connects Cross City Link – University Road	On-going	Report on non-statutory public consultation presented to Council. Design in progress.
	11	Bus Connects – Dublin Road	On-going	Documents issued to NTA for approval to progress the project from Phase 2 to Phase 4
	12	Galway Cycling Strategy	On-going	Non-statutory public consultation on Eglinton Canal, Doughiska Road South, Clybaun Road & Ballyloughan Road completed
	13	Wolfe Tone Bridge Pedestrian Walkway	On-going	Documentation for Part 8 process prepared
	14	Clifden Railway Pedestrian and Cycle Bridge	On-going	Final draft being prepared of the Stage 2 “Feasibility and Concept Design” of the NTA Project Approval Guidelines
	15	Martin Junction Signalisation Upgrade	On-going	Commenced on site
	16	National, Regional and Local Road Resurfacing Projects	2021	Polymer modified stone mastic asphalt utilised as surface course
2022	1	Commence implementation of the relevant actions as outlined in Section 7 of the Galway City Council Noise Action Plan	On-going	On-going
	2	Headford Road Local Area Plan	On-going	Specific objective 10.2b of the Galway City Development Plan 2023-2029
	3	Mitigation in the planning process	On-going	On-going
	4	Collection and monitoring of traffic flow data to determine roads with an excess of 3 million vehicles per annum	2021	Not complete
	5	Noise monitoring	2021	Not complete due to lack of staff in the Environment Department

	6	Implementation of the proposals set out in the Galway Transport Strategy and the Galway City Centre Transport Management Plan	On-going	
		N6 Galway Ring Road	On-going	Challenges to the ABP decision were lodged with the High Court
		Salmon Weir Cycle and Pedestrian Bridge	On-going	Contractor appointed and construction in progress
		Bus Connects – Cross City Link	On-going	Consent application submitted to ABP in Q3 2022
		Bus Connects – Dublin Road	On-going	Options assessment process completed
		Galway Cycling Strategy	On-going	Findings of the non-statutory public consultations presented to Council. Preliminary design of Bóthar Stiofáin & Castlepark Schemes commenced. Contract signed for Doughiska Road South Cycle Network Scheme in Q4 2022
		Wolfe Tone Bridge Pedestrian Walkway	On-going	Part 8 approval obtained. Consulting engineers appointed.
	7	Active Travel Schemes		
		Miller's Lane Permeability Upgrade		In progress
		Ballyloughane Active Travel Scheme		Non-statutory public consultations report presented to Council
		Doughiska South Cycle Network Scheme	On-going	Contractor appointed
		Eglinton Canal Scheme		Design phase
		Clybaun Road (South)		Design phase
	8	Permeability Projects		On-going

	9	School Initiatives		On-going
	10	Martin Junction Signalisation Upgrade		On-going
	11	National, Regional and Local Road Resurfacing Projects	Q4 2022	Polymer modified stone mastic asphalt utilised as surface course
2023	1	Preparation of revised noise action plan and preparation of new (R4) strategic noise maps	2023	On-going
	2	Implementation of the proposals set out in the Galway Transport Strategy and the Galway City Centre Transport Management Plan		On-going
		N6 Galway City Ring Road	On-going	ABP decision quashed. Scheme re-submitted to ABP
		Salmon Weir Cycle and Pedestrian Bridge	2023	Complete
		Bus Connects – Cross City Link	On-going	On-going
		Bus Connects – Dublin Road	On-going	On-going
		Galway Cycling Strategy	On-going	On-going
		Wolfe Tone Bridge Pedestrian Walkway	On-going	Contractor appointed
		Martin Junction Signalisation Upgrade	On-going	Complete
		Doughiska Road South Cycle Network	On-going	Complete
		Eglinton Canal Scheme	On-going	Complete
		Millars Lane Permeability Project	On-going	Complete

		The Crescent Road Enhancement	On-going	Documentation finalised and Part 8 process commenced
		Bóthar Stiofáin Cycle Network	On-going	Documentation and drawings being prepared
		Ballybane Road and Castlepark Road Cycle Network Scheme	On-going	Part 8 process complete
		Parkmore Bus Priority Scheme	On-going	Scheme went to tender for construction in Q3 2023
		Parkmore Internal Bus Re-Routing	On-going	Draft Part 8 documents being prepared
		Multi-Modal Transport Corridor	On-going	Consultants appointed
	2	City Centre 30kmh Speed Limit	On-going	30km/h speed limit came into effect on 28 August 2023
	3	National, Regional and Local Road Resurfacing Projects	On-going	Polymer modified stone mastic asphalt utilised as a surface course

6 Description of the Action Planning Area

6.1 Extent of Action Planning Area

Galway City is located in the west of Ireland and is the fourth largest city in Ireland. It is situated between Lough Corrib to the north and Galway Bay to the south with the River Corrib flowing through the city. It is located on the Wild Atlantic Way and is the gateway to the Connemara region. Galway City is unique in having Gaeltacht status for almost half of its geographical area, which extends to approximately 54.19km^2. The City is approximately 8km in width from its eastern boundary to its western boundary. It is less than 5km from the southern tip of Lough Corrib to the North Atlantic Ocean. This noise action planning area extends over the administrative area of Galway City Council.

The primary noise source to be considered by the Action Planning Authority in Galway City relates to major roads carrying in excess of 3 million vehicles per year, as defined in the Regulations. Major roads include national, regional and local roads within Galway City. National primary roads generally link the main centres of population and to/from ports and airports. These routes can be motorways, dual carriageways and two-way roads. National secondary roads generally link centres of lesser populations and tend to be good quality two-lane roads. Regional roads provide links between national routes and towns and villages that are not located on the busier routes. Local roads are public roads other than national or regional roads.

Within the functional area of Galway City Council, those routes affected and areas that require action planning are:

6.1.1 National Roads

N6	From Browne Roundabout and including Bodkin, Kirwan, Tuam Road Junctions, Ballybane Junction, Briarhill to Coolagh Roundabout
N83	From Tuam Road Junction to Galway City/County Boundary
N59	Thomas Hynes Road: from Browne Roundabout to junction with Upper Newcastle Road
N59	Upper Newcastle Road: from city boundary to junction with Thomas Hynes Road to N6
N84	From Kirwan Junction to city boundary

6.1.2 Regional Roads

R336	From Bearna Road to Tuam Road
R337	From Kingston Road to Fr Griffin Avenue
R338	From Threadneedle Road to Seamus Quirke Road
R338	From Seán Mulvoy Road to Coast Road

R339 From Monivea Road to Forster Street

R446 From the Coolough Roundabout to the Galway City Boundary via the Martin Roundabout

R863 From University Road to Courthouse Square

R864 From D'Arcy Roundabout to junction with N6 at Quincentenary Bridge

R865 From Skerritt Roundabout to junction with N6 at Ballybane

R866 From Eyre Square through Courthouse Square to Bodkin Junction

R921 From Martin Roundabout to junction with R338 (Coast Road)

6.1.3 Local Roads

L1002 From Deane Roundabout on the Bishop O'Donnell Road to the Cappagh
L1010 Road Roundabout
L1011
L1012
L1013

L5048 Lough Atalia Road

L5147 Parkmore Road

6.2 Description of Routes

Descriptions of all factors that are relevant to the noise modelling are detailed below. This includes location, topography, zoning running parallel with the road including sensitive building, the speed limit, average annual daily traffic (AADT), road surfacing, bus routes, etc. Bus routes are only those that service Galway City, national routes are not included. Noise sensitive locations within the 55dB boundary have been taken into account. These are included to ensure that policies or plans affecting transportation noise from within the boundary limits are properly considered. Information below is taken from GIS map view and noise mapping.

6.2.1 National Roads

N6 Browne Roundabout via Quincentennial Bridge, Headford Road and Bóthar na dTreabh

The N6 starts on Seamus Quirke Road to the west of the River Corrib, rises 3m over the Quincentennial Bridge and falls 7.5m down to Bodkin Junction. From Bodkin Junction to Kirwan Junction the road lies north and is level. This area is zoned as: Residential, Enterprise, Light Industry and Commercial, Community, Cultural & Institutional, Recreation & Amenity.

There is one public bus route from the Bodkin Junction to the Kirwan Junction.

The road turns northeast and rises 23m from Kirwan Junction to the Tuam Road junction. This area is mainly recreation and amenity with residential, enterprise, light industry and commercial zoned areas.

From the Tuam Road junction to Ballybane junction (Enterprise, Industry and Related Uses Zoning) the road goes east and rises by 8m, rises another 5.3m to Briarhill (mixture of Residential, Enterprise, Industry and Related Uses, Enterprise, Light Industry and Commercial, Recreation & Amenity Zoning). From Briarhill the road falls southwards 13m to Coolagh Roundabout. This area has zones of Residential, Enterprise, Light Industry and Commercial, Community, Cultural & Institutional (to include a halting site), Recreation & Amenity).

The section of the N6 between Ballybane Junction and Briarhill has porous asphalt surfacing. The speed limit is 60kph from Seamus Quirke Road to Bodkin Junction, 50kph from Bodkin Junction to Kirwan Junction, 80kph from Kirwan Junction to the Tuam Road Junction. The speed limit reduces to 60kph to the Ballybane Junction where it increases to 100kph at the dual carriageway to Briarhill Junction and extends to the Coolough Roundabout.

A traffic count was conducted in 2020 on the section of the N6 from Browne Roundabout and including Bodkin, Kirwan, Tuam Road, Ballybane Junctions, Briarhill to Coolough Roundabout. The AADT for this section is 34,106. TII conducted a traffic count east of the Kirwan Junction in 2020, the AADT for this location was 18,565.

N83 Tuam Road

The N83 starting at the Tuam Road junction falls 9m northwards and then rises 6m to the Galway City Council boundary line. Zoning comprises of Residential, Low-Density Residential, Enterprise, Light Industry and Commercial, Enterprise, Industry and Related Uses and Agriculture along this road. The AADT on the N83 from Tuam Road Junction to the Galway City Boundary is 17,113.

N59 Thomas Hynes Road

Thomas Hynes Road is located in the north of the city. It connects Browne Roundabout to Upper Newcastle Road. It rises by 4.6m from north to south before falling 7.6m as it reaches Browne Roundabout. The area is mainly zoned Residential with small areas of Community, Cultural and Institutional (primary school) and Recreation & Amenity zones. The speed limit is 50kph and the finished road surface is bitumen macadam. The road has two public bus routes, one only in part to Siobhan McKenna Road. The AADT for this section of road is 13,444.

N59 Upper Newcastle Road

Upper Newcastle Road lies in the north of the city on the N59. At the junction with N6 the road rises by 6m and falls by 2m to the junction with Thomas Hynes Road. From here, the road undulates over 1.65km to the city boundary. The area is Residential, Low-Density Residential, Recreational & Amenity, Agriculture and High Amenity, with parts Community,

Cultural and Institutional. University of Galway campus, a primary school, a garden centre, St. Francis' Home and Corrib Village Student Accommodation are located alongside this road. The speed limit is 50kph to the Ballagh Junction where it increases to 60kph to the city boundary. The road has private and public bus routes. The AADT on this N59 is 11,156.

N84 Headford Road

Headford Road lies in the north of the city on the N84. At the junction with the N6 at Kirwan Roundabout the road undulates over 3.4km to the city boundary. The road level ranges from 4mOD at Kirwan Roundabout to 21m OD at Ballinfoile. The area is part Residential, part Community, Cultural and Institutional and part rural. The speed limit is 50kph to the junction with Bóthar an Chóiste, where it increases to 60kph for 700m and then increases to 80kph to the city boundary. The AADT of the N84 is 14,512. The road has a private and public bus route.

6.2.2 Regional Roads

R336 Bearna Road, Knocknacarra, Salthill Road Upper, Promenade, Dr. Colohan Road, Whitestrand Road, Fr. Griffin Road, Merchants Road, Eyre Square East, Prospect Hill, Bohermore, Tuam Road

The R336 spans Galway City from the city boundary on the Bearna Road at the southwest of the city, taking in Bearna Road, Knocknacarra, Salthill Road Upper, Promenade, Dr. Colohan Road, Whitestrand Road, Fr. Griffin Road, Merchants Road, Eyre Square East, Prospect Hill, Bohermore and Tuam Road.

The levels of the road ranges from 20mOD at the western city boundary, falling to 2mOD along the Promenade, to 28mOD at the Tuam Road Junction. The land use on the western section from Bearna Road to Fr. Griffin Road is a mixture of residential and recreation & amenity. The land use from Merchants Road to Prospect Hill is primarily zoned Commercial, and the land use on Bohermore to Tuam Road is a mixture of Residential, Community, Cultural and Institutional (schools), Enterprise, Light Industry and Commercial.

There is a speed limit of 50kph from the city boundary on the Bearna Road to Fr. Griffin Road where it reduces to 30kph at Merchants Road, Eyre Square East, Prospect Hill, Bohermore and increases to 50kph at Tuam Road.

The AADT of the R336 from Bearna Road to Tuam Road is 17,695. The Bearna Road from the city boundary to its junction with Knocknacarra Cross has a stone mastic asphalt surface. The remainder of the road surfacing for the R336 is asphalt. (Clause 942 for the Tuam Road section).

R337 Kingston Road, Taylors Hill Road, The Crescent

The R337 starts at Knocknacarra Cross. From here the road rises 28m to the junction with the R338. The road falls 26m to the junction with the R864. From here the road fall 2m to its finish at the junction with the R336. The area is mainly zoned Residential but there are areas of Recreation & Amenity and Community, Cultural & Institutional. The AADT of the R337 from Knocknacarra Cross to Fr. Griffin Avenue is 10,596.

The surfacing of the road is mainly asphalt with Clause 904 used on The Crescent. The Kingston Road has a stone mastic asphalt surface. The speed limit is 50kph. There are three public bus routes that use sections of the R337.

R338 Bishop O'Donnell Road, Seamus Quirke Road

The western section of the R338 starts at Blackrock and rises 31m to the junction with the R337. From here the road falls 4m to Deane Roundabout. From Deane Roundabout, the road falls 17m to the Westside library, rises 2m to the fuel station and falls 4m to Browne Roundabout where it connects to the N6.

In 2012, the upgrade of the road from Deane Roundabout to Browne Roundabout was completed to make the road a dual carriageway with a traffic lane and bus lane in each direction. The area is primarily zoned Residential but there are small areas of Recreation & Amenity, Enterprise, Light Industry & Commercial, Industrial & enterprise, industry & related uses and Community, Cultural & Institutional.

The AADT from Threadneedle Road to Seamus Quirke Road is 22,185. The speed limit is 50kph and the surfacing of the road is mainly asphalt. This road has one public bus route and in parts two private bus routes.

R338 Sean Mulvoy Road, Moneenageisha Road, Dublin Road, Coast Road

The eastern section of the R338 starting at the Bodkin Junction rises 7.2m to Joyce Roundabout. The area has Recreation & Amenity and Enterprise, Light Industry and Commercial zoning. There is a small area of Residential to the north of the R338. From Joyce Roundabout to Moneenageisha the road falls by 9.6m where it then rises up 19m where it then undulates to the Skerrit Roundabout. From here the road falls 2.5m to the junction with R921. From here the road rises 5m and then falls 8m to the city boundary. The zoning along this road comprises of Residential, Community, Cultural & Institutional (Healthcare facilities, Atlantic Technological University, primary schools, sports grounds), Recreation & Amenity and Enterprise, Light Industry & Commercial.

The AADT of the R338 from Sean Mulvoy Road to the Coast Road is 20,044. There is a westbound bus lane on the route between the Coast Road and Moneenageisha. The R338 has a mainly asphalt surface. The speed limit is 50kph to the Galway Crystal junction, where it increases to 80kph to the Coast Road junction. The speed limit on the Coast Road is 60kph. Three public bus routes run from Joyce Roundabout through Moneenageisha and diverts in various directions out past Skerritt Roundabout. One bus route services Renmore, another Ballybane and the last services Merlin Hospital.

R339 Monivea Road, College Road, Forster Street

The R339 starting at the Briarhill Junction falls 8m to the junction with the R865 at Ballybane junction. From here it falls 33m to the junction with the R338 at Moneenageisha. This section is known as the Monivea Road. The land use along this section of road comprises of Residential, Community, Cultural & Institutional (Atlantic Technological University, schools, sports ground), Recreation & Amenity and Enterprise, Light Industry & Commercial.

The next section, known as College Road rises 13m and then falls 5m to the junction with Forster Street. The land use along this section of road comprises of Residential, Community, Cultural & Institutional (schools, sports grounds, City Hall), Recreation & Amenity. Forster Street is a flat section of road and finishes at Eyre Square with a junction with the R336. The Forster Street Section of the R339 is one-way to Eyre Square and has a peak hours bus lane. The land use along this section of road is primarily zoned as City Centre (to include commercial).

The AADT from Monivea Road to Forster Street is 15,556. The speed limit is 50kph on the Monivea Road and 30kph on College Road and Forster Street. The road surface is Clause 942 on Monivea Road and ralumac on College Road. A number of bus routes operate on this route.

R446 Coolagh Roundabout to City Boundary

From Coolagh Roundabout the road rises southwards by 5.5m and then falls eastwards 14.5m to the Galway City boundary line. The zoning is a mixture of Residential, Agricultural, Recreation & Amenity and Community, Cultural & Institutional along this route, The road has an AADT of 16,532 and has asphalt surfacing.

R863 University Road to Courthouse Square

The R863 starting at the University Hospital Galway falls 2m to the Salmon Weir Bridge. This area has mixed usage of Residential, Community, Cultural & Institutional (University of Galway, Church and Hospital), and Recreational & Amenity areas. This route has three private and three public bus routes from the hospital to the Court House.

The road has an AADT of 13,034 and has asphalt surfacing. The speed limit on this road is 30kph.

R864 Newcastle Road, St. Mary's Road, Salthill Road

The R864 starting at the N6 at the Quincentenary Bridge junction undulates between 10mOD to 3m OD at the junction with the R336 at D'Arcy Roundabout, Salthill. The R864 has junctions with the R863 at University Hospital Galway and the R337 at Taylors Hill Road. This area has mixed usage of Residential, Community, Cultural & Institutional (university, schools and hospital), Recreation & Amenity, and Enterprise, Light Industry & Commercial.

The AADT of this road from D'Arcy Roundabout to the junction with N6 Quincentenary Bridge is 12,276. The speed limit is 50kph. The road has asphalt surfacing except for Salthill Road Lower which has a stone mastic surface from its junction with Lenaboy Park to 25m west of its junction with Whitestrand Avenue. St. Mary's Road has a stone mastic surface for c.300m.

R865 Ballybane Road

The R865 starting at the Ballybane junction falls 14m to Skerritt Roundabout. This area has mixed usage of Residential, Recreation & Amenity, Community, Cultural and Institutional

(Atlantic Technological University), with a localised area of Enterprise, Light Industry and Commercial.

The road has an AADT of 15,584 and has asphalt surfacing. The speed limit is 50kph.

R866 Headford Road; Courthouse Square to Bodkin Junction

The road falls from the Courthouse to Bodkin Junction by 4.7m. The road has a mix of Enterprise, Light Industry and Commercial, Community, Cultural & Institutional, Residential and a local area of Recreation and Amenity aligning it.

The AADT from Eyre Square through Courthouse Square to Bodkin Junction is 11,250. The road surfacing is mainly asphalt except for St. Vincent's Avenue which has a bituminous surface. The speed limit is 30kph and there is one bus route to Bodkin Junction.

R921 Dublin Road; Martin Junction to Coast Road

The R921 starting at Martin Junction falls 16m to the junction with the R338 Coast Road. The land use bordering the road is predominantly Residential and Recreational and Amenity with a localised area of Low Density Residential.

The road has an AADT of 14,856. The speed limit along this section is 80kph. There is a westbound bus lane between the Doughiska Road Junction and the R338 Coast Road Junction.

6.2.3 Local Roads

L1002, L1010, L1011, L1012, L1013: Western Distributor Road

The Western Distributor Road commences at the Junction with the Bishop O'Donnell Road (R338) and terminates at the Cappagh Road Roundabout. The level of the road ranges from 29.3mOD at Deane Roundabout on the Bishop O'Donnell Road and falls 24.4mOD at the Cappagh Road Roundabout. The road is split into 5 main sections which have a combined length of 2.9km.

The combined AADT of each section totals 11,305. The zoning along this road comprises of Residential, Enterprise, Light Industry & Commercial, Recreational & Amenity and a localised area of Agriculture at the Cappagh Road end. The road surfacing is stone mastic asphalt. The speed limit is 50kph and this road has one public bus route.

L5048 Lough Atalia Road

The Lough Atalia Road commences at the junction between Bóthar na Long and the Dock Road and continues northeast for a length of 1.4km to the junction with College Road (R339). The level of this road ranges from 5.2mOD at the junction with Bóthar na Long and falls to 3.4mOD at the junction with the College Road. The zoning along this road comprises of Residential, City Centre, with localised Community, Cultural & Institutional and Recreational & Amenity.

The AADT for this road is 12,584. The road surface is asphalt and the speed is 50kph. There is one public bus route.

L5147 Parkmore Road

The Parkmore Road commences at the junction with the Monivea Road (R339) and continues to the north for a distance of 890m to the city boundary. The level of the road ranges from 42.3mOD at the Monivea Road junction and rises to 54.4mOD at the Roundabout adjacent to the Parkmore East Business & Technology Park. The zoning along this road comprises of Enterprise, Industrial and Related Uses, part Residential, Enterprise, Light Industry and Commercial, and localised parts Agriculture.

The AADT for this road is 14,499. The road surfacing is asphalt and the speed limit is 50kph. This road has two public bus routes.

6.3 Description of General Population

The population of Galway City recorded in the 2022 census is 84,414, which is a 5.6% increase from the 79,935 recorded in the 2016 census. In 2022 there were 30,872 residential dwellings in Galway City. There are a variety of housing types including single dwellings and multi-dwelling units located in urban and more rural settings.

6.4 Location of Noise Sensitive Groups

Certain locations and building uses are considered to be more sensitive to environmental noise pollution than others. The priority of the END is to manage environmental noise where it is high and to preserve environmental noise quality where it is within an acceptable limit. Noise sensitive buildings in Galway City include dwellings, healthcare settings, educational facilities, childcare facilities, places of worship/ burial grounds and other areas of high amenity which require an absence of noise at nuisance level for their enjoyment.

The table below presents the locations of noise sensitive groups in Galway City which have been mapped:

Table 8 Noise Sensitive Areas

Noise Sensitive Building	Location	Type of Service
Galway Educate Together National School	Upper Newcastle/Thomas Hynes Road	Educational
GRETB VTOS Galway City	Tuam Road (Joyce Roundabout)	Educational
Galway Technical Institute	Fr. Griffin Road (part of)	Educational
Scoil Fhursa	Taylor's Hill	Educational
University Hospital Galway	Link road (Seamus Quirke Road) at Browne Roundabout	Hospital
Rosedale School	Dublin Road	Educational
Lakeview School	Dublin Road	Educational
Bon Secours Hospital	Dublin Road	Hospital

Galway Hospice	Dublin Road	Healthcare
Atlantic Technological University (formerly GMIT)	Dublin Road	Educational
Merlin Park University Hospital	Dublin Road	Hospital
Atlantic Technological University (formerly GMIT)	Monivea Road	Educational
GRETB VTOS Galway City	Dublin Road (East of Skerritt Roundabout)	Educational
Galway Community College	Wellpark Road	Educational
Galway Clinic	Northwest & east of Martin Junction	Hospital
University of Galway	University Road	Educational
University Hospital Galway	Newcastle Road	Hospital
University of Galway	Newcastle Road	Educational
University of Galway	Lower Newcastle Road	Educational
Scoil Fhursa	St. Mary's Road	Educational
Coláiste Muire Máthair	St. Mary's Road	Educational
St. Mary's Nursing Home	St. Mary's Road	Healthcare
Atlantic Technological University (formerly GMIT)	Ballybane Road	Educational
Scoil Náisiúnta Róis	Taylors Hill	Educational
Rushmore Nursing Home	Kingston Road	Healthcare
Yeats College	College Road	Educational
Places of worship	Various locations in Galway City	

6.5 Description of the main Infrastructure/Services

The main transport infrastructure in Galway City consists of the:

- Road network
- Rail network
- Port network

The road network in Galway City Council's administrative area consists of national, regional and local roads that are single and dual carriageway types. The total road network is approximately 310.53km in length, with 14.66km of national primary roads, 9.47km of national secondary roads and 286.4km of regional and local roads.

The road network is served by a number of bus routes, including city services, intercity and regional services.

Railway services operate from Ceannt Station offering intercity services including the Galway to Dublin service via Dublin Heuston and Galway to Limerick service. The latter service also provides connections with Cork and Tralee.

The Port of Galway is located in the eastern corner of Galway Bay. Galway Port has quay length capable of allowing up to 6 vessels in the inner dock at any one time, depending on vessel size. The port regularly welcomes vessels of 6,000 tonnes deadweight.

7 Existing Noise Management Framework

7.1 Roads

The following noise reduction measure are currently in place in Galway City:

7.1.1 Road Surfacing

Table 9 Existing Noise Reduction Measures

Route	Measures in Place
N6	The pre-dominant surface on the N6 is stone mastic asphalt surface as a noise reduction measure. Noise barriers in the form of concrete walls are in place along the route to reduce noise impact from the roadway on adjacent residences/hotels.
N59	Sections of the route have stone mastic asphalt surface as a noise reduction measure. High boundary walls along certain sections of the roadway act as noise reduction measures.
R336	The Bearna Road from the city boundary to Kingston Road has a stone mastic asphalt surface as a noise reduction measure. Merchants Road, Eyre Square East, Prospect Hill and Bohermore have a speed limit of 30km/h as a noise reduction measure.
R337	The Kingston Road has a stone mastic asphalt surface as a noise reduction measure.
R339	The section of the route encompassing College Road and Forster Street has a 30km/h speed limit as a noise reduction measure.
R446	High concrete block walls are in place along the section adjacent to the Martin Junction, where the rear gardens of residential properties are bounded by the roadway and act as a noise reduction measure.
R863	University Road has a speed limit of 30km/h as a noise reduction measure.
R864	Salthill Road Lower from its junction with Lenaboy Park to a point 25m west of its junction with Whitestrand Avenue has stone mastic asphalt surfacing as a noise reduction measure. St. Mary's Road has a stone mastic asphalt surface for c.300m in the vicinity of Coláiste Muire Máthair.

R866	This regional route from Courthouse Square to the Bodkin Junction has a speed limit of 30km/h as a noise reduction measure.

7.1.2 Speed Limits

The prevailing speed limit in Galway City Centre is 30km/h, as illustrated on the location map below. Slower traffic speeds will have a positive impact on noise pollution and on health effects.

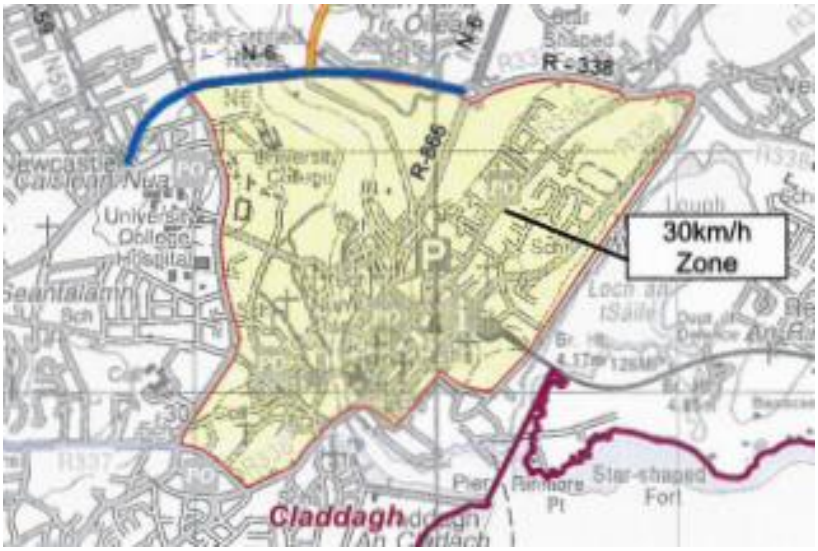


Figure 2 Galway City Special Speed Limit Area

Galway City Council implemented 30km/h slow zones in housing estates in its administrative area. These bye-laws came into operation on 1 November 2017.

7.1.3 Traffic Calming

Traffic calming programmes have been installed and are operating in a number of areas in the city. The objective of these measures is to reduce traffic speeds to render areas safer for pedestrians, cyclists and vulnerable road users. Reductions in speed can also potentially reduce road noise levels.

7.1.4 Sustainable Travel

There has been a significant investment in walking, cycling and public transport infrastructure in the city area. One of the key objectives of the Galway Transport Strategy is to promote and encourage sustainable transport, manage traffic in a way that maximises mobility and safe movement and to maintain and develop infrastructure. The migration to more sustainable travel has potential to deliver a reduction in noise levels from road traffic.

7.1.5 Safe Routes to School

The Safe Routes to School is an initiative of the Department of Transport and supported by the Department of Education. It is operated by the Green Schools Programme in partnership with the National Transport Authority and the local authorities. The scheme aims to encourage as many students as possible in both primary and post-primary schools to walk

and cycle to school by improving safety at the school gate, access routes to school and expanding the amount of available cycle parking.

Galway City Council is engaging with school communities in the city to develop a 'front of school' design to make it safer for children to walk, cycle and scoot to school.

7.1.6 Bike Rental Scheme

Transport for Ireland (TFI) Bikes is a bike rental scheme available in Galway City to commuters and visitors. There are 195 bikes at 23 stations around the city at various locations including bike stations at the bus and railway stations and in Eyre Square. Further information on the scheme is available at the following link: http://www.bikeshare.ie/galway

7.2 Railways

Ireland has a network of rail lines over which a significant number of public transport rail services are provided. The rail network supports the economic and social development of the state in providing accessible transport to many destinations. The network consists of approximately 2,400km of railway track and includes 147 stations. Iarnród Éireann operate passenger and freight services in Ireland. Intercity rail services operate between Galway and Dublin and regional services operate between Galway and Limerick.

Iarnród Éireann prepare strategic noise maps along specific sections of the rail network i.e. within the agglomerations of Dublin, Cork and Limerick and/or where the operational rail traffic exceeds 30,000 vehicle passages per annum. The strategic noise maps can be accessed at the following link:

https://www.irishrail.ie/en-ie/About-Us/Iarnrod-Eireann-Infrastructure/strategic-noise-maps

The population of Galway City and suburbs in the 2022 census was 85,414 and therefore is not an agglomeration as defined in the Regulations.

7.3 Licenced Industrial Facilities

The EPA has responsibility for granting and enforcing Integrated Pollution Control (IPC) licences for specified industrial and agricultural activities.

There are a number of licensed industrial facilities within the administrative areas of Galway City Council. The EPA has responsibility for granting and enforcing these licences, which include among other conditions includes noise management conditions.

The IPC licences granted in the Galway City area can be accessed at the following link:

https://epawebapp.epa.ie/terminalfour/ippc/index.jsp

7.4 Airports

Galway Airport is located east of Galway City at Carnmore in County Galway. It is currently closed to commercial traffic.

8 Summary of the Results of Noise Mapping

8.1 Overview of the preparation of the noise map

8.1.1 Purpose and Scope

A strategic noise map is a graphical representation of the predicted noise level in a given area and from a particular noise source. A noise map has different colour-coded bands, which represent the predicted decibels (dB(A)) within a certain range.

The purpose of undertaking strategic noise mapping is to determine exposure to environmental noise, with an aim to prevent and reduce environmental noise where necessary. The noise maps use harmonised noise indicators L_{den} (day-evening-night equivalent level) and L_{night} (night equivalent level). These are based on day (07:00-19:00), evening (19:00-23:00) and night (23:00-07:00) time periods. The indicators are weighted to account for the fact that the same noise level may be more annoying at different times of the day. The noise maps are to be used to assess the number of people annoyed and sleep-disturbed respectively throughout each member state in the European Union.

8.1.2 Roles and Responsibilities

The Environmental Protection Agency (EPA) is designated at the National Authority for the purpose of the Regulations.

The EPA is required to provide advice and guidance to the relevant noise mapping bodies and action planning authorities.

The EPA is responsible for reporting to the European Commission the information relating to strategic noise mapping and action planning in accordance with Article 10(2) of the Directive.

The European Communities (Environmental Noise) Regulations 2018, S.I. No. 549/2018 identify the noise-mapping bodies responsible for agglomerations, railways, roads and airports. The following organisations have been designated as noise-mapping bodies:

Table 10 Noise Mapping Bodies

Area	Noise Mapping Body
• Agglomeration of Cork	Cork City Council and Cork County Council
• Agglomeration of Dublin	Dublin City Council, Fingal County Council, Dún Laoghaire-Rathdown County Council, South Dublin County Council, Kildare County Council, Wicklow County Council
• Agglomeration of Limerick	Limerick City & County Council & Clare County Council

• Major Railways	Iarnród Éireann or Transport Infrastructure Ireland, as appropriate, on behalf of the action planning authority concerned
• Major Roads	Transport Infrastructure Ireland is the designated noise-mapping body on behalf of the action planning authority concerned where such roads are classified as national roads in accordance with Section 10 of the Roads Act, 1993. For other major roads, not in the above category, the relevant road authority.
• Airports	The relevant airport authority, on behalf of the action planning authority concerned.

Regulation 2 defines a major road as a 'public road as defined in the Roads Act 1993, as amended, which has more than 3 million vehicle passages per year'. Thus, a designated 'major road' could be any section of a National, Regional or Local Road.

Strategic noise mapping was undertaken in 2022 by the designated noise mapping bodies.

8.1.3 Changes Since R3 Noise Mapping

The table below illustrates the number of licenced vehicles in Galway City and County:

Table 11 Licensed Vehicles Statistics

Year	Galway City and County		Nationally			
	Private Cars	**Goods Vehicles**	**Private Cars**	**Goods Vehicle**	**Electric Vehicles**	**Total Vehicles**
2016	109,271	20,756	2,026,977	342,259	1,825	2,624,958
2017	111,267	20,567	2,066,112	349,143	2,913	2,675,879
2018	113,608	20,346	2,106,369	355,273	4,825	2,717,722
2019	117,618	20,840	2,174,779	366,760	9,120	2,805,839
2020	120,142	21,208	2,215,127	377,890	13,694	2,860,984
2021	121,368	21,450	2,232,174	385,099	23,333	2,890,975
2022	123,336	21,449	2,255,971	389,184	39,280	2,919,005

Data extracted from the Department of Transport Irish Bulletin of Vehicle and Driver Statistics

The data illustrates a 12.8% increase in the number of private vehicles in Galway City and County from 2016 to 2022.

The following table illustrates the volume of traffic on the N6 Bóthar na dTreabh.

Table 12 Traffic Flows on N6

Year	ADT	% HGV
2019	24,673	2.5
2020	18,565	3.0
2021	19,422	3.0
2022	21,451	2.8
2023	22,108	2.6

The data illustrates a year-on-year increase in ADT from 2020 to 2023, however, there is a 0.2% decrease in the %HGV from 2021 to 2022 and from 2022 to 2023.

Nationally the number of electric vehicles has increased by 1,248%. It is reasonable to assume that there was an increase in the number of electric vehicles registered in Galway City. Increased use of electric vehicles can potentially reduce road noise levels.

There were no significant infrastructure developments since R3 noise mapping. Similarly, there are no changes to the road/rail segments in the major category.

8.1.4 Data Sources

Traffic counts were undertaken in 2021 to identify the major roads in Galway City which require strategic noise mapping. As per the Regulations, roads with a traffic flow greater than or equal to 3 million vehicle passage per annum or 8,219 vehicles in an average 24-hour period are major roads. The data captured included the following:

Table13 Road Data Capture

• EU Road ID	• Annual Traffic Flow	• Road Surface
• Road ID	• Road Classification	• Age of Surface Material
• Road Name	• Vehicle Class	• Junction Type & Name
• Start/end points	• Traffic Speed	• Junction Distance
• Length	• Direction of Travel	

Transport Infrastructure Ireland (TII) captured the data for the national primary and secondary routes in Galway City and are the designated noise mapping body for national roads in the administrative areas of Galway City Council.

8.1.5 Methodology

For R4 Noise Mapping Annex II of the END has been revised by the mandatory EU Directive 2015/996[4], which describes the common noise assessment methods for Europe, commonly known as 'CNOSSOS-EU'. The use of CNOSSOS-EU was transposed into Irish Law by S.I. No. 549/2018 the Environmental Noise (Amendment) Regulations 2018. The Regulations were amended further by S.I. No. 663/2021 European Communities (Environmental Noise) Amendment Regulations 2021 which set out the alterations to the agglomeration boundaries. The Amendment also gave effect to a one-year extension granted by the EU for the completion of the Round 4 Noise Action Plans from 2023 to 2024.

The CNOSSOS-EU road traffic noise emission model calculates rolling and propulsion noise for different vehicle categories as a function of speed and frequency. The emission is calculated for reference conditions and then corrected for different solutions. The definition of the reference conditions includes air temperature, constant speed, flat road and a reference to road surface.

Road surface is defined as a 'virtual reference road surface, consisting of an average of dense asphalt concrete 0/11 and stone mastic asphalt 0/11, between 2 and 7 years old and in a representative maintenance'. Road surfaces not within this definition should have road correction factors developed.

The default road surface corrections are taken from the Dutch national noise assessment method Rmg2012, thus, only accounts for road surfaces that are common to the Netherlands.

TII procured consultants to develop road surface corrections for the following pavement types on the TII network:

- Hot rolled asphalt
- Stone mastic asphalt 10mm
- Stone mastic asphalt 14mm

In the interim, the Dutch and Irish road surfaces were combined from which the value of the surface attribute should be selected. The EPA Guidance for R4 Noise Mapping recommends that one of the Irish road surfaces, which best matches the section of road in question, be selected. If this is not possible, a Dutch surface should be selected.

The CNOSSOS-EU methodology has been used to produce the strategic noise maps and to calculate the noise exposure statistics and harmful effects of road traffic noise.

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

- metres grid format – where the model outputs a result every 10 metres 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 received points digitised at the facades of residential, school and hospital buildings. These results are used to calculate the population exposure statistics and harmful effects.

The results of the strategic noise mapping include noise levels calculated around the facades of noise sensitive buildings and an estimate of the number of people in dwellings within each residential building derived from Census population statistics and GeoDirectory.

8.2 Presentation of Results

8.2.1 Strategic Noise Maps

The Round 4 strategic noise maps were developed from the Common Noise Assessment Methods for Europe (CNOSSOS-EU).

The results of the noise modelling are displayed on a noise map for each route identified in Chapter 6, which illustrate the noise levels experienced at each geographical area.

The noise bands mapped include the following decibel ranges: 55-59, 60-64, 65-69, 70-74 and >75. The colour of each of these noise exposure bands is indicated in the legend with darker colours representative of higher noise levels as illustrated below:

Table 14 Recommended Colour Bands for Presentation of Noise Contour Results

dB Band	Sample	Colour
30 – 34		dark blue-green
35 – 39		blue-green
40 – 44		light blue-green
45 – 49		light green
50 – 54		yellowish green
55 – 59		light orange
60 – 64		orange
65 – 69		dark orange
70 – 74		magenta
75 – 79		purple
80 - 99		dark purple

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

Strategic Noise Map – L_{den} – Road Traffic

Strategic Noise Map – L_{night} – Road Traffic

The strategic noise maps are illustrated in Appendix C.

Interactive versions of the Round 4 Strategic Noise Maps may be found at:

EPA Maps: https://gis.epa.ie/EPAMaps/

TII Noise Maps: https://www.tii.ie/technical-services/environment/noise-maps/

8.2.2 Noise Exposure Assessment

The Regulations do not define Galway City as an agglomeration and therefore, the noise maps generated are for road traffic noise on major roads within the administrative area of Galway City Council.

Table 15 Number of Population Exposed to Level Above WHO ENG 2018 Guideline Level

Noise Exposure	Number of People in Dwellings Exposed
53 dB L_{den}	35,900
45 dB L_{night}	31,100

The Round 4 Noise statistical exposure and harmful effects assessment for the Galway City Council administrative area are presented below.

Table 16 Total Number of School Buildings (& Hospital Buildings) Exposed to Level Above WHO ENG 2018 Guideline Level

Noise Exposure	Number of School Buildings (& Hospital Buildings)
53 dB L_{den}	17 (9)
45 dB L_{night}	20 (8)

8.2.3 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 high annoyance (HA), high sleep disturbance (HSD) and ischemic heart disease (IHD).

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

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

- The calculation for harmful effects should be undertaken in 1dB assessment bands
- The assessment of harmful effects was undertaken for values above the WHO ENG 2018 Guideline Level:
- Road traffic noise: 53dB 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 been calculated from population statistics in 1 dB bands for the road traffic noise level threshold set out above using the calculation methodology specified in the Regulations.

This data was used to determine the Important Areas (IAs) which are areas experiencing noise levels in excess of the above thresholds. The population exposed and the harmful effects at that noise sensitive location was assessed. This data was then used to determine the Most Important Areas (MIAs) which are a sub-set of the Important Areas where the health effects are highest through a product of the noise exposure levels and the number of people exposed to environmental noise.

9 Identification of areas to be subjected to noise management activities

9.1 Description of approach to identify IAs, MIAs and PIAs

The Regulations require that APAs 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 Note for Noise Action Planning recommends a three-step approach to identifying priorities:

1. Important Areas (IAs) - these are locations exposed to environmental noise which may be harmful to human health, such as high annoyance, as indicated by WHO guidance;
2. Most Important Areas (MIAs) - these locations are a subset of IAs where the health effects are highest, and are determined through a combination of noise exposure levels and the number of people exposed to environmental noise;
3. Priority Important Areas (PIAs) - between 5-10 MIAs, or groups of similarly affected Most Important Areas, identified by the APAs as those which will be evaluated and addressed during the implementation of the Noise Action Plan.

The above approach was used for Galway City with respect to noise from roads.

The WHO Environmental Noise Guidelines for the European Region 2018 provide guidelines to protect human health from environmental noise including noise from road traffic. The EPA Guidance references the WHO guidelines in setting guideline noise levels for identifying Important Areas, these values are summarized in the table below:

Table 17 Summary of WHO Guideline Values

Level of effect	Source	Level	WHO Guidelines
No effect on sleep is observed	Any	Below 30 dB $L_{night,\ inside}$	NNG 2009
	Any	40 dB $L_{night,outside}$	NNG 2009
	Aircraft	45 dB $L_{den,\ outside}$ 40 dB $L_{night,outside}$	ENG 2018
	Railways	54 dB $L_{den,\ outside}$ 44 dB $L_{night,outside}$	ENG 2018
	Roads	53 dB $L_{den,\ outside}$ 45 dB $L_{night,outside}$	ENG 2018

9.2 Important Areas

The process of identifying IAs in Galway City involves using the results of the strategic noise mapping to identify the noise sensitive residential buildings and the estimated number of people exposed to L_{den} levels above the guideline levels set out in the EPA Guidance.

An automated process within Geographic Information Systems (GIS) software identifies the areas with the highest concentration of people highly annoyed, referred to as MIAs.

Therefore, the approach to identifying MIAs is a statistical exercise and pertains to the entire population encompassed by the noise map. The MIAs should not be construed as a precise assessment of harmful effects for specific buildings, nor are the extents of the MIAs definitive. Rather the MIAs are indicative for the identification of areas with a relatively high number of people annoyed due to road noise. In consultation with the NMB, the APA prioritises the MIAs to identify those which are to be addressed during the implementation of the Noise Action Plan. These areas are referred to as Priority Important Areas.

9.3 Most Important Areas

The results of the Important Areas (IAs) have been used to identify the Most Important Areas (MIAs). The method of identifying the MIAs is set out in the EPA Guidance and is a computerised process within GIS software which uses the results of the strategic noise maps assigned to population statistics in areas with exposure values greater than the IA noise 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 assessment area. Following the method in Annex II of the END, the harmful effects due to environmental noise are statistically assessed and are used to generate a gridded 'heatmap' of values which approximately represents the number of people highly annoyed per $100m^2$, which is in line with the EPA Guidance.

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

It should be noted that the approach to identifying Most Important Areas is a statistical exercise and it should not be taken as a precise assessment of harmful effects for specific buildings.

A summary of the Most Important Areas identified within Galway City using the EPA Guidance density criteria of 15, 10 and 7.5 people per $100m^2$ is given in Table 20. Using the criterion of 15 people per $100m^2$, which the EPA Guidance deems the most appropriate for urban areas, 44 MIA were identified. Definitions of the abbreviations contained in Table 18 are listed in Appendix A.

Table 18 Galway City Most Important Areas Summary

APA	HA Threshold	No. of MIA		Total Population	Harmful Effects Statistics		
		Road	Rail		HA	HSD	IHD
Galway City Council	15	44	0	6,558	1,587	495	2
Galway City Council	10	62	0	14,102	2,940	898	3
Galway City Council	7.5	64	0	21,067	3,944	1,188	4

9.4 Priority Important Areas

As illustrated above, the number of Most Important Areas in Galway City is 44 for a population density of 15 persons per 100m^2. Given this number, a process has been undertaken to identify which of these areas 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. This assessment was based upon those MIAs or groups of MIAs with the highest concentration of people statistically expected to be harmfully affected by environmental road noise.

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

The EPA Guidance recommends consideration be given to the following aspects for each MIA for the selection of PIAs:

- Number of people exposed to noise, and the health effects
- Level of noise exposure
- Potential for grouping adjacent MIAs into a larger PIA
- The main source of transport noise
- Competent body to carry out any proposed mitigation measures
- History of complaints
- Planned road maintenance and resurfacing programme
- Planned speed or traffic calming measures
- Planned nearby developments
- Existing noise reduction measures
- Proposed noise reduction measures
- Options available for noise reduction measures, if available

To inform the decision-making process for the selection of PIAs, a number of statistical items of information was developed for each Most Important Area, including:

- Noise source identifying the Most Important Area
- 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 for road traffic noise exposure in 5dB bands (L_{den} 55 - > 75dB, L_{night} 50 – 70 dB)

The Priority Important Areas are summarised in Table 21 and are based on the above criteria. Definitions of the abbreviations contained in Table 19 are listed in Appendix A.

Table 19 Indicative List of Priority Important Area (PIA) Summary

PIA	Total Population in PIA	Source	MIA Criterion (people per 100m^2)	Area (m^2)	Number of People			No. of People Above IA Guideline Level	
					HA	HSD	IHD	Road 53dB L_{den}	Road 45dB L_{night}
GYC_1	633.14	Road	15	83800	210.37	71.95	0.25	633.14	633.14
GYC_2	514.91	Road	15	37600	102.09	31.11	0.11	481.07	451.13
GYC_3	471.83	Road	15	65800	156.03	50.66	0.18	465.82	455.35
GYC_4	454.74	Road	15	38300	101.30	31.58	0.12	426.91	410.64
GYC_5	338.57	Road	15	20800	53.66	14.29	0.05	338.57	338.57
GYC_6	306.76	Road	15	28800	63.96	16.75	0.08	292.72	292.72
GYC_7	293.82	Road	15	30800	62.72	18.33	0.07	293.82	293.82
GYC_8	290.46	Road	15	27400	76.49	26.19	0.09	290.46	290.46
GYC_9	216.67	Road	15	18300	53.19	17.65	0.06	216.67	216.67
GYC_10	211.06	Road	15	27500	64.44	20.87	0.07	211.06	208.95

From the 10 Priority Important Areas identified, 6 were selected by Galway City Council for inclusion within the NAP. Galway City Council will undertake an assessment of noise mitigation measures for each PIA within the life cycle of the noise action plan. The selected PIAs is provided in Table 22 below, which is based on locations with high levels of health impact due to both noise exposure levels and population density. Progress on the investigation of these measures will be reported on an annual basis to the EPA for the duration of this Noise Action Plan.

Table 20 List of Approved Priority Important Areas for 2024 -2028

Selected PIA ID (2024-2028)	MIA Ref No.	Location
PIA GYC_1	GYC_MIA_15_HA 223	L1013 Western Distributor Road
PIA GYC_2	GYC_MIA_15_HA 220	R864 Newcastle Road
PIA GYC_3	GYC_MIA_15_HA 222	R336 Bohermore
PIA GYC_4	GYC_MIA_15_HA 221	R336 Bohermore
PIA GYC_5	GYC_MIA_15_HA 214	N6 Bóthar na dTreabh
PIA GYC_6	GYC_MIA_15_HA 218	N6 Bóthar na dTreabh (Briarhill)

The locations of the PIAs are indicated in Appendix E.

9.5 Description of Approach to Identify Quiet Areas

The Fourth Schedule of S.I. No. 549/2018 European Communities (Environmental Noise) Regulations 2018 require Action Planning Authorities to set out measures to maintain quiet areas. Section 4(2) of the Regulations states 'These Regulations shall apply to environmental noise to which people are exposed, in particular in built up areas, in public parks or other quiet areas in an agglomeration, in quiet areas in open country, near schools, near hospitals, and near other noise-sensitive buildings and areas'.

At present there is no universally accepted definition by EU Member States of what constitutes a Quiet Area, however, they are regarded as areas where environmental noise levels are deemed to be low, and protection should be considered.

The procedure for delimiting an area as a 'Quiet Area' is informed by an investigation by the APA to identify candidate quiet areas followed by an investigation to quantify and confirm quiet areas for consideration by the EPA in consultation with the Minister. Successful applications result in a delimitation of the Quiet Area.

At present, there are no Quiet Areas in Galway City, however, quiet areas may be considered and reviewed as part of the implementation of the noise action plan. Any possible designations would go to statutory consultation prior to submission to the Minister for adoption.

10 Mitigation and Protection Measures

10.1 Investigation of PIAs

Priority Important Areas will be investigated over the life cycle of this NAP from 2024-2028. This assessment will include:

- Noise monitoring
- Noise modelling calculations and
- Cost-benefit analysis

10.2 Investigation of Candidate Quiet Areas

Galway City is not an agglomeration (> 100,000 population) as per the Environmental Noise Regulations and thus there is no statutory requirement to identify quiet areas. At present, there are no Quiet Areas identified in Galway City, however, quiet areas may be considered and reviewed as part of the implementation of the noise action plan. Any possible designations would go to statutory consultation prior to submission to the Minister for adoption.

10.3 Noise Impact from Future Developments

Galway County Council, on behalf of itself and on behalf of Galway City Council, is proposing to develop the N6 Galway City Ring Road (N6 GCRR) around Galway City. The decisions of An Bord Pleanála dated 6 December 2021 granting approval for the N6 Galway City Ring Road were quashed, and the applications for approval of the N6 Galway City Ring Road have been remitted to An Bord Pleanála, such remittal taking effect from the point in time immediately after the submission of the Inspector's Report.

The implementation of the proposals set out in the Galway Transport Strategy and the Galway City Centre Transport Management Plan will improve public transport facilities and infrastructure and walking and cycling infrastructure. The modal shift to more sustainable modes of transport has potential to impact positively on road traffic noise levels.

Applications for new residential developments are assessed by the Planning Authority in accordance with the policies and standards of the prevailing Galway City Development Plan including:

Policy no. 9 Air Quality and Noise includes a policy to 'ensure that developments incorporate measures to minimise noise levels in their design and reduce the emission and intrusion of any noise or vibration which might adversely impact on amenities, in particular residential amenities where appropriate.'

Policy no. 9.6 also states that the NAP shall be considered in the assessment and design of relevant development applications in the interests of protecting future amenity.

Section 11.4.1 Land Use Zoning Objectives and Development Standards and Guidelines states that potential noise nuisances shall be addressed at the design stage and appropriate mitigation measures included for in the proposed development.

10.4 Confirmation of Noise Exposure Levels

Galway City Council will, subject to available funding and resources, undertake ambient noise monitoring at each of the 6 Priority Important Areas identified in Section 9.4. This will consist of:

- Ambient noise monitoring
- Review strategic noise modelling

10.4.1 Ambient Noise Monitoring

The number of ambient noise monitoring sites will depend on the size of the PIA and the noise source. The EPA Guidance recommends that monitoring be undertaken in accordance with ISO 1996:2017 Acoustics – Description, measurement and assessment of environmental noise and for a minimum of two weeks at each location. Road traffic counts will be measured at the monitoring sites during the survey period to validate the noise mode. The results of the ambient noise monitoring will be used to verify the results of the strategic noise maps.

Measurement results will be reviewed and any spurious noise events, periods of rain, or excessive wind speeds, removed from average levels. The long-term average L_{day}, $L_{evening}$, L_{night} and L_{den}, measured levels may then be compared with the calculated results.

If the site measurements do not correlate with the results of the strategic noise maps, an investigation will be undertaken into factors such as traffic counts, traffic speed, road surface, etc. The situation on site will then be compared with the assumptions made within the model used to generate the strategic noise maps.

A re-evaluation of the identified Priority Important Area will be undertaken. The Action Planning Authority and Noise Mapping Body will consult and amendments may be made to the model parameters following this re-evaluation prior to re-running the noise model.

10.4.2 Review Strategic Noise Modelling

Following completion of the noise monitoring, Galway City Council will review the noise models for each PIA, based upon information captured through field survey work, with particular attention being paid to aspects such as:

- Road surface type,
- Traffic speed,
- Traffic volume and compositions,
- Location and height of any noise barriers: and
- Any other noise mitigation measures present on site.

If the results of the strategic noise maps do not correlate with the on-site monitoring and field survey results, the noise model will be updated in the vicinity of the Priority Important Area to more closely align with the real-world situation. The updated model will then be used for the assessment of mitigation measures.

10.5 Review of Possible Noise Mitigation Measures

Once the extent of the existing noise exposure levels is confirmed for a PIA, the potential noise mitigation measures will be investigated, and a cost benefit analysis undertaken for each, with the aim of developing a selection matrix which leads towards a recommendation for action.

PIA1, PIA2, PIA 3, PIA4, PIA5 and PIA6 are located along the N6, R336, R864 and L1013 roads in Galway City.

Noise mitigation measures can be implemented on or directly alongside the sources, others may be in the region between the roads and the dwellings, and others may be at the noise sensitive locations. As all of the PIAs relate to dwellings located directly along busy transport routes within Galway City, the traditional options for road traffic noise mitigation via pathway control (barrier, earth bunds, mounds) are limited in these cases.

The following are an indication of the types of measures which may be relevant to consider for noise sensitive locations exposed to noise from road sources:

- Earthworks, such as earth bunds, mounds or cuttings
- Coverage, including baffles or tunnels
- Acoustic windows or secondary glazing
- Acoustics ventilation, passive or active and
- Chimney caps and dampers.

The following additional types of measures may be relevant to consider for exposure to road traffic noise:

- Re-surface roads with 10mm stone mastic asphalt (SMA)
- Re-surface roads with low noise road surfaces, or thin surface treatments
- Vehicle speed management, or speed limit reductions
- Traffic management – routes and HGVs
- New road construction (bypass)
- Roadside noise barriers and screening measures

For road traffic noise, the Phenomena Project identified the most cost-effective scenarios, combining set of complementary noise mitigation measures were:

1) More quiet roads, quieter tyres and specific lower vehicle sound limits
2) As 1) with the addition of increased electrification of the road vehicle fleet
3) Speed restriction, car-free zones, quiet facades and dwelling insulation

The following were shown to offer the most cost-effective noise mitigation measures in the context of the ZPAP target of 30% reduction in the number of people chronically exposed to environmental noise by 2030:

- Road traffic noise
- Reducing the road traffic noise through road resurfacing and low noise road surfaces
- Speed restriction or speed limit reductions
- Car-free zones
- Dwelling façade insulation either new build or retrofit and
- Planning new developments with quiet facades

For each Priority Important Area being assessed, all possible mitigation measures will be considered, and a shortlist of feasible and practical measures will be prepared for analysis to quantify the potential for reduction in the population noise exposure as part of the cost-benefit analysis.

Galway City Council will liaise and consult with the relevant noise mapping bodies when selecting feasible noise mitigation measures for detailed assessment.

10.6 Assessment of Noise Reduction Effects of Potential Measures

Following a review of possible noise mitigation measures, a shortlist of practical noise mitigation measures which could be implemented for each PIA is drawn up. The next step is to undertake an assessment of the potential noise mitigation which the measures could provide, both on their own, and in combination with others.

After the strategic noise maps have been reviewed as outlined in Section 10.4, they can be considered as the existing situation for the purpose of the Cost-Benefit Analysis (CBA). These may be compared to the levels measured during the ambient noise survey, and any systemic under or over calculations adjusted to validate the models. This approach helps to establish a validated baseline model for the assessment.

The EPA Guidance recommends that the appraisal of monetised benefits to health is undertaken using the UK WebTAG workbooks. These require calculated noise levels for four scenarios:

1) Opening year – without scheme (do-minimum)
2) Opening year – with scheme/mitigation measures
3) Forecast year (typically 15 years from opening) – without scheme (do-minimum)
4) Forecast year (typically 15 years from opening) – with scheme/mitigation measures

The strategic noise models would need to be amended to take into account the proposed noise mitigation measures, but also the forecast change in road traffic flows for both the opening year and forecast year. Traffic flow forecasts should take into account any other planned developments which may affect traffic flows on the roads in the models.

For each noise mitigation scenario, the four sets of noise level calculations are required for the same area. The EPA Guidance recommends that the assessment area includes all noise sensitive premises within the PIA, and all other noise sensitive premises within 600m of the proposed noise mitigation measures.

The EPA Guidance recommends that when using the WebTAG workbooks the “assumed average household size” be amended to a value derived from the CSO SAPS population data for the assessment area and the test discount rate is amended from 2.5% to 4% in line with the Irish Government guidance on cost-benefit analysis for public sector projects.

For each of the proposed noise mitigation measures, or combination of measures, the estimated cost of implementing the mitigation for a 60-year appraisal period is required.

The final step is to draw up a comparison of the monetised value of the benefit to health, based on the WebTAG approach, versus the cost estimates for each of the noise mitigation measures under review for the PIA. The difference in estimated costs is presented alongside the cost benefit ratio (the ratio of cost over benefit).

A cost benefit ratio of less than 1.0 indicates that the monetised health benefits outweigh the costs.

The noise mitigation measures, with cost benefit ratios below 1.0, are assessed. The most cost-effective noise mitigation measures, or combination of measures, are proposed to the relevant departments, organisations and funding agencies/holders to be incorporated within their future work plans. Where funding and resources are available, the recommended noise mitigation measures may be implemented. Following implementation, post-completion noise measurement surveys will be undertaken to confirm the predicted noise reduction.

11 Implementation Plan

11.1 Roles and Responsibilities

The Environmental Protection Agency (EPA) is designated as the National Authority for the purpose of the Regulations.

The EPA is required to provide advice and guidance to the relevant noise mapping bodies and action planning authorities.

The EPA is responsible for reporting to the European Commission the information relating to strategic noise mapping and action planning in accordance with Article 10(2) of the Directive.

The European Communities (Environmental Noise) Regulations, 2018 S.I. No. 549/2018 identify the noise-mapping bodies responsible for agglomerations, railways, roads and airports.

Regulation 2 defines a major road as a 'public road as defined in the Roads Act 1993, as amended, which has more than 3 million vehicle passages per year'. Thus, a designated 'major road' could be any section of National, Regional or Local Road.

Strategic noise mapping was undertaken in 2022 by the designated noise mapping bodies.

The preparation of action plans is required to be carried out by designated Action Planning Authorities. The designated Action Planning Authorities are those local authorities within whose functional areas, major roads, railways or major airports are located.

Regulation 14(1) requires the EPA to submit summaries of Action Plans to the European Commission.

The EPA is responsible for issuing and monitoring compliance with Integrated Pollution Control (IPC) Licences.

11.2 Targets and objectives

This Noise Action Plan sets out how Galway City Council will manage environmental noise along major roads, particularly, where the noise exposure levels have the potential to harm human health.

The following objectives, policies and provisions of the Galway City Development Plan 2023-2029, Galway City Climate Action Plan 2024-2029 are being implemented to increase sustainable transport usage and thus reduce private car usage and associated environmental noise from road traffic sources.

Galway City Development Plan 2023-2029

Policy 4.2 Land Use and Transportation

1. Promote close co-ordination between land use and transportation through policies, land use zoning and objectives.
2. Support and facilitate the integration of land use and transportation in order to facilitate compact city growth, supported by sustainable modes of transport that will encourage economic well-being and ensure the movement of people and goods in a manner that is sustainable, safe and provides ease of access for all, enhances

quality of life and supports a reduction in transport related greenhouse gas emissions.
3. Provide for the development of high volume, trip intensive, developments such as commercial centres and employment hubs at locations that will minimise the need, distance and time taken to travel and promote the use of sustainable transport modes such as walking, cycling and public transport to access these locations.
4. Promote effective sustainable residential densities in the city particularly along and close to the existing and planned public and sustainable transport route network.
5. In line with the Core Strategy and to give direction for future settlement expansion prepare Local Area Plans and masterplans where appropriate that includes for integration of land use with transportation.
6. Aim to achieve the concept of a '15 minute city' where land use policies facilitate residents to access their daily needs within a 15 minute walk or bike ride and thereby reduce the dependence on car transport.

Policy 4.3 Public Transport

1. Support the implementation of Bus Connects Galway and the overall bus transport network which will include for a high frequency cross-city network of services and all associated infrastructural requirements, traffic management and priority arrangements.
2. Promote the availability of the city bus network including the priority measures for use by the national, regional and tour bus services.
3. Facilitate public transport interchanges and associated proposals for transfer ticketing and flexible payment methods.
4. Prioritise the provision of park and ride facilities at appropriate locations so that they align with the bus network and cross-city link route to create the necessary modal shift to reduce car dependency.
5. Promote access to public transport services for those attending primary and post primary schools in consultation with the Department of Education and Skills.
6. Ensure ease of access to all bus termini in the city centre and facilitate tourist coach drop-off/pick up locations convenient to the city centre that accommodates bus layover areas.
7. Support measures which aim to improve the service capacity of the Galway City inter urban rail transport network including for the development of commuter rail services, with a preference for a twin track approach from the city to Athenry.
8. Support measures to develop Ceant Station as an integrated multi modal transport hub which facilitates easy interchange between national, regional and local transport services.
9. Continue to support taxi services at appropriate locations including proximate to public transport corridors and where feasible permit use of bus priority infrastructure.
10. Support the modal change to public transport under the Galway Transport Strategy (GTS) through modal change targets for walking, cycling and public transport within the lifetime of the City Development Plan.

Policy 4.4 Sustainable Mobility – Walk and Cycle

1. Support the Galway Transport Strategy proposals for a primary cycle network to facilitate safe and convenient medium distance journeys.

2. Support the Galway Transport Strategy proposals for a secondary cycle network and feeder links to facilitate safe and convenient local journeys and to afford linkage into the primary cycle network.
3. Support the National Greenway Strategy and proposed Greenways as part of the primary cycle network and as part of links to Bearna, Oranmore, Maigh Cuilinn and Oughterard.
4. Implement a structured programme of improvements across the whole city pedestrian network and at street crossings.
5. Facilitate cycling on the proposed Bus Connects Galway Routes where appropriate including on the proposed Cross-City Link.
6. Support and promote initiative such as Park and Stride, Green Schools Travel and Safe Routes to School Programmes, School Streets and the concept of having safe routes to school.
7. Improve bicycle parking at key destinations and near bus stops/interchanges.
8. Promote facilitate and maintain maximum connectivity and permeability for pedestrians and cyclists in the design and management of new public and private projects and in upgrading and retrofitting existing developments in accordance with the Design Manual for Urban Roads and Streets (2019) and Permeability a Best Practice Guide, NTA (2015).
9. Ensure facilities for pedestrians and cyclists are designed in accordance with national standards.
10. Promote the implementation of a Wayfinding Scheme with provision of directional information and signage at appropriate locations across the city as part of the implementation of the Public Realm Strategy.
11. Promote and facilitate the development of Public Bike/other share schemes across the city.
12. Any active-travel intervention on a road or street which requires people cycling to share the same lane with general motor traffic, should also ensure that such roads or streets are designed and managed to create the appropriate environment as per guidance in the National Cycling Manual on “Shared /Mixed Streets”.

Policy 4.5 Transport Demand Management Measures

1. Support GTS measures for a reduction of car movements through the city centre, to be achieved by specific traffic management arrangements including the implementation of a City Centre Access Network.
2. Support the GTS proposals to prioritise public transport movements in the city centre through the implementation of a designated public transport route, the Cross-City Link.
3. Promote changes in the management of car parking, including for the reduction of on-street parking, improved access arrangements and a review of pricing structures that will encourage greater sustainable mobility.
4. Implement the GTS proposals for a HGV management strategy and a loading and delivery strategy in the city centre.
5. Support and promote the use of smarter mobility and Intelligent Transport Solutions (ITS) to increase efficiency, safety and co-ordination across all transport networks.
6. Promote the implementation of Travel Plans with employers and schools, including Local Transport Plans (LTPs) using Area Based Transport Assessments (ABTA) as the methodology to prepare LTPs and Traffic and Transport

Assessments (TTA) where the scale of development determines the need for integrated land use and transport planning policies.
7. Increase the use of sustainable transport modes including public transport through targeted promotion and encouragement of behavioural change.

Policy 4.6 Road and Street Network and Accessibility

1. Support the N6 Galway City Ring Road in conjunction with Galway County Council and Transport Infrastructure Ireland (TII) in order to develop a transportation solution to address the existing congestion on the national and regional road network.
2. Enhance the delivery of an overall integrated transport solution for the city and environs by supporting the reservation of the designated strategic road corridor to accommodate the N6 GCRR project.
3. Support the proposals in the Galway Transport Strategy for design interventions, revised traffic management arrangements and priority arrangements for walking, cycling and public transport on the road network.
4. Implement improvements on the general road network, including new links and junction revisions where needed in the interest of safety and convenience for all users.
5. Implement best practice in road and street design according to the hierarchy of road users as set out in the Design Manual for Urban Roads and Streets (2013) as updated (2019) and 2020, where road design is subject to DMURS.
6. Support reduced speed limits in the city centre and residential areas of the city.
7. Promote accessibility for people with disabilities and people with reduced mobility and have regard to best practice guidance from the National Disability Authority (NDA).
8. Promote a permeable urban and suburban environment in accordance with best practice guidance as provided for in Permeability a Best Practice Guide (NTA 2015) and implement permeability schemes in existing areas where appropriate, permeability proof proposed developments and endeavour to retain existing local links with enhancements where needed.
9. Support national policy and guidance with regard to protection of the National Road network including the strategic function of the TEN-T core and comprehensive network. Development objectives will be in accordance with the DOECLG Spatial Planning and National Roads Guidelines (2012).
10. Evaluations of permeability in areas around district centres, neighbourhood centres and schools shall be carried out in the contest of the 15-minute city concept policy. Where obstacles are identified which impair direct and convenient access to service and amenities at these centres by walking or cycling, measures to improve permeability will be planned and prioritised.

Policy 4.8 Low Emission Infrastructure

1. Support the development of low emission fuel infrastructure and associated technologies.
2. Support and facilitate the switch to Electric Vehicles through supporting the expansion of the electric vehicle charging network at appropriate locations within the city in association with relevant agencies and stakeholders.

11.3 Programme of Works

The Galway City Noise Action Plan spans a four-year period from 2024-2028. The implementation of the NAP is subject to collaboration with relevant authorities and is also subject to available funding and resources.

Year 1 2025

- Prepare brief for the procurement of consultants to undertake noise monitoring and modelling
- Procure consultants
- Carry out noise monitoring and field surveys at PIA1 and PIA2
- Collect traffic data for the relevant noise monitoring site and noise monitoring time period
- Validate the noise model for PIA1 and PIA2
- Review potential noise mitigation measures for PIA1 & PIA2
- Carry out an assessment of the potential noise mitigation including cost-benefit analysis
- Seek funding from appropriate department, relevant agencies for funding to undertake noise mitigation measures
- Submit noise action plan annual report to EPA
- Carry out Screening for Appropriate Assessment (AA) for the identified actions for PIA1 and PIA2

Year 2 2026

- Procure noise mitigation measure works, subject to available funding, at PIA 1 & PIA2
- Carry out noise monitoring and field surveys at PIA3 and PIA4
- Collect traffic data for the relevant noise monitoring site and noise monitoring time period
- Validate the noise model for PIA3 and PIA4
- Review potential noise mitigation measures for PIA3 and PIA4
- Carry out an assessment of the potential noise mitigation including cost-benefit analysis
- Seek funding from appropriate department, relevant agencies for funding to undertake noise mitigation measures
- Carry out Screening for Appropriate Assessment (AA) for the identified actions for PIA3 and PIA4
- Submit noise action plan annual report to EPA

Year 3 2027

- Procure noise mitigation measure works, subject to available funding, at PIA3 and PIA4
- Consult and collaborate with TII in relation to proposed noise mitigation measures at PIA5 and PIA6 where noise source is road traffic on the N6 Bóthar na dTreabh

- Participate in procurement for Round 5 Strategic Noise Mapping
- Submit noise action plan annual report to EPA

Year 4 2028

- Procure noise mitigation measure works, subject to available funding, at PIA5 & PIA6
- Carry out review of Noise Action Plan
- Submit noise action plan annual report to EPA

11.4 Evaluation, Review and Corrective Action Programme

Galway City Council will review the programme annually to assess progress against the programme of works.

There are a number of risk factors associated with the delivery of the programme including financial risks. The financial resources required to deliver the programme is not yet determined and the delivery of the noise action plan is depending on adequate funding and other resources being available.

It should be noted that some elements of the programme are outside the control of Galway City Council and will require the approval of other statutory bodies.

The programme will be subject to an ongoing review to inform all relevant parties to any change in circumstances.

Galway City Council will review the programme on an annual basis and report progress of the programme to all relevant stakeholders and bodies.

The Council will carry out a review of the programme of works implemented under this action plan in 2028. This will coincide with Round 5 of noise mapping and action planning. The end of plan review will evaluate progress in terms of the programme drawn up in the Action Plan. Round 5 noise mapping will provide an indication of the change in environmental noise levels and the number of people exposed to noise levels above the threshold values and the number of people and will also examine the effectiveness of individual measures in terms of measurable noise values and statistical information on the number of people potentially exposed to health effects due to environmental noise.

12 Summary and Conclusions

The END was transposed into Irish Law by the European Communities (Environmental Noise) Regulations 2006 (S.I. 140/2006). These regulations were revised by the European Communities (Environmental Noise) Regulations 2018, (S.I. No. 549/2018) and were amended through the European Communities (Environmental Noise) (Amendment) Regulations 2021 (S.I. No. 663/2021).

The Regulations require that Noise Action Authorities prepare Noise Action Plans for their functional areas in respect of specified environmental noise sources. Noise Action Plans must be based on the results of strategic noise mapping carried out by designated noise mapping bodies. Transport Infrastructure Ireland (TII) prepared strategic noise maps for the national primary and secondary roads in Galway City. Galway City Council participated in a centralised approach for noise mapping of major roads within its functional area. Noise maps for these roads were prepared by TII on behalf of Galway City Council.

This Noise Action Plan, which is based on the results of R4 of the strategic noise maps, was prepared by Galway City Council. The Noise Action Plan describes the action planning area and the responsible authorities. It discusses the existing legislative background and guidance in relation to noise management.

A summary of the results of the strategic noise mapping is provided. The NAP identifies areas where the population is exposed to noise levels about 53 dB L_{den} and 45 dB L_{night}. These are Important Areas where the population may potentially be exposed to adverse health effects due to noise exposure.

Six Priority Important Areas have been selected by Galway City Council for assessment during the life cycle of this noise action plan. These areas are located at:

- L1013 Western Distributor Road
- R864 Newcastle Road
- R336 Bohermore
- R336 Bohermore
- N6 Bóthar na dTreabh
- N6 Bóthar na dTreabh (Briarhill)

The Noise Action Plan covers a four-year period from 2024 to 2028. After this time, it will be reviewed and revised. A public consultation process was undertaken on this Draft Plan, the results of which were taken into account when preparing the final document.

The following key actions are proposed over the lifetime of the NAP:

- Consult and collaborate with relevant road authorities
- Conduct noise monitoring and validate the noise model for the six PIAs
- Collect field survey data including traffic flows
- Review potential noise mitigation measures for the PIAs and conduct a cost-benefit analysis
- Seek approval for funding for the implementation of the identified mitigation measures

This Plan is situated alongside a hierarchy of statutory documents that has been subject to environmental assessment/screening for environmental assessment, as appropriate, and

forms the decision-making and consent-granting framework. The Plan does not provide consent or establish a framework for granting consent and will not be binding on any decisions relating to the granting of consent. In order to be realised, projects included in this Plan (in a similar way to other projects from any other sectors) will have to comply, as relevant, with various legislation, policies, plans and programmes (including requirements for lower-tier Appropriate Assessment, Environmental Impact Assessment and other licencing requirements as appropriate) that form the statutory decision-making and consent-granting framework. All proposals for development/works under the Action Plan will be required to demonstrate compliance with the requirements of environmental and planning legislation and planning and licensing processes, including existing provisions of land use plan(s) and policy documents such as the National Planning Framework, Galway Transport Strategy and Galway City Development Plan 2023-2029 (including those provisions identified in the accompanying Screening SEA report).

Appendix A Glossary of Acoustic and Technical Terms

Term	Definition
AA	Appropriate Assessment
AADT	Annual Average Daily Traffic
ABP	An Bord Pleanála
Action Planning	A plan designed for the purpose of managing noise issues and their effects, including noise reduction if necessary
Agglomeration	Major Continuous Urban Area as set out within the Regulations
AMI	Acute Myocardial Infraction
ANCA	Airport Noise Competent Authority
APA	Action Planning Authority
Attribute Data	A trait, quality, or property describing a geographical feature, e.g. vehicle flow or building height
BAR	Balanced Approach Regulation
CBA	Cost Benefit Analysis
CHD	Coronary Heart Disease
CNG	WHO Community Noise Guidelines 1999
CNOSSOS-EU	Common Noise Assessment Methods for Europe, Directive 996/2015
CQA	Candidate Quiet Area
CSO	Central Statistics Office
Data	Data comprises information required to generate the outputs specified, and the results specified
dB	Decibel
DECC	Department of the Environment, Climate and Communications
EC	European Commission
ECAC	European Civil Aviation Conference
EEA	European Environment Agency
END	Environmental Noise Directive (2002/48/EC)
ENG	WHO Environmental Noise Guidelines for the European Region 2018
EPA	Environmental Protection Agency
ESRI	Economic and Social Research Institute
EU	European Union
EV	Electric Vehicle
GIS	Geographical Information Systems
IA	Important Area
HA	Highly Annoyed
HSD	Highly Sleep Disturbed
ICAO	International Civil Aviation Organisation
IE	Industrial Emissions
IED	Industrial Emissions Directive 2010/75/EU on Industrial Emissions (Integrated Pollution Prevention and Control)
INM	Integrated Noise Model
ING	Irish National Grid
IPPC	Integrated Pollution Prevention Control
IHD	Ischaemic Heart Disease

ITM	Irish Transverse Mercator
ISO	International Standards Organisation
LA	Local Authority
Metadata	Descriptive information summarising data
MIA	Most Important Area
MCEI	Minimum Criterial for Environmental Inspections
NA	Not Applicable
NAO	Noise Abatement Object
NAP	Noise Action Plan
NNG	WHO Night Noise Guidelines for Europe 2009
NMB	Noise Mapping Body
Noise Bands	Areas lying between contours of the following levels (dB): L_{den} <50, 50 – 54, 55 – 59, 60 – 64, 65 – 69, 70 – 74, >74 L_d <50, 50 – 54, 55 – 59, 60 – 64, 65 – 69, 70 – 74, >74 L_e <50, 50 – 54, 55 – 59, 60 – 64, 65 – 69, 70 – 74, >74 L_n <45, 45 – 49, 50 – 54, 55 – 59, 60 – 64, 65 – 69, 70 – 74, >74
Noise Levels	Free-field values of L_{den}, L_d, L_e, L_n, and $L_{aeq,16h}$ at a height of 4m above local ground level
Noise Level – L_d - Daytime	L_d (or L_{day})=$L_{Aeq,12h}$ (07:00 to 19:00)
Noise Level – L_e - Evening	L_e (or $L_{evening}$)=$L_{Aeq,4h}$ (19:00 to 23:00)
Noise Level – L_n - Night	L_n (or L_{night})=LAeq,8h (23:00 to 07:00)
Noise Level -L_{den} – Day/Evening/Night	A combination of L_d. L_e and L_n as follows: L_{den} = 10 * log 1/24 {12 * 10^((L_{day})/10) + 4 * 10^(($L_{evening}$+5)/10)+8*10^((L_{night} +10)/10)}
Noise Mapping (Input) Data	Two broad categories: (1) Spatial (e.g. road centre lines, building outlines) (2) Attribute (e.g. vehicle flow, building height – assigned to specific spatial data)
Noise Mapping Software	Computer program that calculates required noise levels based on relevant input data
Noise Model	All the input data collated and held within a computer program to enable noise levels to be calculated
Noise Model File	The (proprietary software specific) project file(s) comprising the noise model
NSAI	National Standards Authority of Ireland
NTA	National Transport Agency
OEE	Office of Environmental Enforcement
ORM	Office of Radiation Protection and Environmental Monitoring
OSI	Ordnance Survey for Ireland (now Tailte Éireann)
Output Data	The noise outputs generated by the noise model
PCQA	Potential Candidate Quiet Area
PIA	Priority Important Area
Processing Data	Any form of manipulation, correction, adjustment factoring, correcting, or other adjustment of data to make it fit for purpose. (Includes operations sometimes referred to as ‘cleaning’ of data)
QA	Quality Assurance
Raster Heat Map	A raster heat map shows the relative density of values at points using a colour scheme to indicate density

	value. In this case the value used is the number of people highly annoyed per 100m^2.
RESPF	Renewable Electricity Spatial Policy Framework
RMO	Road Management Office
RSA	Road Safety Authority
SEA	Strategic Environmental Assessment
SMA	Stone Mastic Asphalt
SNM	Strategic Noise Map
Spatial (Input) Data	Information about the location, shape and relationships among geographic features, for example road centre lines and buildings
TAG	English Department for Transport, Transport Analysis Guidance
TII	Transport Infrastructure Ireland
WHO	World Health Organisation
ZEVI	Zero Emissions Vehicles Ireland
ZPAP	Zero Pollution Action Plan

Appendix B Bibliography and References

EU Legislation and Publications

Directive 92/43/EEC on the conservation of natural habitats and of wild fauna and flora, 21 May 1992, as amended 1997, 2003, 2006 & 2013

Directive 2001/42/EC on the assessment of the effects of certain plans and programmes on the environment, 27 Jun e2001

Directive 2002/49/EC relating to the assessment and management of environmental noise, OJ L189/12-25, 18 July 2002

Directive 2003/4/EC on public access to environmental information, 28 January 2003

Directive 2006/93/EC on the regulation of the operation of aeroplanes covered by Part II, Chapter 3, Volume 1 of Annex 16 to the Convention on International Civil Aviation, second edition (1988), 12 December 2006

Directive 2007/2/EU on industrial emissions (integrated pollution prevention and control), 24 November 2010

Directive 2011/92/EU on the assessment of the effects of certain public and private projects on the environment, 13 December 2011, as amended by Directive 2014/52/EU, 16 April 2014

Regulation (EU) No 167/2013 on the approval and market surveillance of agricultural and forestry vehicles, 5 February 2013

Directive 2014/45/EU on periodic roadworthiness tests for motor vehicles and their trailers and repealing Directive 2009/40/EC, 3 April 2014

Directive 2014/47/EU on the technical roadside inspection of the roadworthiness of commercial vehicles circulating in the Union and repealing Directive 2000/30/EC, 3 April 2014

Regulation (EU) No 540/2014 on the sound level of motor vehicles and of replacement silencing systems, and amending Directive 2007/46/EC and repealing Directive 70/157/EEC, 16 April 2014

Regulation (EU) No 598/2014 on the establishment of rules and procedures with regard to the introduction of noise-related operating restrictions at Union airports within a Balanced Approach and repealing Directive 2002/30/EC, 16 April 2014

Directive (EU) 2016/1628 on requirements relating to gaseous and particulate pollutant emission limits and type-approval for internal combustion engines for non-road mobile machinery, amending Regulations (EU) No 1024/2012 and (EU) No 167/2013, and amending and repealing Directive 97/68/EC, 14 September 2016

Delegated Regulation (EU) 2017/1576 amending Regulation (EU) No 540/2014 of the European Parliament and of the Council as regards the Acoustic Vehicle Alerting System requirements for vehicle EU-type approval, 26 June 2017

Corrigendum to Commission Directive (EU) 2015/996, OJ L5/35-46, 10 January 2018

Regulation (EU) 2018/858 on the approval and market surveillance of motor vehicles and their trailers, and of systems, components and separate technical units intended for such

vehicles, amending Regulation (EC), No 715/2007 and (EC) No 595/2009 and repealing Directive 2007/46/EC, 30 May 2018

Delegated Regulation (EU) 2019/839 amending Regulation (EU) No 540/2014 of the European Parliament and of the Council on the sound level of motor vehicles and of replacement silencing systems, 7 March 2019

Regulation 2019/1010 on alignment of reporting obligations in the field of legislation related to the environment, and amending Directive 2002/49/EC, OJ L 170, of 25 June 20190.

Regulation (EU) 2019/2144 of the European Parliament and of the Council of 27 November 2019 on type-approval requirements for motor vehicles and their trailers, and systems, components and separate technical units intended for such vehicles, as regards their general safety and the protection of vehicle occupants and vulnerable road users, amending Regulation (EU) 2018/858 of the European Parliament and of the Convention on the and repealing Regulation (EC) No78/2009, (EC) No 79/2009 and (EC) No 661/2009 of the European Parliament and of the Council and Commission Regulations (EC) No 631/2009, (EU) No 406/2010, (EU) No 672/2010, (EU) No 1003/2010, (EU) No 1005/2010, (EU) No 1008/2010, (EU) No 1009/2010, (EU) No19/2011, (EU) No109/2011, (EU) No 458/2011, (EU) No 65/2012, (EU) No 130/2012, (EU) No 347/2012, (EU) No 351/2012, (EU) No 1230/2012 and (EU) 2015/166, OJ L 325, 16 December 2019

Directive (EU) 2020/367 of 4 March 2020 amending Annex III to Directive 2002/49/EC of the European Parliament and of the Council as regards the establishment of assessment methods for harmful effects of environmental noise, OJ 67, 5 March 2020

Regulation (EU) 2020/740 on the labelling of tyres with respect to fuel efficiency and other parameters, amending Regulation (EU) 2017/1369 and repealing Regulation (EC) No 1222/2009, 25 May 2020

Delegated Directive (EU) 2021/1226 amending, for the purpose of adapting to scientific and technical progress, Annex II of Directive 2002/49/EC of the European Parliament and the Council as regards common noise assessment methods, OJ L269/65-142 of 28 July 2021, 21 December 2020

Judgement of the Court (Eight Chamber). European Commission v Portuguese Republic. Case C-687/20, 31 March 2022

Regulation No. 117 of the Economic Commission for Europe of the United Nations (UNECE) – Uniform provisions concerning the approval of tyres with regard to rolling sound emissions and/or to adhesion on wet surfaces and/or to rolling resistance [2016/1350]

European Commission (2003). Directive 2003/4/EC of the European Parliament and of the Council of 28 January 2003 on public access to environmental information. OJ L41, 14/02/2003, Luxembourg 2003.

European Commission (2002). Directive 2002/49/EC of the European Parliament and of the Council of 25 June 2022 relating to the assessment and management of environmental noise. OJ L 189, 18/07/2022, Luxembourg 2002

BAR Regulations 2014/598 Establishment of rules and procedures with regard to the introduction of noise-related operating restrictions at Union airports within a Balanced Approach

EU/EC Publications

European Commission, Future Noise Policy – European Commission Green Paper, 1996

European Environment Agency, Babisch, W., Lictra, G., Paviotti, M., et al., *Good practice guide on quiet areas*, Licitra, G. (editor), Berg,. (editor), Vos, (editor), Publications Office, 2014, https://data.europa.eu/doi/10.2800/12644

European Environment Agency, Fons, J., Blanes, N., Nugent, C. et al., *Quiet areas in Europe – The environment unaffected by noise pollution*, Publications Office, 2016, https://data.europa.eu/doi/10.2800/7586

European Commission, Managing Natura 2000 sites, The provisions of Article 6 of the 'Habitats' Directive 92/43/EEC, Commission Notice C(2018) 7621 final, 21 November 2018

European Environment Agency, Healthy environment: healthy lives: how the environment influences health and well-being in Europe, EEA Report No 21/2019, 2019

EU Action Plan: 'Towards Zero Pollution for Air, Water and Soil' COM/2021/400, 2021

European Commission, Directorate-General for Environment, Kantor, E., Klebba, M., Richer, C. et al., *Assessment of potential health benefits of noise abatement measures in the EU – Phenomena project*, Publications Office, 2021, https://data.europa.eu/doi/10.2779/24566

European Environment Agency, Potential quiet areas in END agglomerations, Eionet Report – ETC/ATNI 2021/4, November 2021

Report from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions, First 'zero pollution' monitoring and outlook, 'Pathways towards cleaner air, water and soil for Europe', December 2022.

World Health Organisation, Regional Office for Europe. (2009). Night noise guidelines for Europe. World Health Organization. Regional Office for Europe.

European Environment Agency, *Environmental noise in Europe*, 2020, Publications Office, 2020, https://data.europa.eu/doi/10.2800/686249

Irish Legislation

Environmental Noise Regulations 2006, (S.I. No. 140 of 2006).

European Communities (Noise Emission by Equipment for Use Outdoors) (Amendment) Regulations 2006, (S.I. No. 241 of 2006)

Environmental Protection Agency Acts 1992 and 2003

Protection of the Environment Act, 2003

Safety, Health and Welfare at Work (Control of Noise at Work) Regulations 2006, S.I. No. 371 of 2006

Building Regulations 1997, S.I. No. 497/1997

Road Traffic (Construction, Equipment and Use of Vehicles) Regulations, 1963 S.I. No. 190/1963

Waste Management Acts 1996 to 2003

Road Traffic Act 1961, Revised, Updated to 16 May 2023, Number 24 of 1961

Environmental Protection Agency Act, 1992 (Noise) Regulations, 1994 (S.I. No. 179/ 1994).

Environmental Protection Agency Act 1992, Revised, Updated to 18 April 2023, Number 7 of 1992

European Communities (Environmental Assessment of Certain Plans and Programmes) Regulations 2004, S.I. No. 435 of 2004

Planning and Development (Strategic Environmental Assessment) Regulation 2004, S.I. No. 436 of 2004

European Communities (Access to Information on the Environment) Regulations 2007, S.I. No. 133 of 2007

Planning and Development Regulation 2008, S.I. No. 235 of 2008

European Communities (Environmental Assessment of Certain Plans and Programmes) (Amendment) Regulations 2011, S.I. No. 200 of 2011

Planning and Development (Strategic Environmental Assessment) (Amendment) Regulations 2011, S.I. No 201 pf 2011

European Communities (Access to Information on the Environment) (Amendment) Regulations 2011, (S.I. No. 662/2011)

European Union (Industrial Emissions) Regulations 2013, S.I. No. 138/2013

European Communities (Access to Information on the Environment) (Amendment) Regulations 2014, (S.I. No. 615/2014)

European Union (Two or Three Wheel Motor Vehicles and Quadricycles Type-approval) Regulations 2015, S.I. No. 614/2015

European Union (Agricultural or Forestry Vehicle Type Approval and Entry into Service) Regulations 2017, S.I. No. 645/2017

European Communities (Access to Information on the Environment) (Amendment) Regulations 2018, (S.I. No. 309/2018)

European Communities (Environmental Noise) Regulations 2018, S.I. No. 549/2018

Aircraft Noise (Dublin Airport) Regulation Act 2019, Number 12 of 2019

European Union (National Car Test – EU Roadworthiness Certificates) Regulations 2020, S.I. No. 554/2020

European Union (Road Vehicles: Type approval and Market Surveillance) Regulations 2020,

S.I. No. 556/2020

European Union (Commercial Vehicle Roadworthiness) (Roadworthiness Certificate and Roadworthiness Test) Regulations 2021, S.I. No. 617/2021

European Communities (Environmental Noise) (Amendment) Regulations 2021, S.I. No. 663/2021

European Union (Internal Combustion Engines for Non-road mobile machinery) (Gaseous and Particulate Pollutant Emission Limits and Type-approval) Regulations 2021, S.I. No. 735 of 2021.

European Union (Tyre Labelling) (Energy Efficiency) Regulations 2022, S.I. No. 670/2022

EPA Publications

Environmental Protection Agency, Advice Notes on Current Practice (in the preparation of Environmental Noise Impact Statements), 2003

Environmental Protection Agency, Synthesis Report on Developing a Strategic Environmental Assessment (SEA) Methodologies for Plans and Programmes in Ireland, 2003

Environmental Protection Agency, Office of Environmental Enforcement (OEE), Guidance Note for Noise: Licence Applications, Surveys and Assessments in Relation to Scheduled Activities (NG4), January 2016

Environmental Protection Agency, Research 264: Gren and Blue Spaces and Health: A Health-led Approach,2018

Environmental Protection Agency, Research 295: Research on Aspects of Ireland's Environment, Consumer Behaviour and Health: ESRI Environment Research Programme 2016-2018, 2019

Environmental Protection Agency, Research 328: Eco-Health: Ecosystem Benefits of Greenspace for Health, 2020

Environmental Protection Agency, Research 348 Toolkit: Connecting with Nature for Health and Wellbeing, 2020

Environmental Protection Agency, Research 348: Nature and Environment to Attain and Restore Health (NEAR Health), 2020

Environmental Protection Agency, Good Practice Guidance on SEA Screening, 2021

Environmental Protection Agency, Round 4 Strategic Noise Mapping of Major Roads For the Fourth Round of the Environmental Noise Regulations 2018, March 2021 (V2)

Environmental Protection Agency, National Land Cover Map, March 2023

EPA Research 423: Environmental Transport Noise and Health: Evidence from Ireland (Noise-Health)

Guidance Note for Noise: Licence Applications, Surveys and Assessments in Relation to Scheduled Activities (NG4)

Irish Publications

Department of the Environment, Heritage and Local Government, Sustainable Residential Development in Urban Areas – Consultation draft guidelines for planning authorities, May 2009

Department of Housing, Planning and Local Government, Sustainable Urban Housing: Design Standards for New Apartments – Guidelines for Planning Authorities, March 2018

Department of the Environment, Heritage and Local Government, Urban Design Manual: A best practice guide. A companion document to the Draft Planning Guidelines on Sustainable Residential Development in Urban Areas, February 2008.

Department of Housing, Planning and Local Government, Sustainable Urban Housing: Design Standards for New Apartments – Guidelines for Planning Authorities, March 2018

Department of the Environment, Heritage and Local Government, Wind Energy Planning Guidelines, 2006

Department of the Environment, Heritage and Local Government, Quarries and Ancillary Activities – Guidelines for Planning Authorities, April 2004

Department of the Environment, Heritage and Local Government, Building Regulations 1997, Technical Guidance Document E – Sound, 1997 (Updated 2014)

Department of the Taoiseach, Reaching Out – Guidelines on Consultation for Public Sector Bodies, 2005

National Planning Framework – Ireland 2040 Our Plan (NPF), 2019

National Roads Authority, Good Practice Guidance for the Treatment of Noise during the Planning of National Road Schemes, March 2014

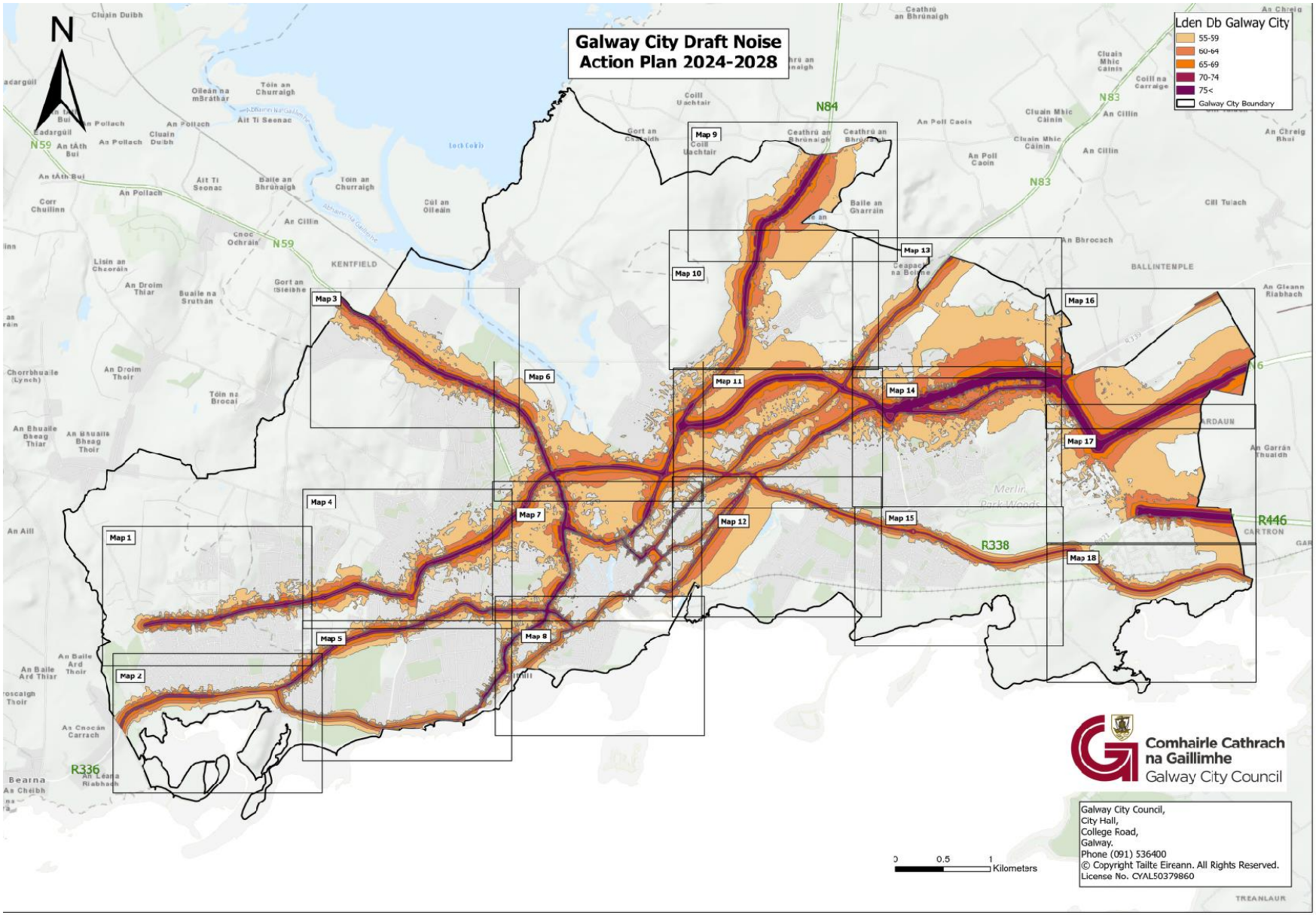
Climate Action Plan 2023 CAP2023 Changing Ireland for the Better

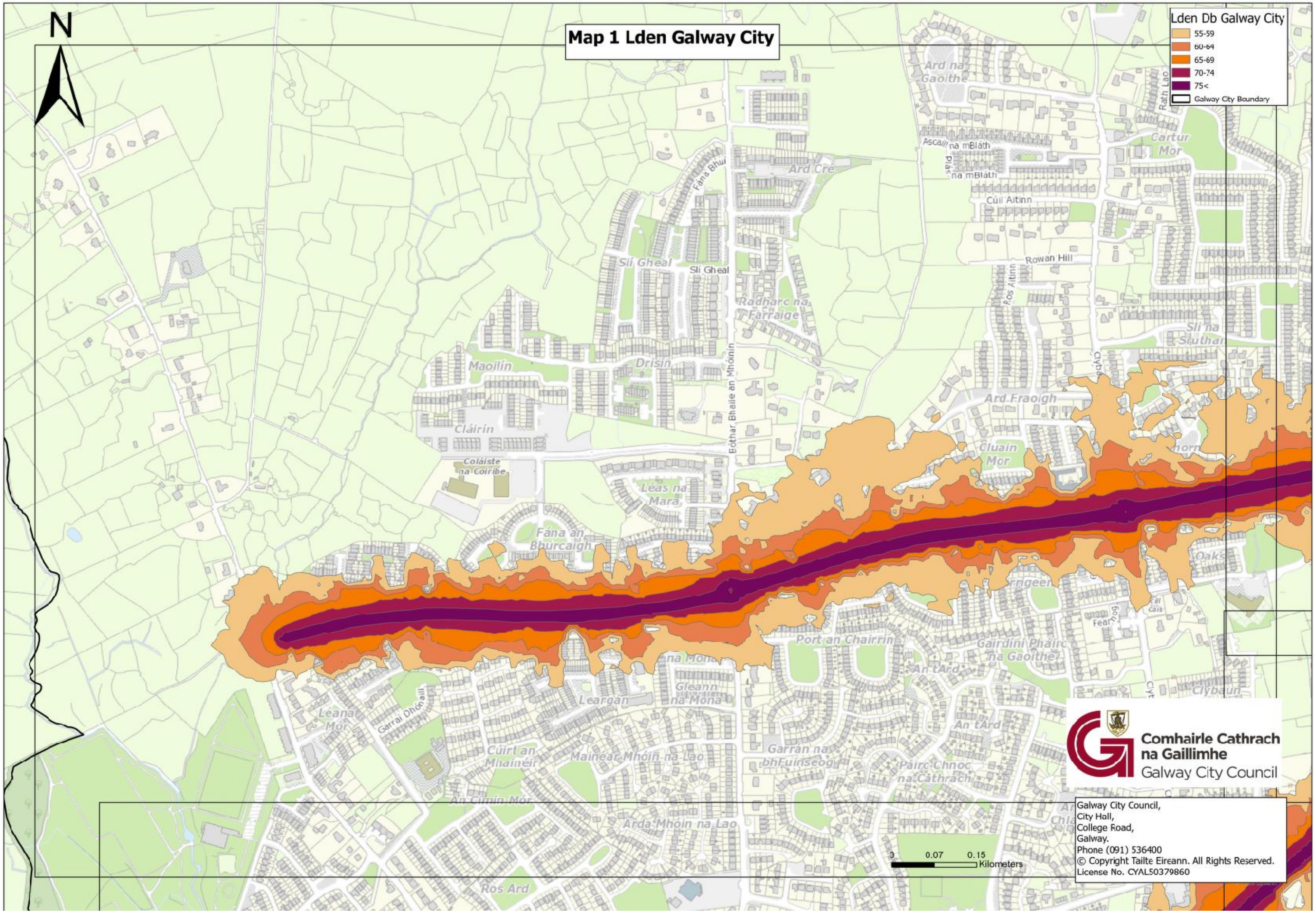
National Sustainable Mobility Policy April 2022

Department of Transport, Electric Vehicle Charging Infrastructure Strategy 2022-2025

National Parks and Wildlife Service, Guidance on Appropriate Assessment for Planning Authorities, 2010

Appendix C Strategic Noise Maps

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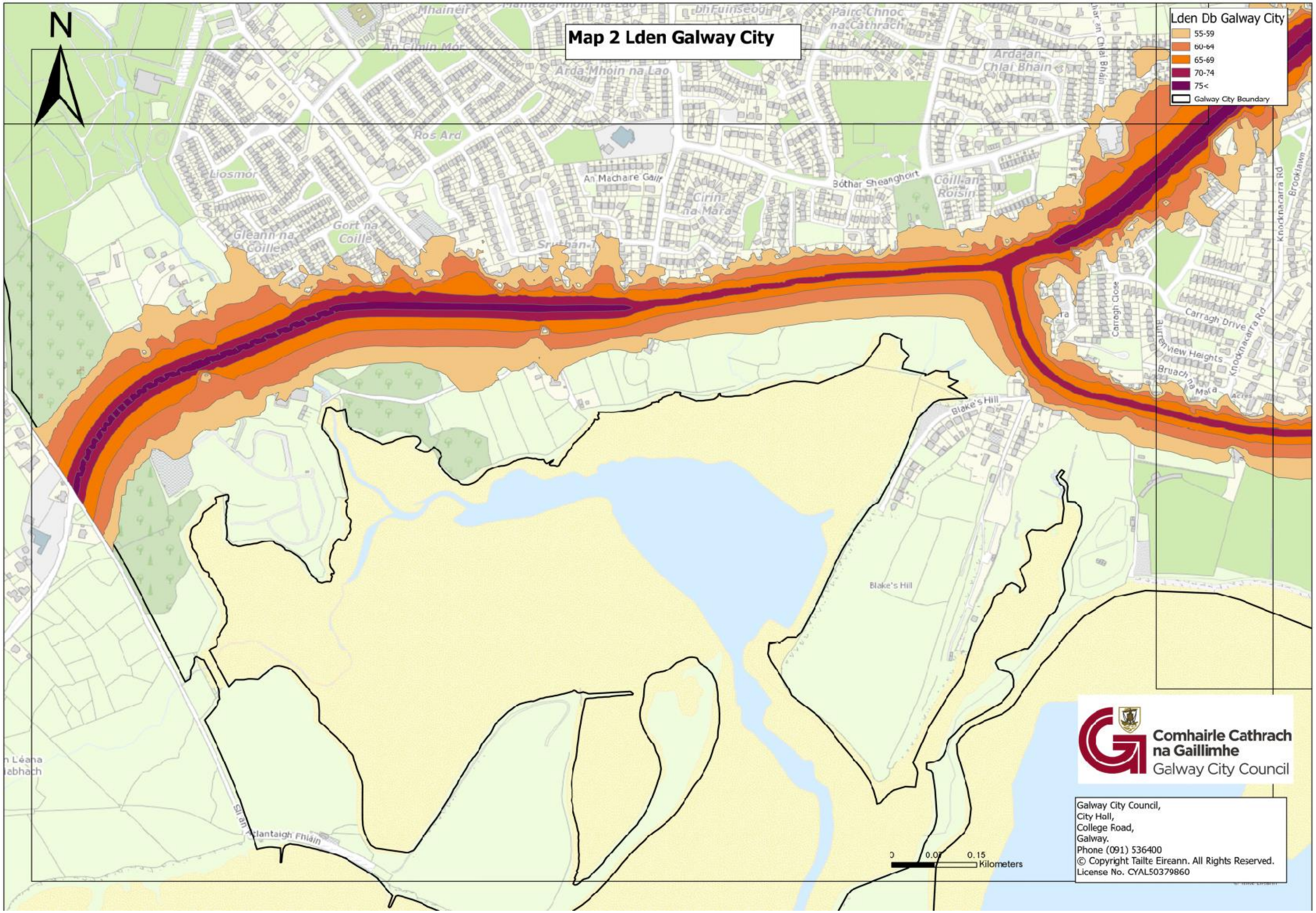
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Blake's Hill
Carragh Drive
Carragh Close
Bóthar Sheanghoirt
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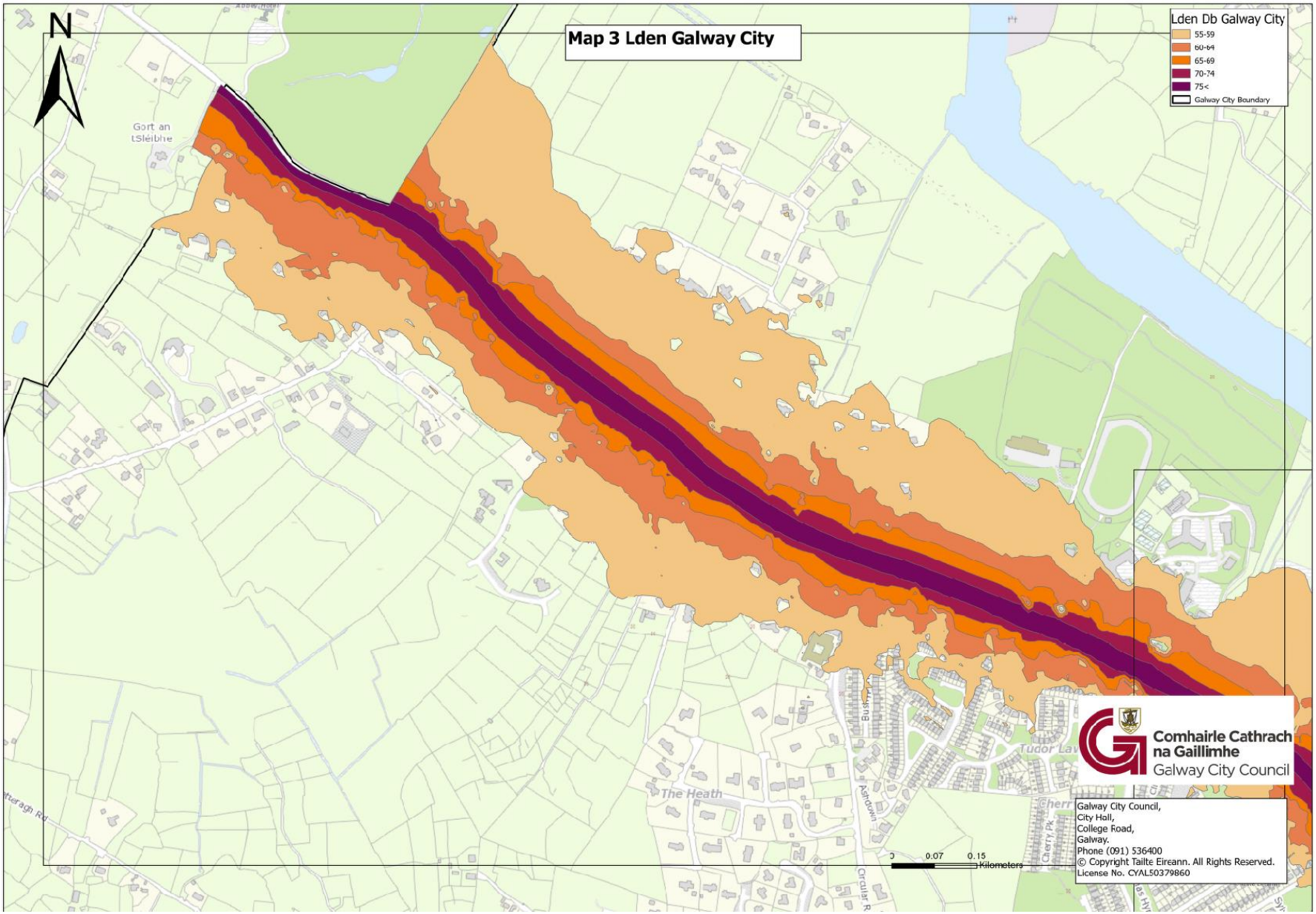
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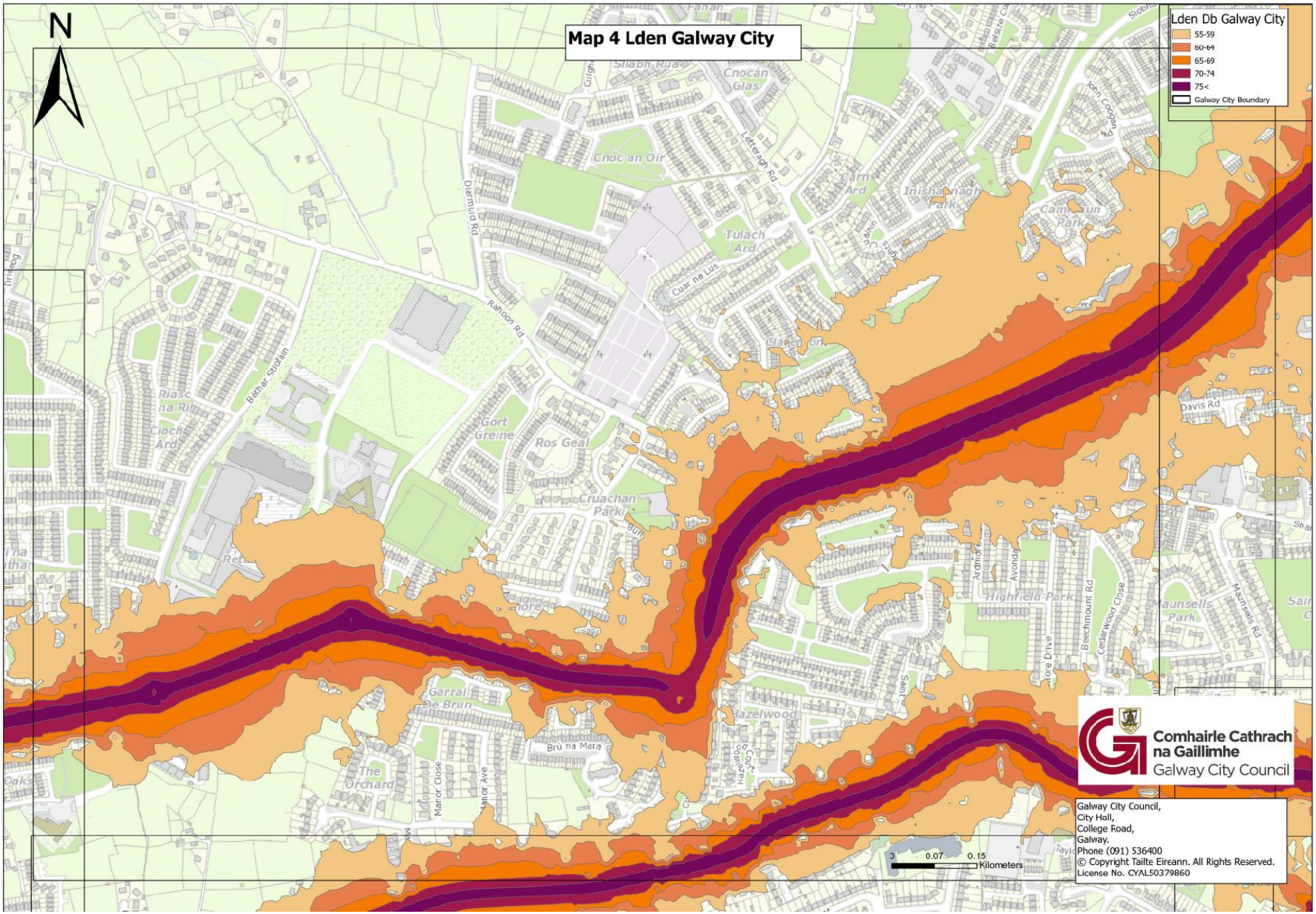
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Cnoc an Oir
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Rahoon Rd
Diarmuid Rd
Gort Greine
Ros Geal
Cruachan Parki
Highfield Park
Maunsells Park
Hazelwood
Bru na Mara
The Orchard
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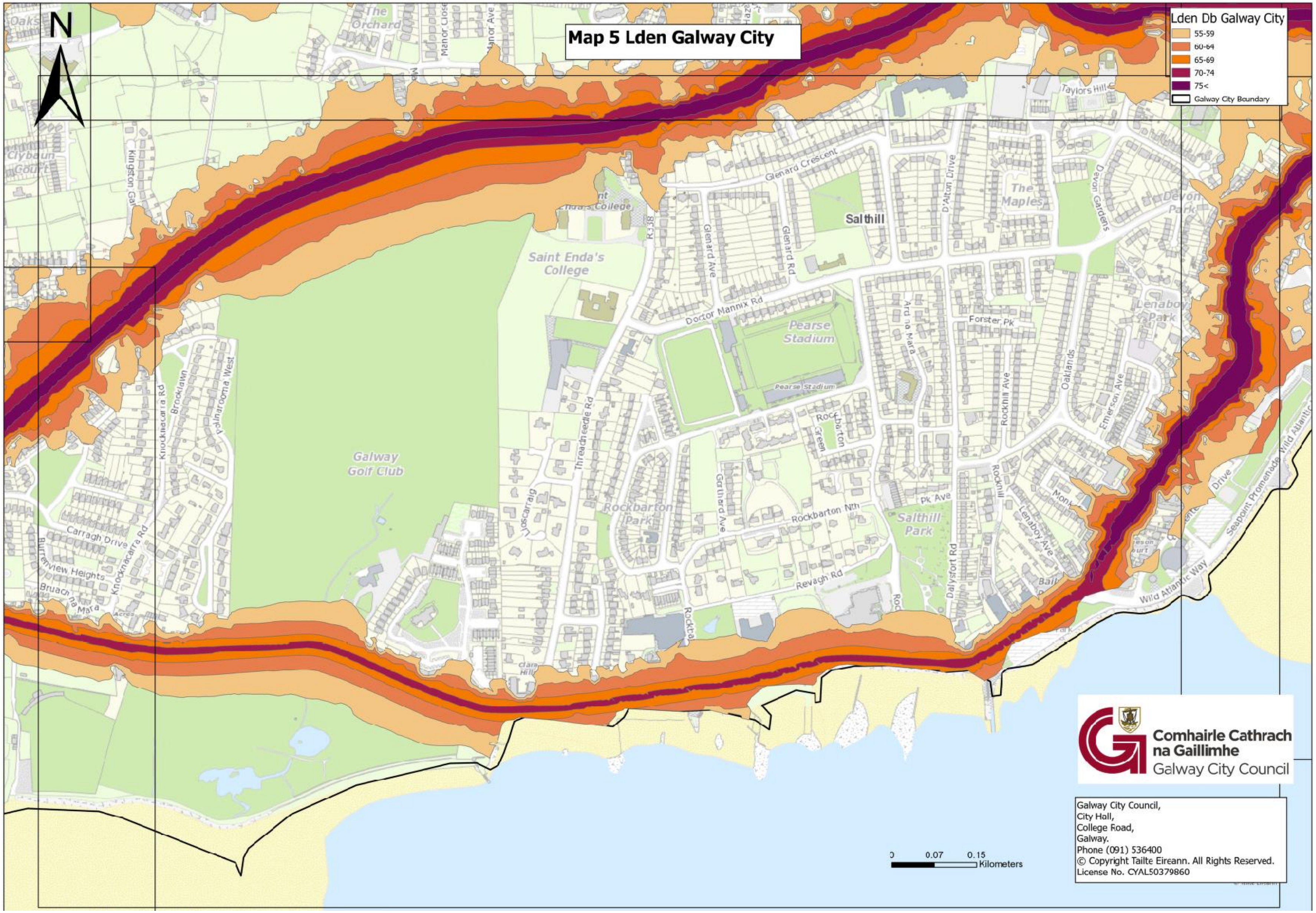
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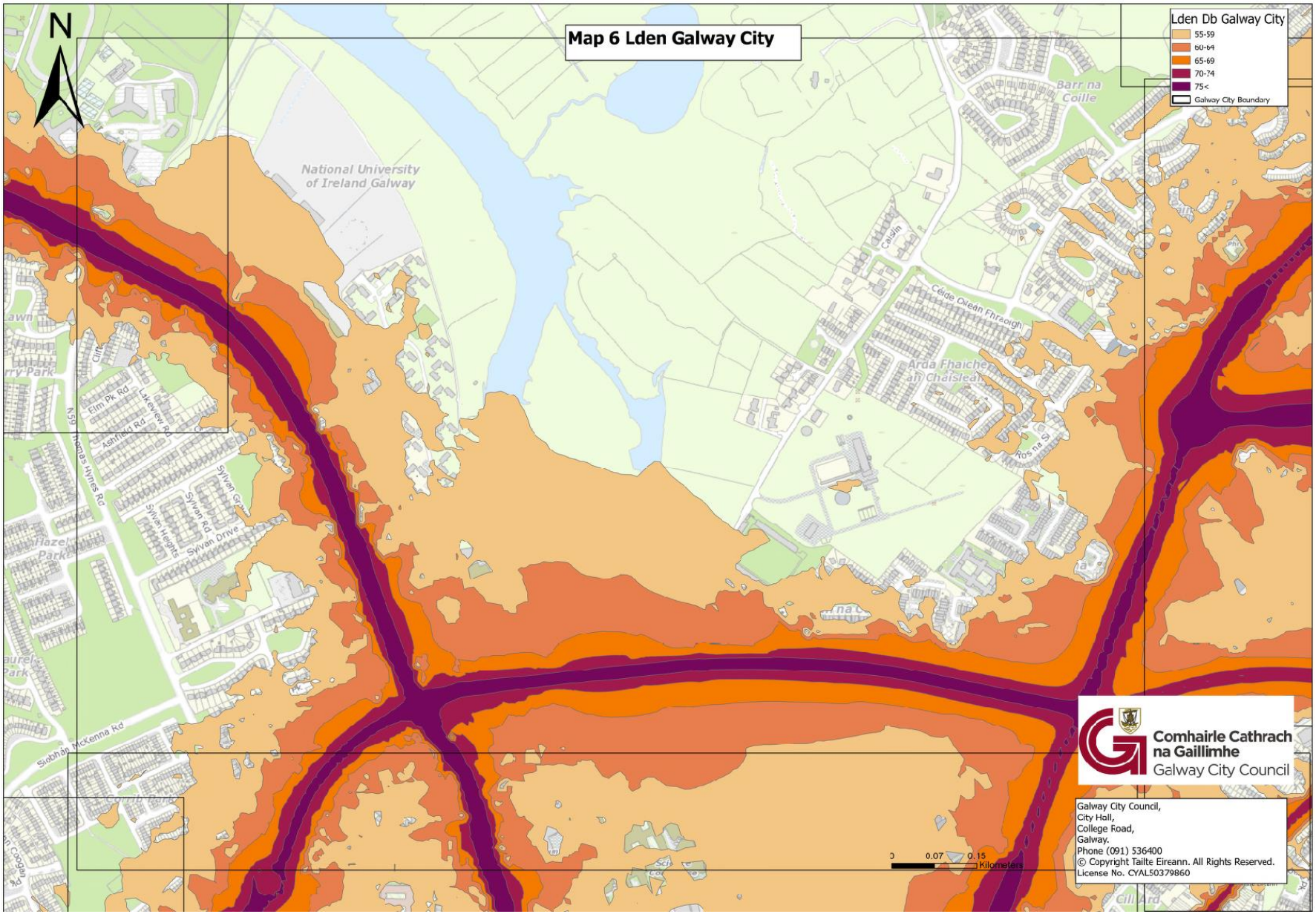
Salthill
Saint Enda's College
Galway Golf Club
Pearse Stadium
Rockbarton Park
Salthill Park
Doctor Mannix Rd
Glenard Crescent
Threadneedle Rd
Wild Atlantic Way
Seapoint Promenade
Knocknacarra Rd
Carragh Drive
Burrenview Heights
Taylors Hill
The Maples
Lenaboy Park
Devon Park
Forster Pk
Revagh Rd
Rockbarton Nth
Dalysfort Rd
D'Alton Drive


Map 6 Lden Galway City
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Barr na Coille
Céide Oirean Fhraoigh
Arda Fhaiche an Chaisleain
Ros na Si
Elm Pk Rd
Ashfield Rd
Lakeview Rd
Sylvan Rd
Sylvan Drive
Sylvan Heights
Sylvan Gr
Thomas Hynes Rd
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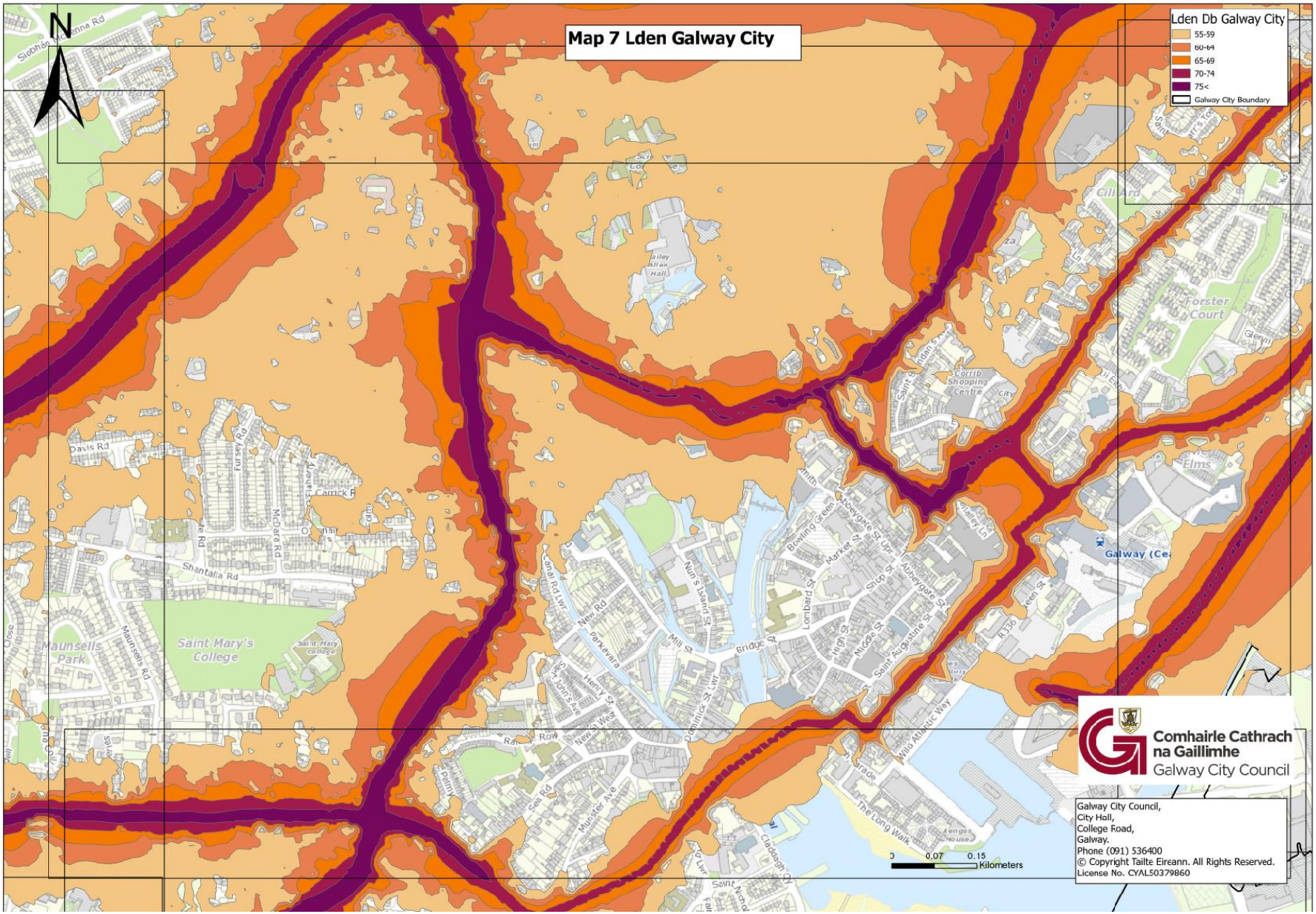
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Forster Court
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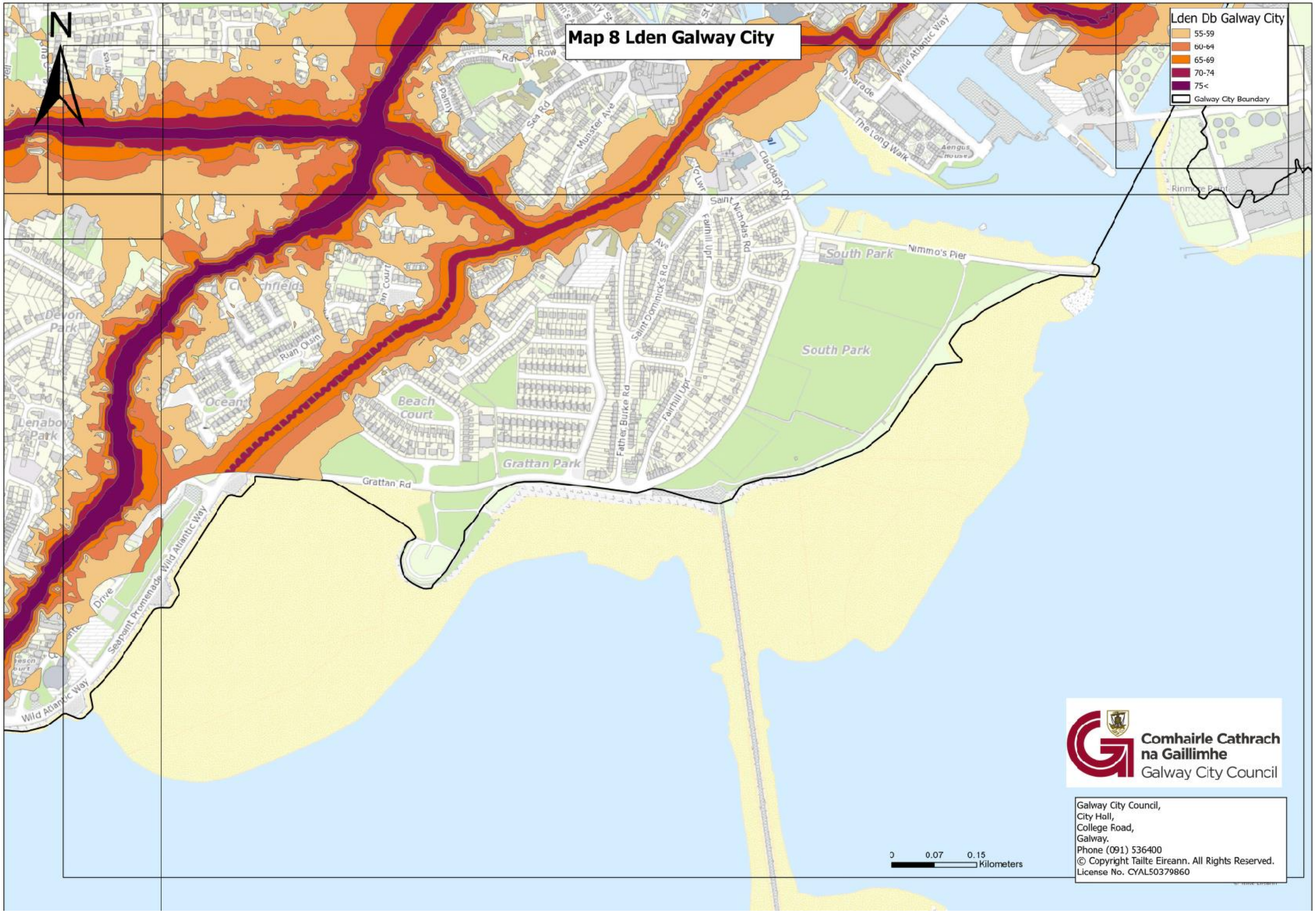
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Galway City Boundary
South Park
Nimmo's Pier
Grattan Park
Grattan Rd
Beach Court
Claddagh Qy
The Long Walk
Wild Atlantic Way
Seapoint Promenade
Father Burke Rd
Fairhill Upr
Saint Nicholas Rd
Munster Ave
Sea Rd
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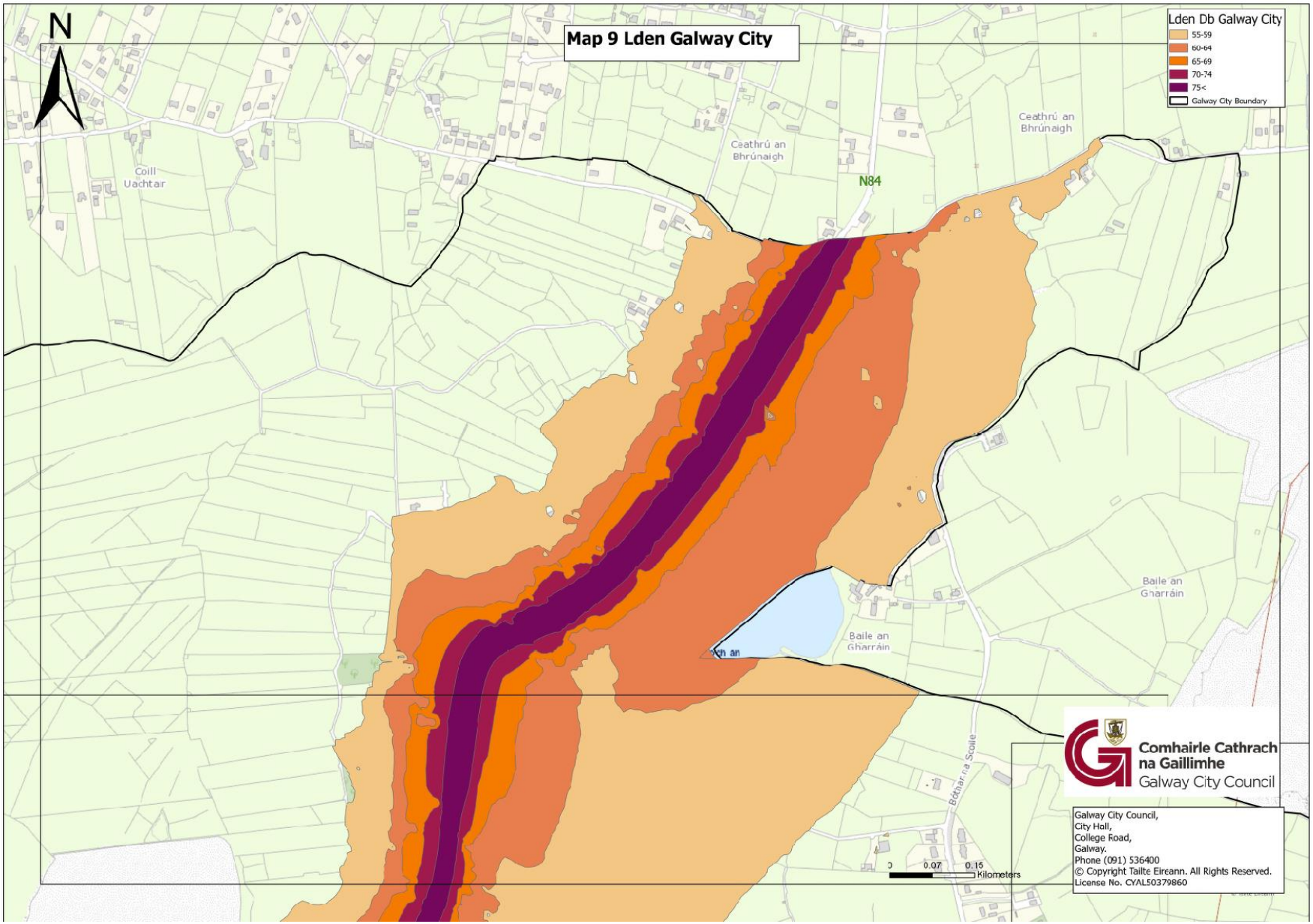
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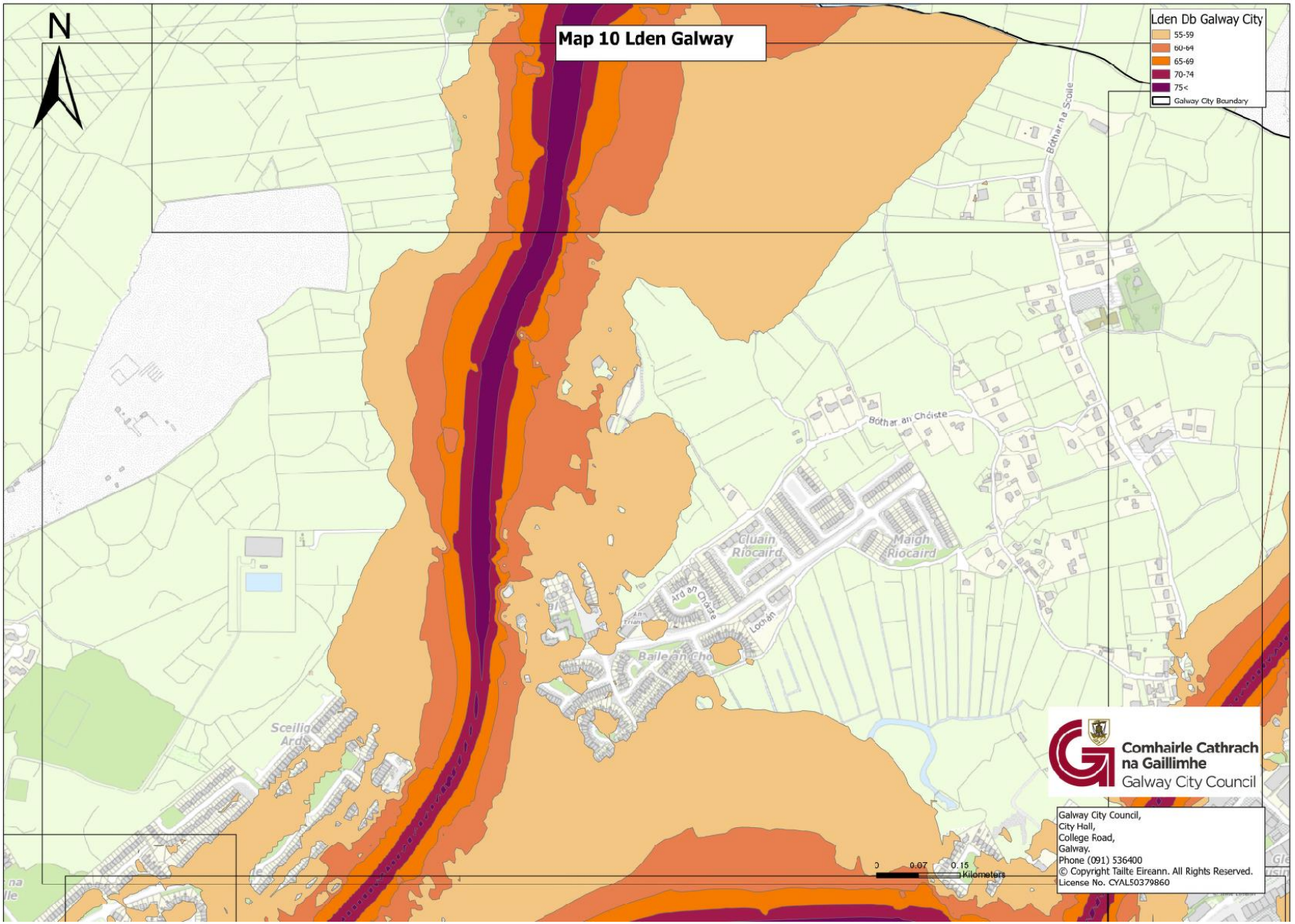
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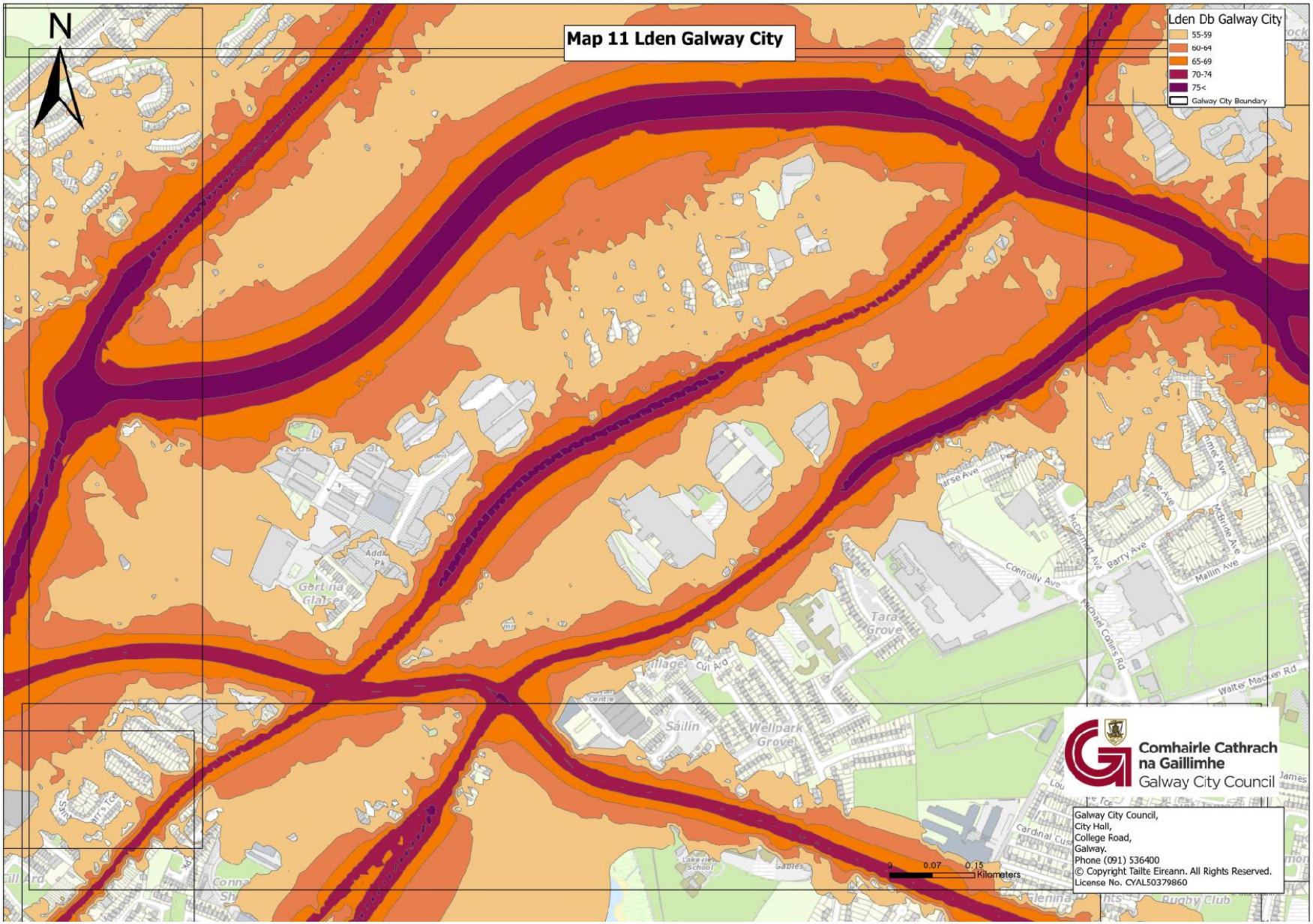
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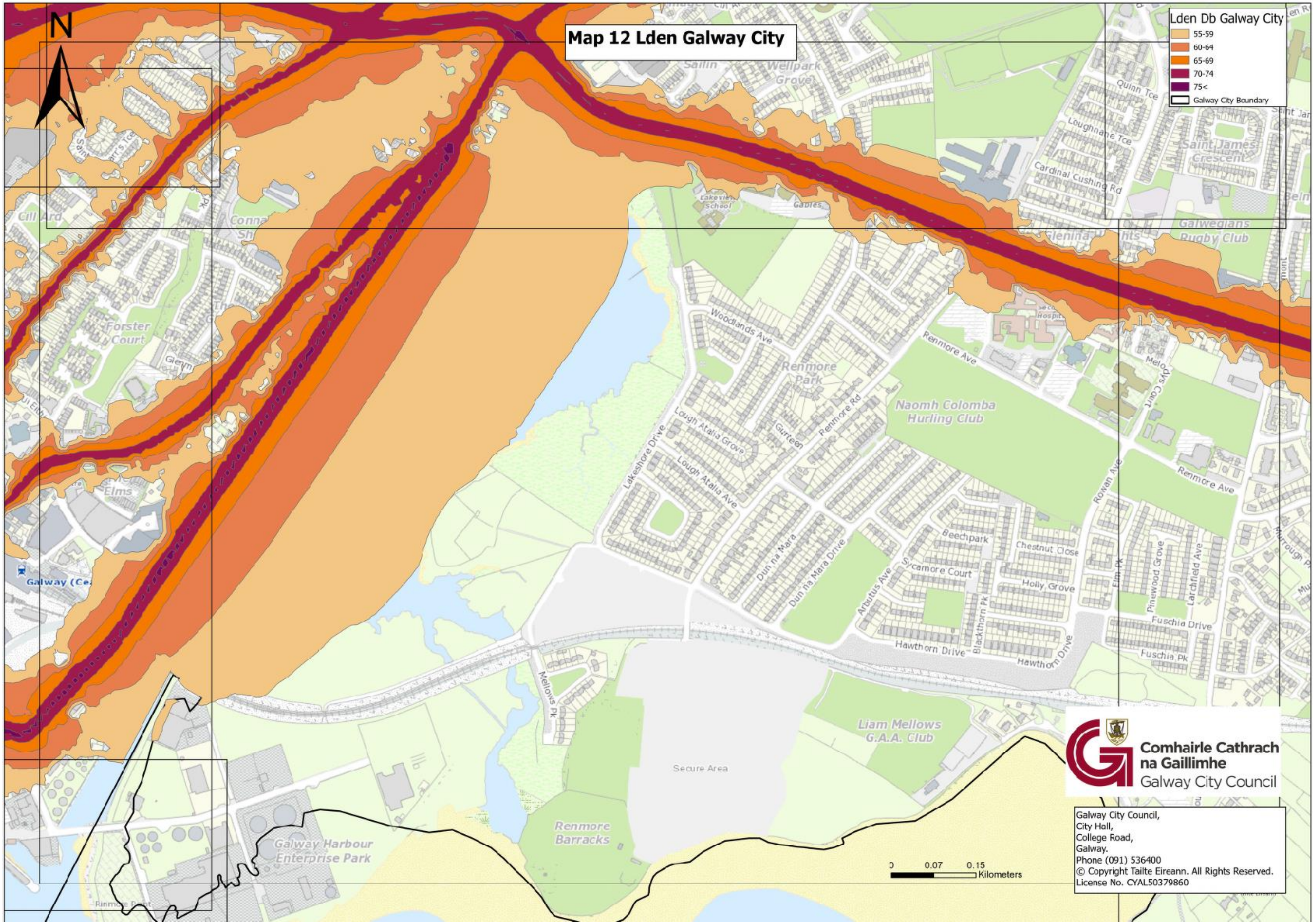
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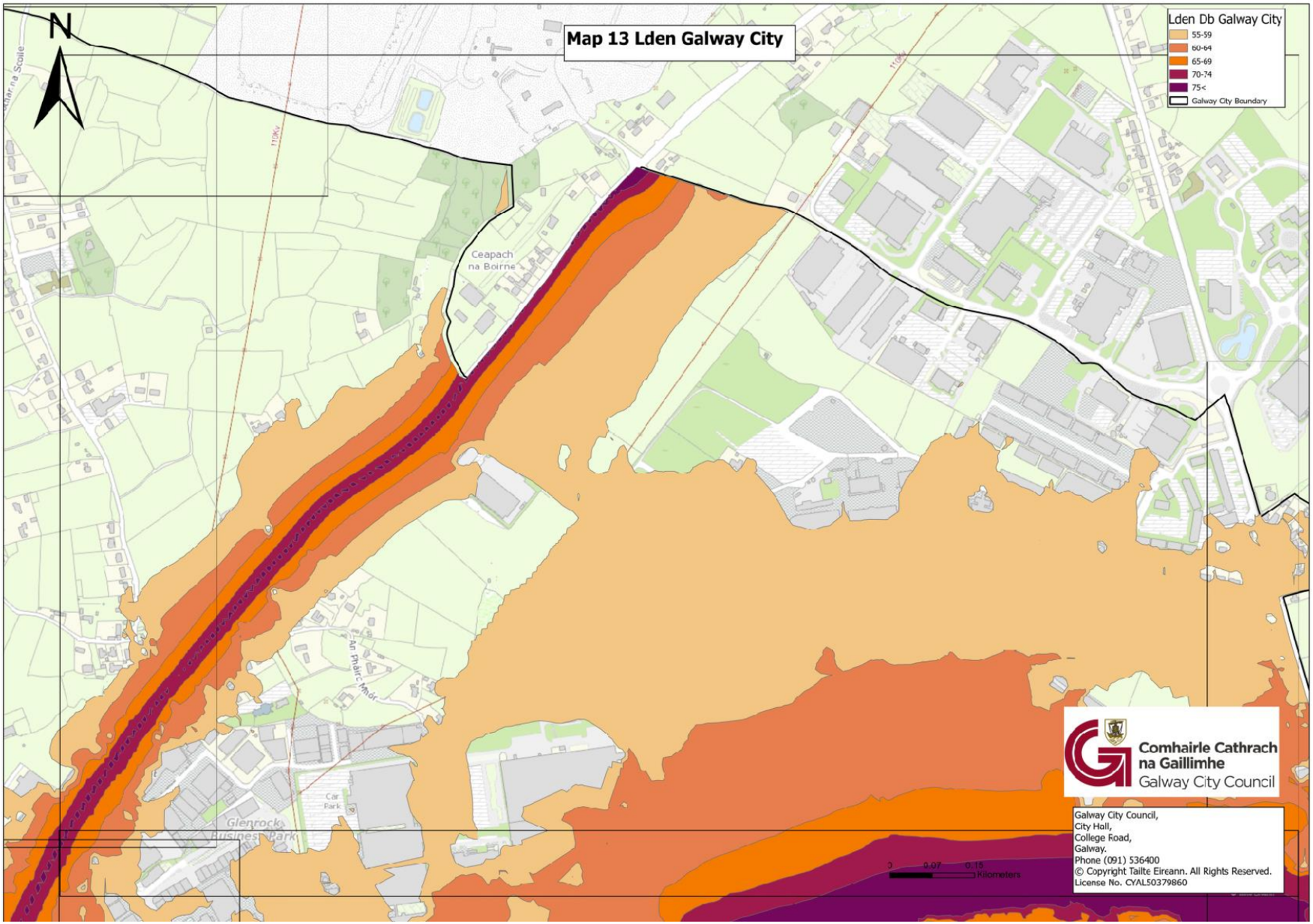
Renmore Park
Naomh Colomba Hurling Club
Liam Mellows G.A.A. Club
Renmore Barracks
Galway Harbour Enterprise Park
Secure Area
Forster Court
Saint James Crescent
Galwegians Rugby Club
Renmore Ave
Woodlands Ave
Lakeshore Drive
Lough Atalia Grove
Lough Atalia Ave
Dun na Mara
Dun na Mara Drive
Beechpark
Chestnut Close
Sycamore Court
Holly Grove
Hawthorn Drive
Fuschia Drive
Fuschia Pk
Mellows Pk
Cardinal Cushing Rd
Quinn Tce
Loughnane Tce
Wellpark Grove
Elms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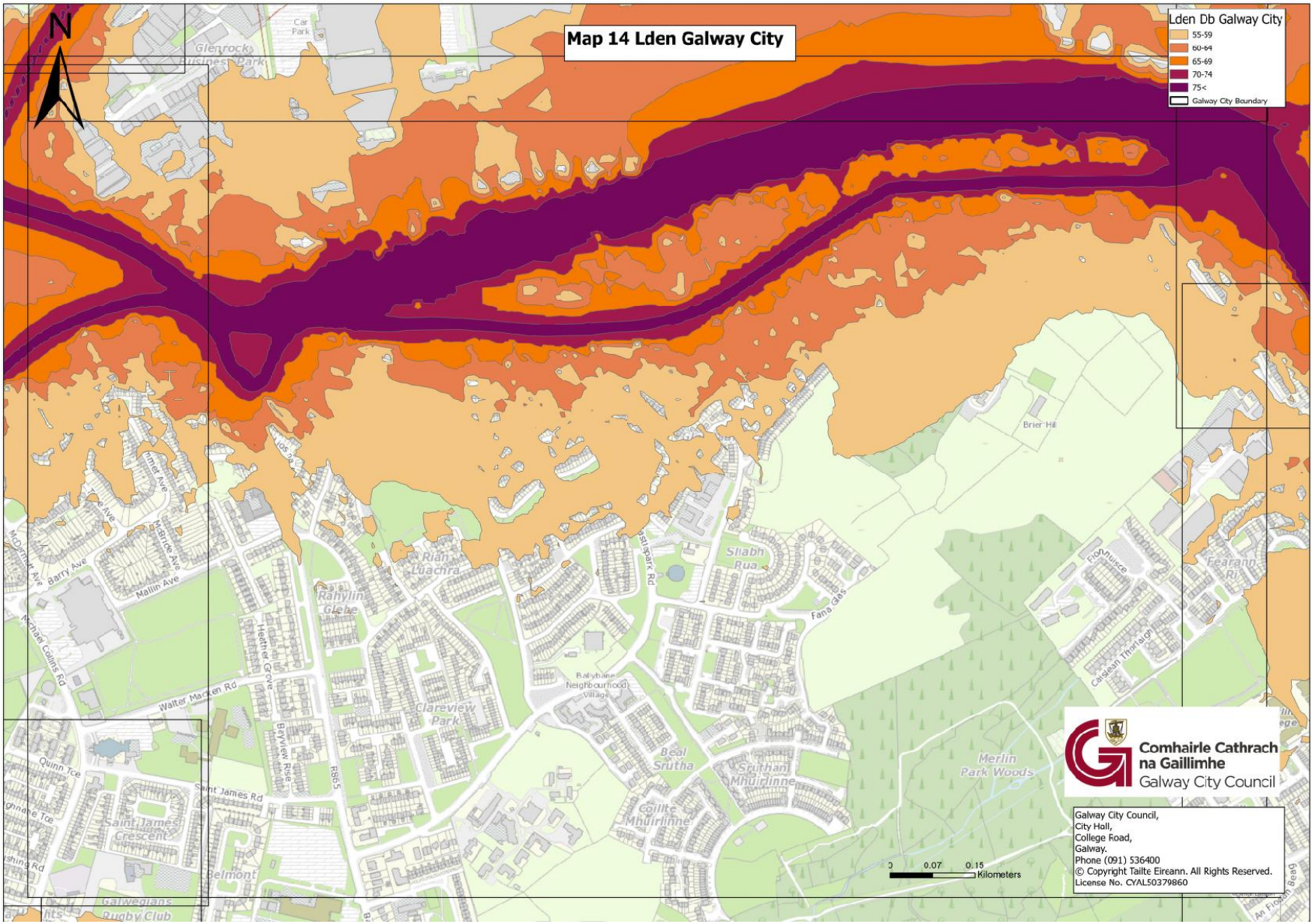
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Glenrock Business Park
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Brier Hill
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Rian Luachra
Rahylin Glae
Clareview Park
Ballybane Neighbourhood Village
Beal Sruthá
Sruthán Mhuirlinne
Coillte Mhuirlinne
Merlin Park Woods
Fearann Rí
Saint James Crescent
Belmont
Galwegians Rugby Club
Walter Macken Rd
Saint James Rd
Quinn Tce
Barry Ave
Mallin Ave
Michael Collins Rd
Heatherd Grove
Bayview Rise
R865
Fana Glas
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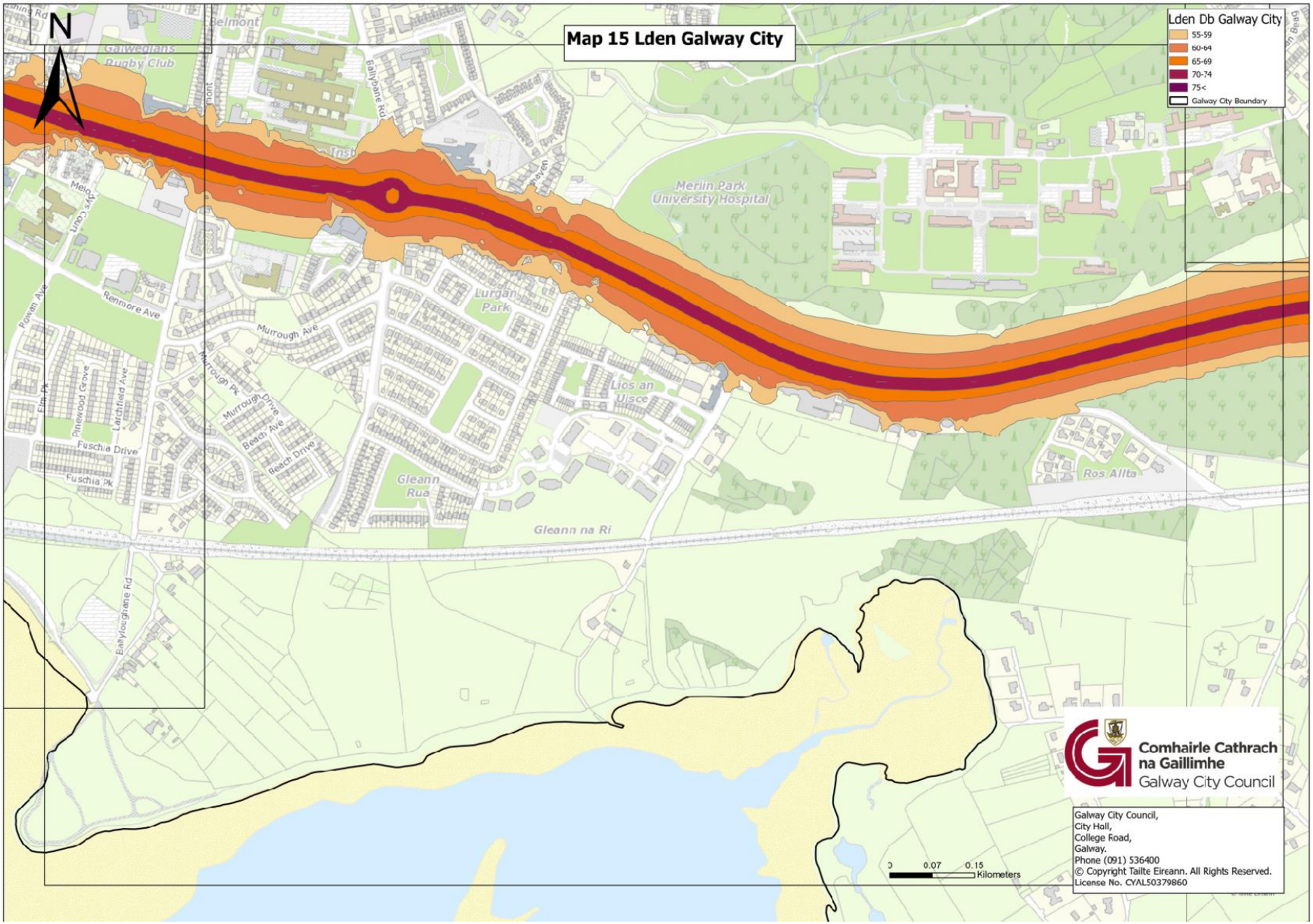
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Gleann Rua
Gleann na Ri
Murrough Ave
Renmore Ave
Fuschia Drive
Beach Drive
Ballybane Rd
Belmont
Galwegians Rugby Club
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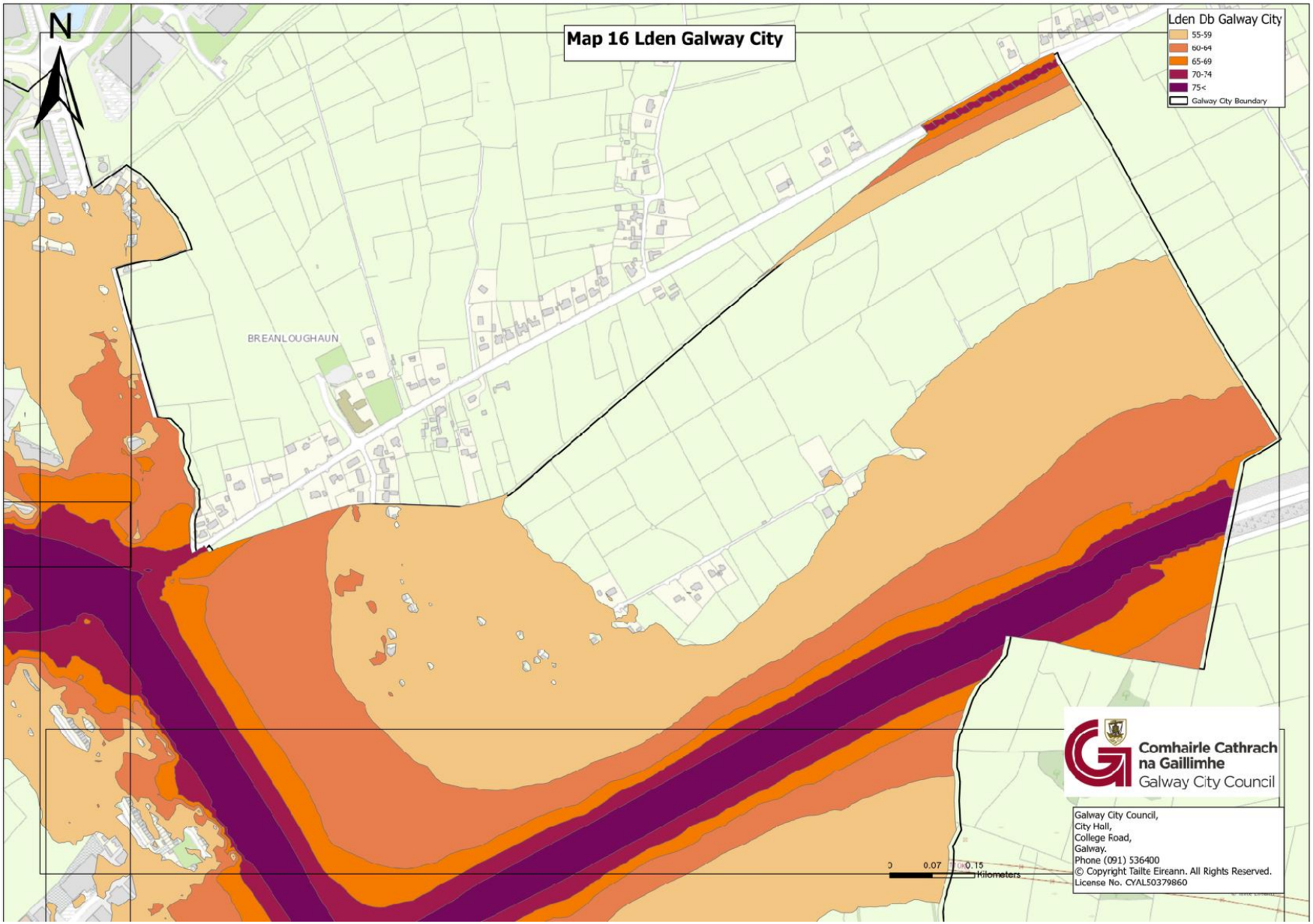
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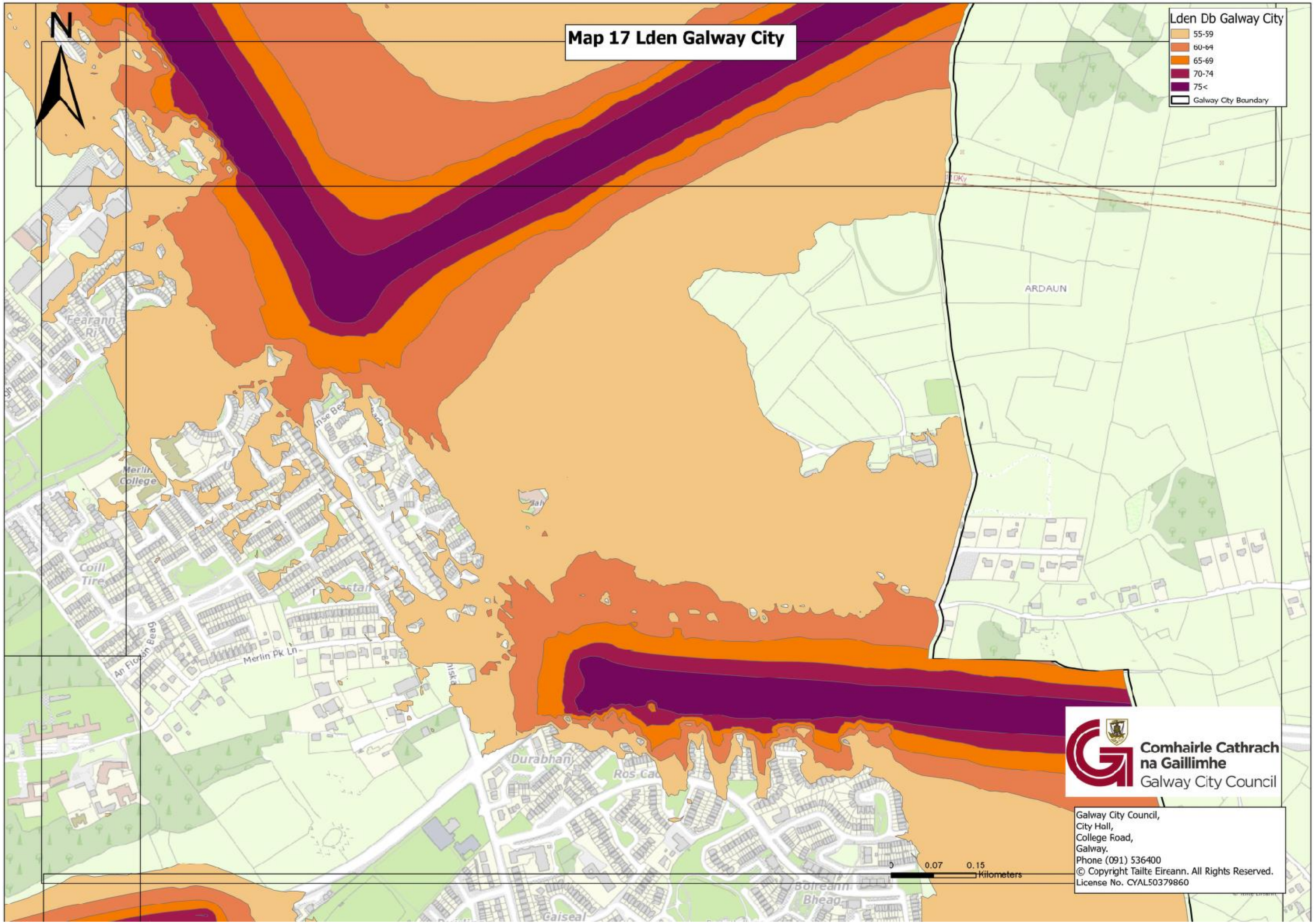
Map 17 Lden Galway City
N
Lden Db Galway City
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60-64
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75<
Galway City Boundary
ARDAUN
Fearann Rí
Merlin College
Coill Tíre
Merlin Pk Ln
Durabhán
Comhairle Cathrach
na Gaillimhe
Galway City Council
Galway City Council,
City Hall,
College Road,
Galway.
Phone (091) 536400
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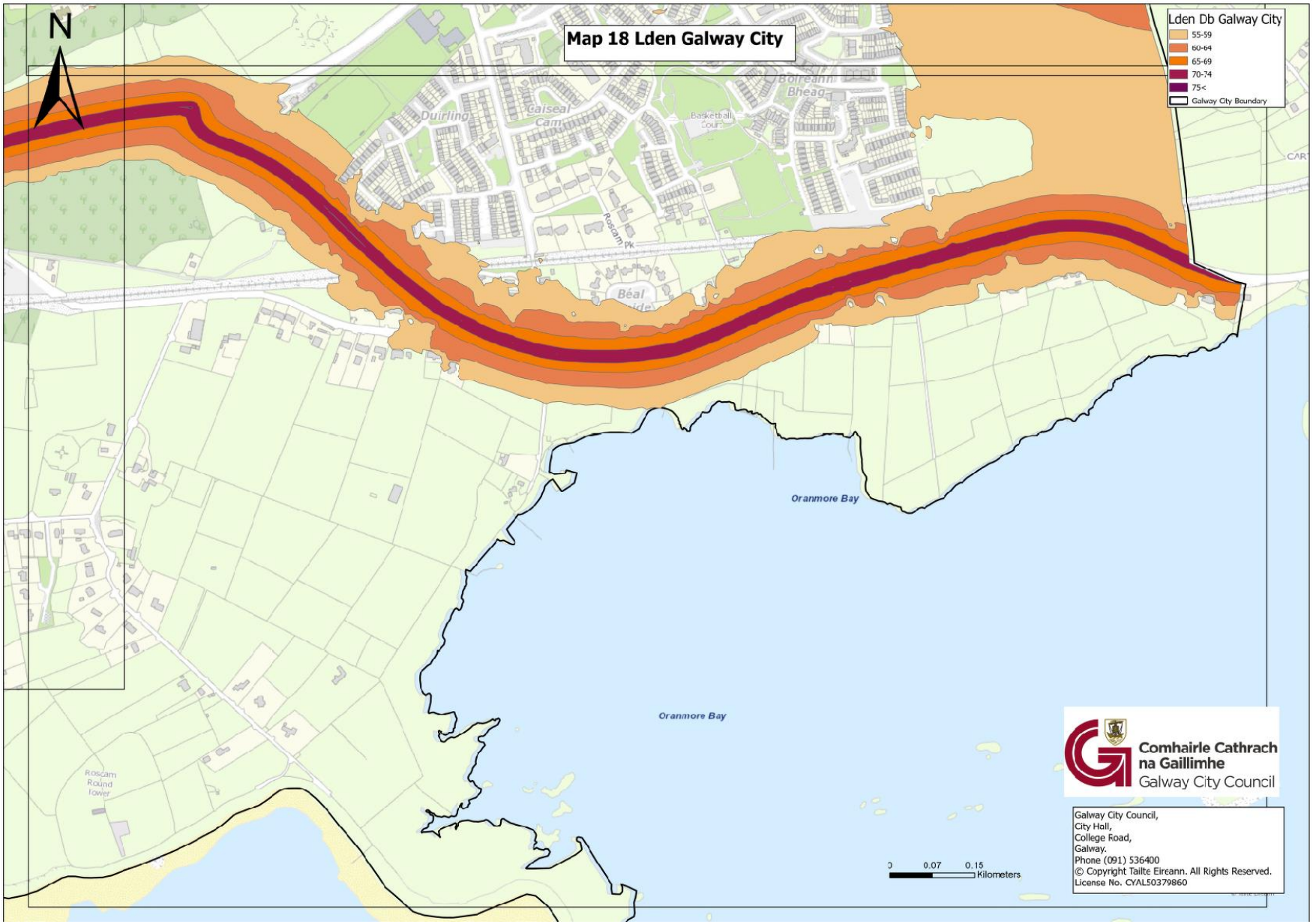
License No. CYAL50379860
0 0.07 0.15
Kilometers


Map 18 Lden Galway City
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Galway City Boundary
Duirling
Gaiseal Cam
Basketball Court
Boireann Bheag
Roscam Pk
Béal
Oranmore Bay
Oranmore Bay
Roscam Round Tower
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Kilometers
Comhairle Cathrach na Gaillimhe
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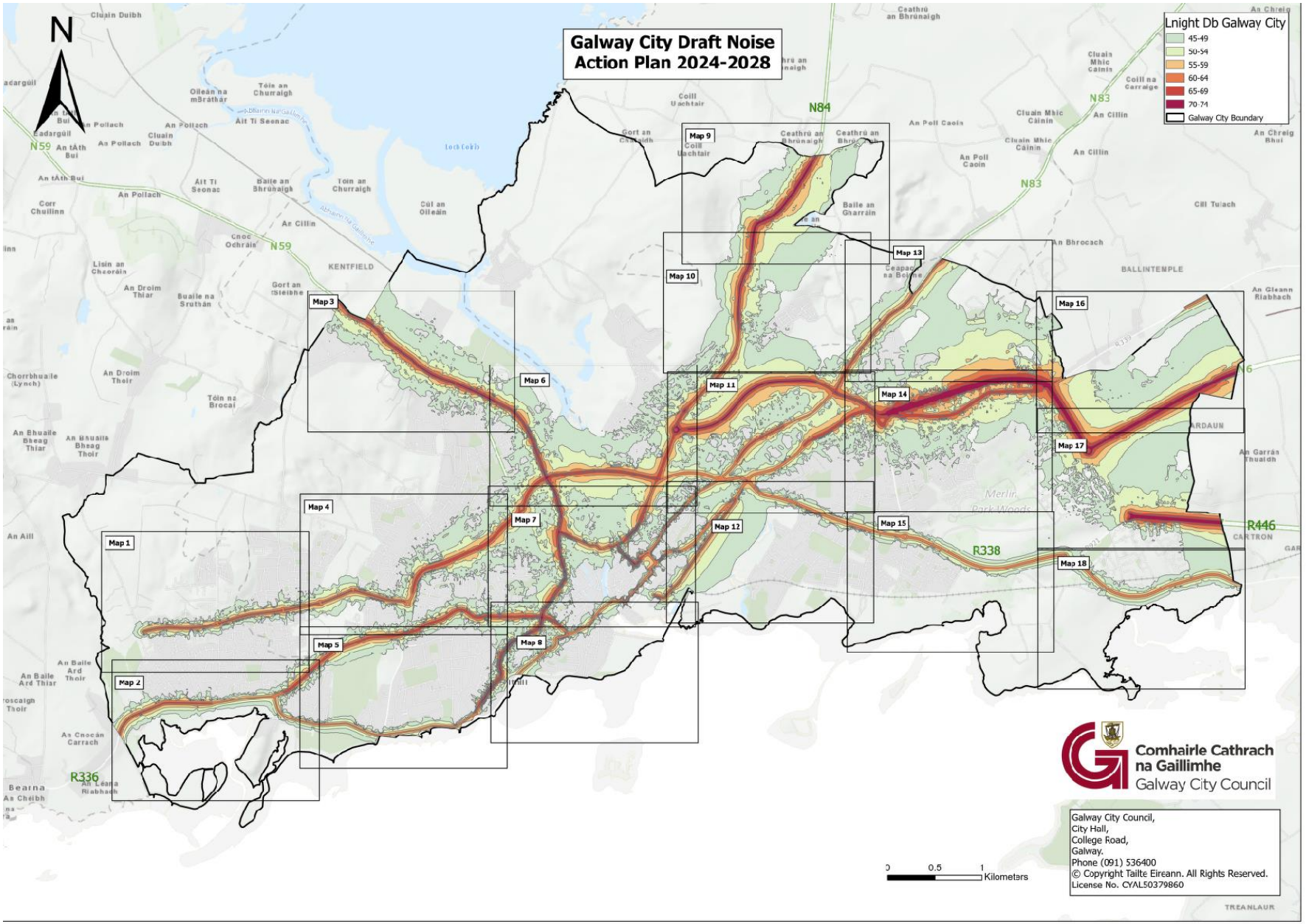
Galway City Draft Noise Action Plan 2024-2028
Lnight Db Galway City
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50-54
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60-64
65-69
70-74
Galway City Boundary
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Map 1
Map 2
Map 3
Map 4
Map 5
Map 6
Map 7
Map 8
Map 9
Map 10
Map 11
Map 12
Map 13
Map 14
Map 15
Map 16
Map 17
Map 18
N84
N83
N59
N6
R338
R336
R446
KENTFIELD
BALLINTEMPLE
CARTRON
TREANLAUR
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Comhairle Cathrach na Gaillimhe
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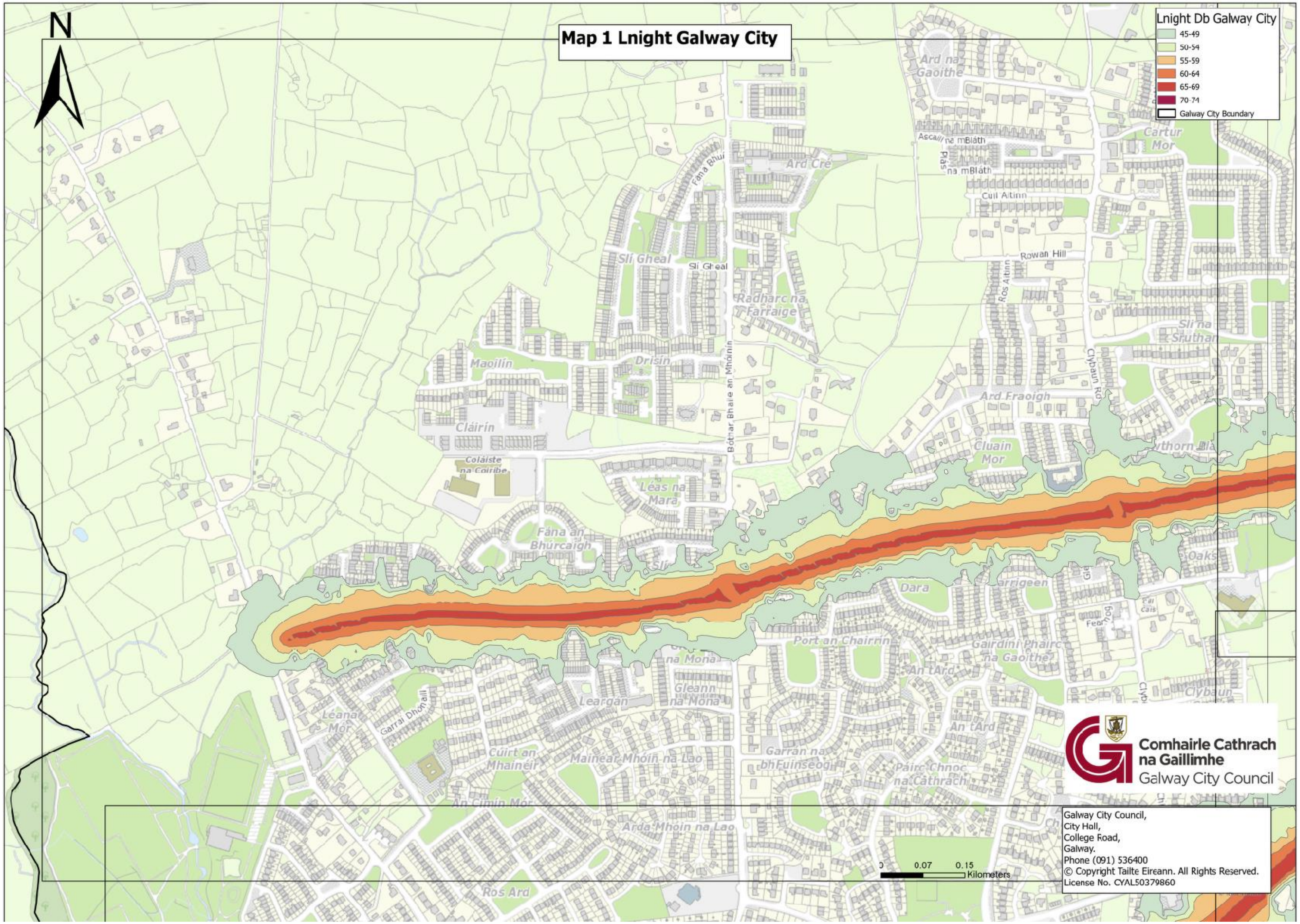
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Map 1 Lnight Galway City
Lnight Db Galway City
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Galway City Boundary
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Comhairle Cathrach na Gaillimhe
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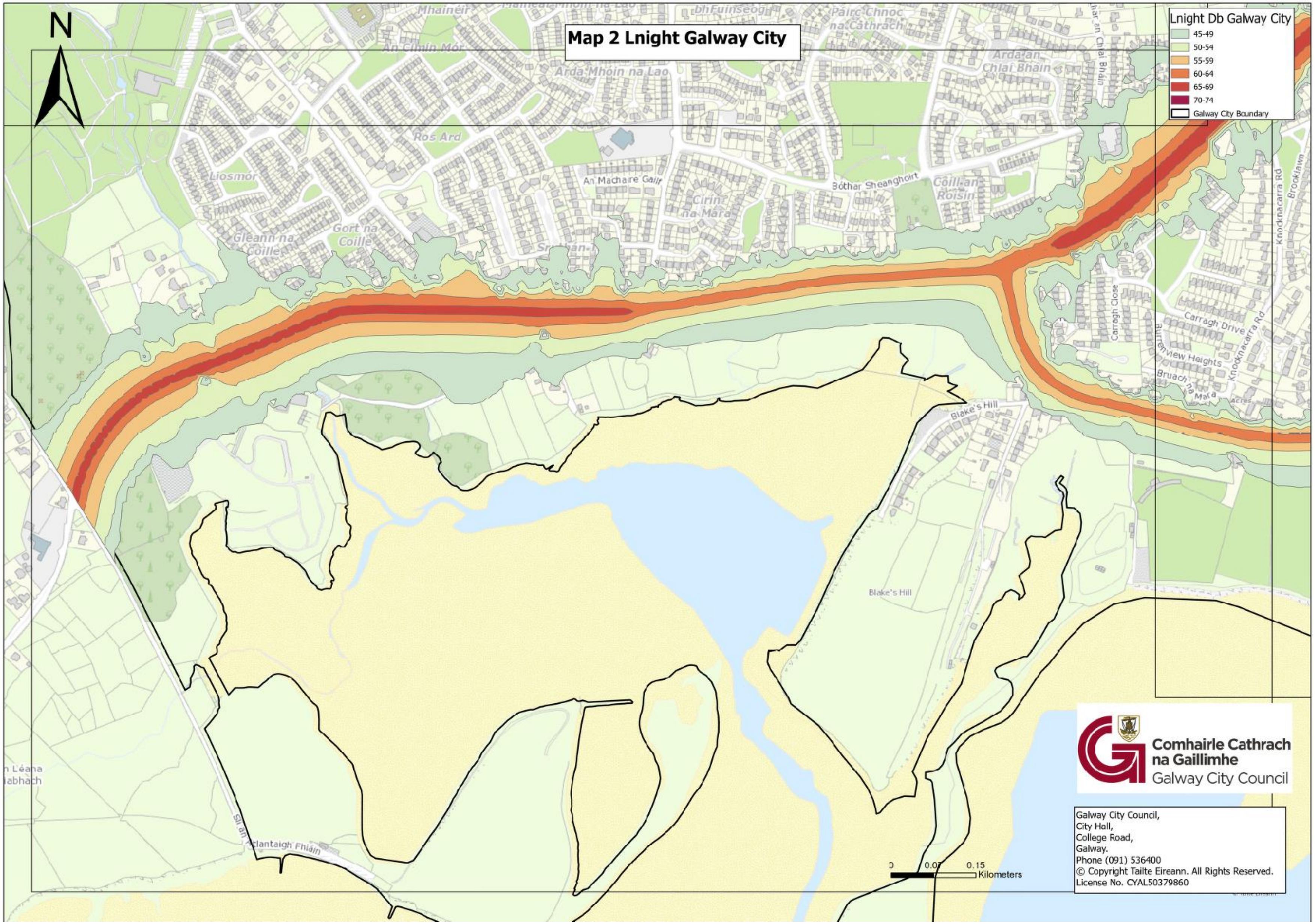
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Galway City Boundary
Ros Ard
Liosmor
An Machaire Gaill
Bóthar Sheanghort
Cirin na Mara
Gleann na Coille
Gort na Coille
An Cimin Mor
Arda Mhoin na Lao
Pairc Chnoc na Cathrach
Arda an Chlai Bhain
Coill an Roisin
Knocknacarra Rd
Brooklawn
Carragh Close
Carragh Drive
Burrenview Heights
Bruach na Mara
Blake's Hill
Blake's Hill
Kilometers
0.15
Comhairle Cathrach na Gaillimhe
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Galway City Council,
City Hall,
College Road,
Galway.
Phone (091) 536400
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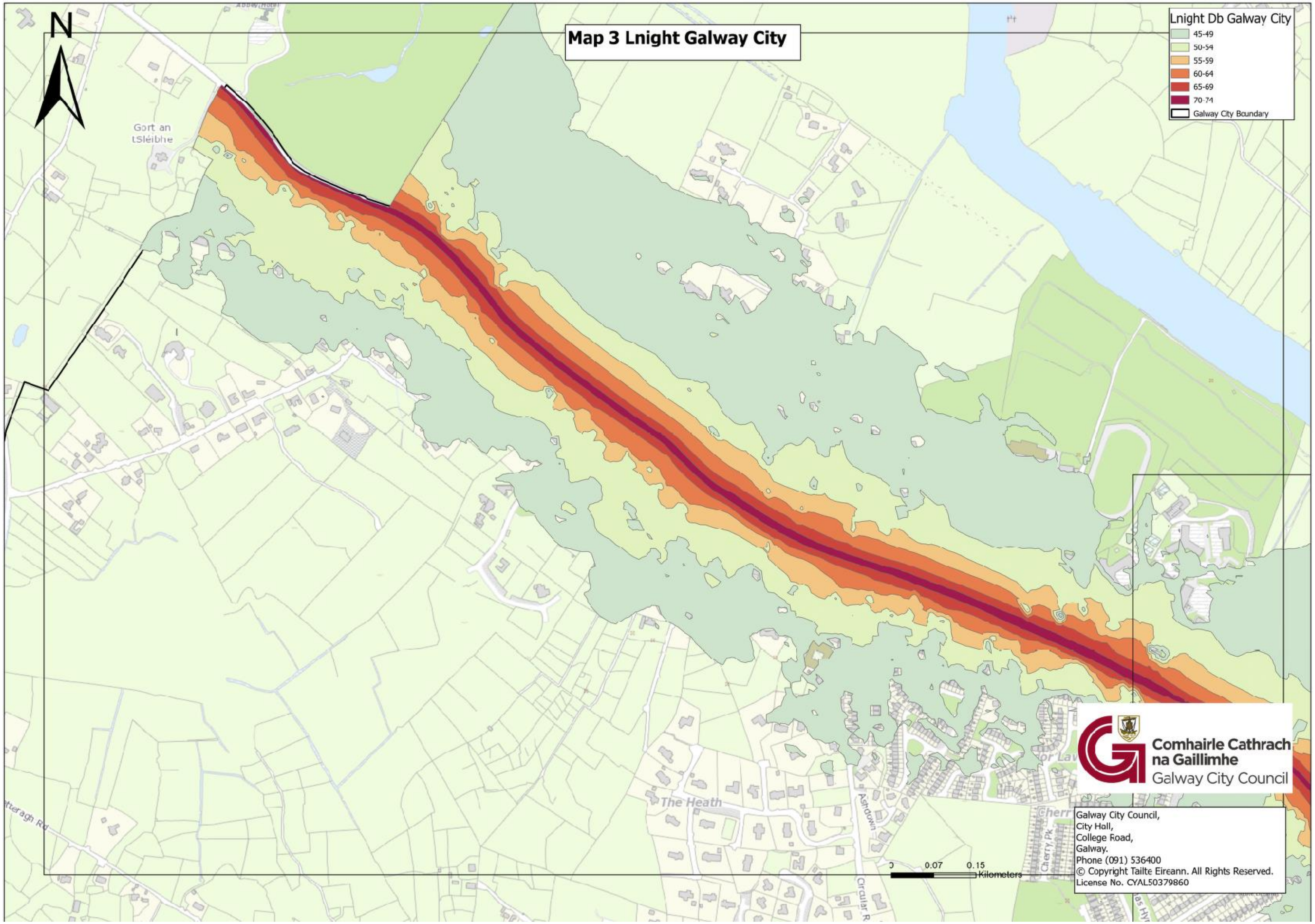
Map 3 Lnight Galway City
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Lnight Db Galway City
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70-74
Galway City Boundary
Gort an tSléibhe
The Heath
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Comhairle Cathrach na Gaillimhe Galway City Council
Galway City Council,
City Hall,
College Road,
Galway.
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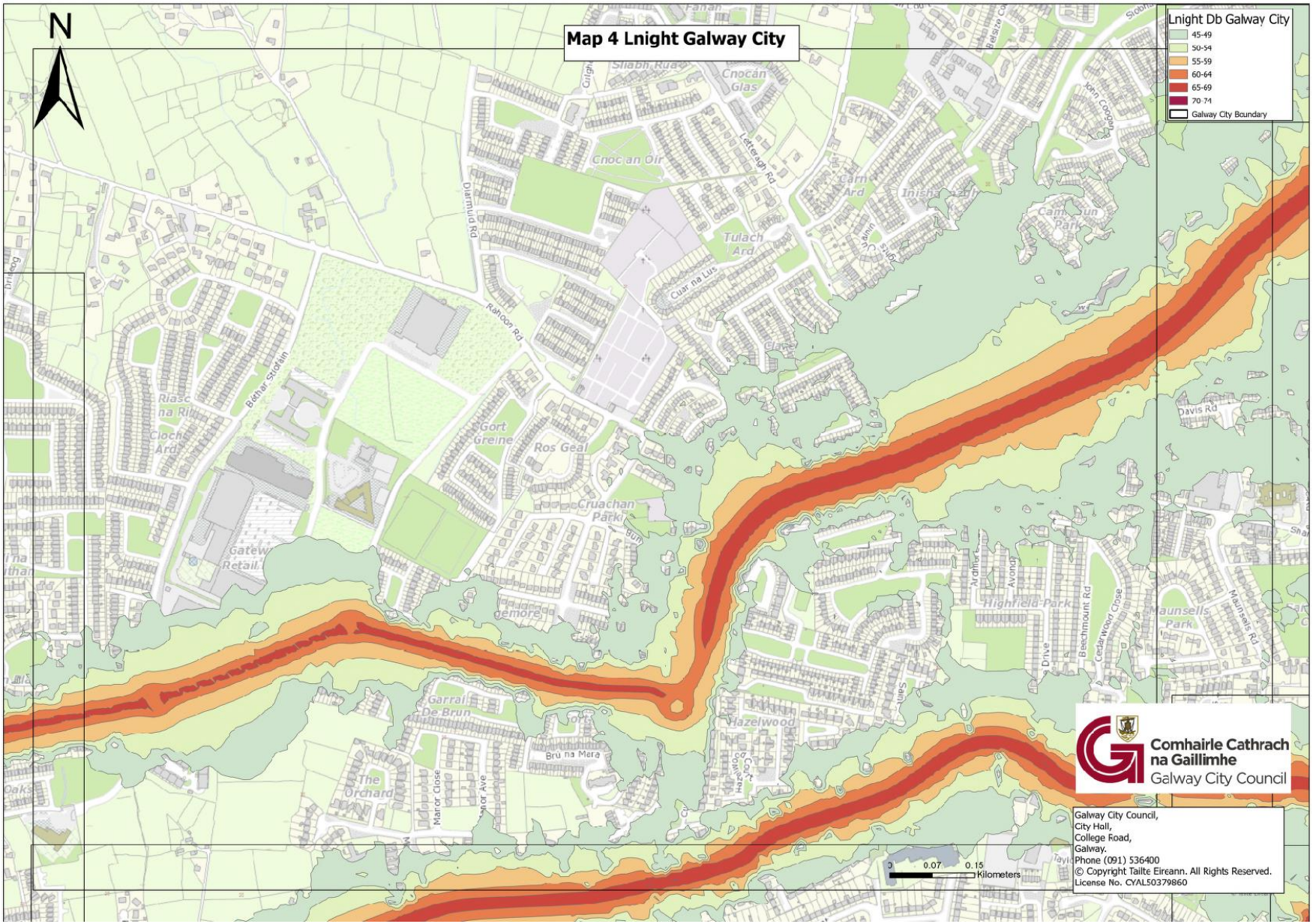
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Galway City Boundary
Cnoc an Oir
Tulach Ard
Cuan na Lus
Rahoon Rd
Gort Greine
Ros Geal
Cruachan Parki
Highfield Park
Maunsells Park
Hazelwood
Garraí De Brún
Bru na Mera
The Orchard
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Galway.
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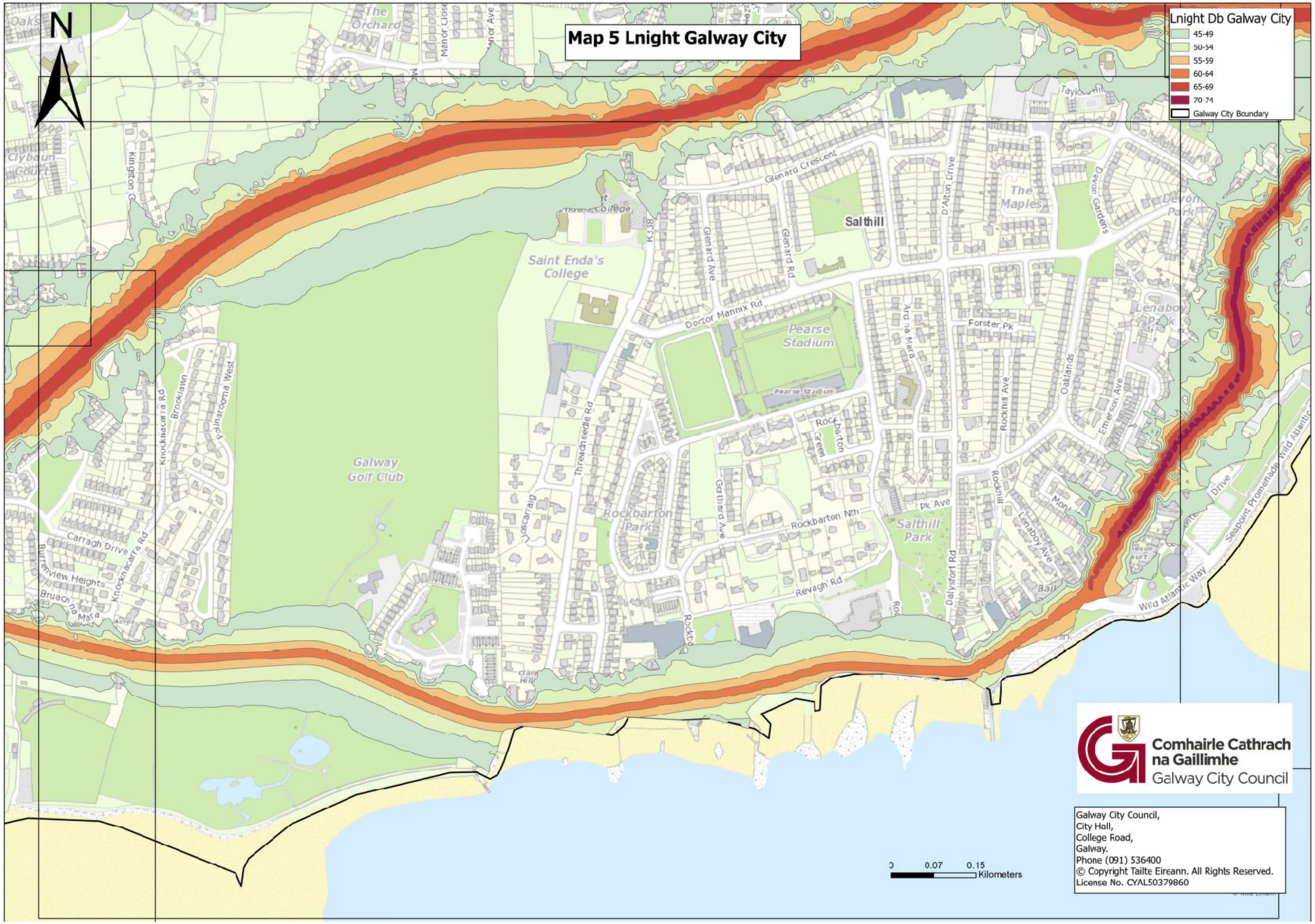
Map 5 Lnight Galway City
N
Lnight Db Galway City
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Galway City Boundary
Salthill
Glenard Crescent
Glenard Ave
Glenard Rd
D'Alton Drive
The Maples
Devon Gardens
Devon Park
Saint Enda's College
Doctor Mannix Rd
Pearse Stadium
Ard na Mara
Forster Pk
Oaklands
Rockhill Ave
Emerson Ave
Lenaboy Pk
Galway Golf Club
Threadneedle Rd
Rockbarton Park
Gothard Ave
Rockbarton Nth
Salthill Park
Revagh Rd
Dalysfort Rd
Lenaboy Ave
Pk Ave
Seapoint Promenade
Wild Atlantic Way
Knocknacarra Rd
Brooklawn
Carragh Drive
Burrenview Heights
Bruach na Mara
Clybaun Court
Kingston
The Orchard
Manor Close
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Galway.
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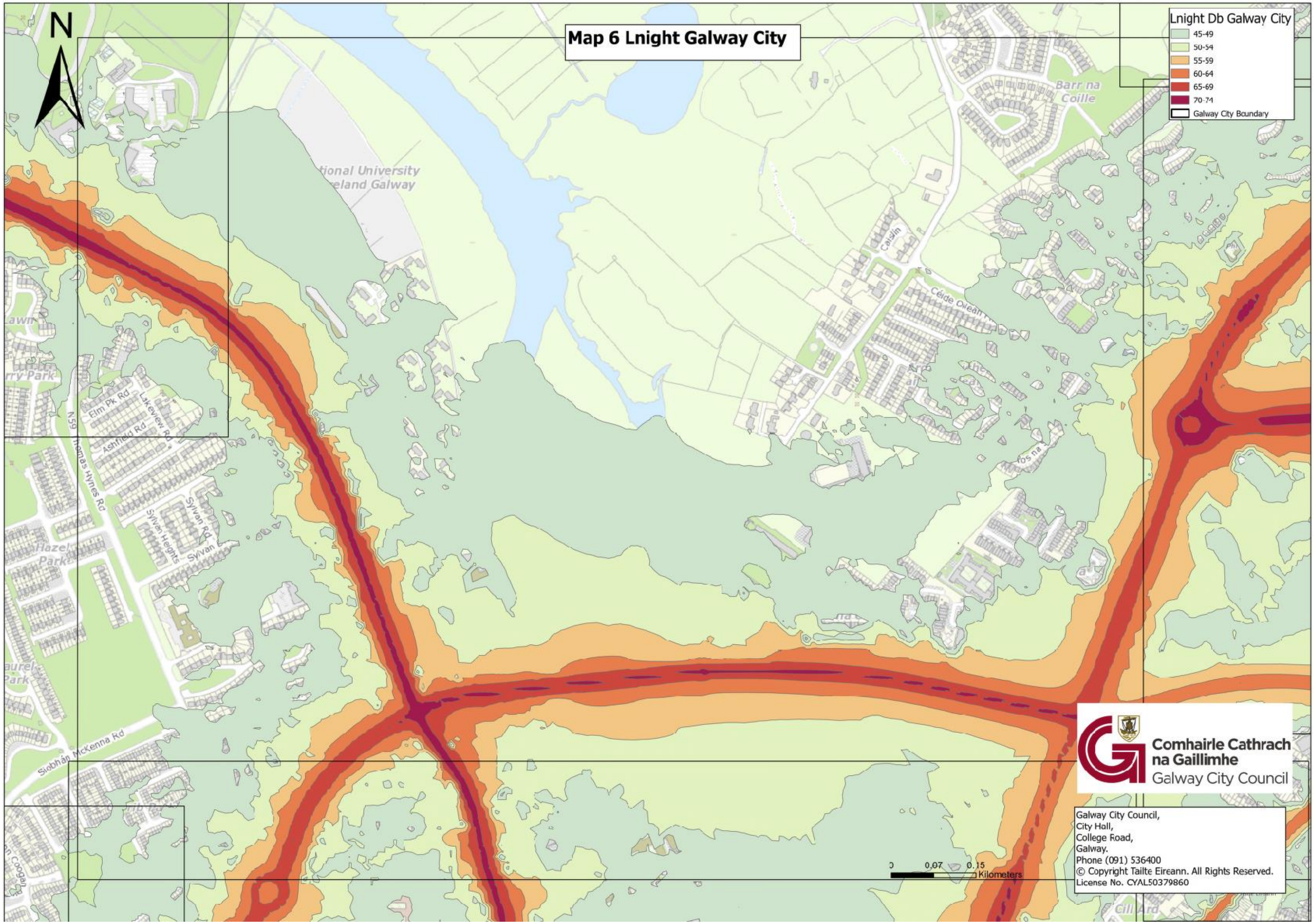
Map 6 Lnight Galway City
Lnight Db Galway City
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Galway City Boundary
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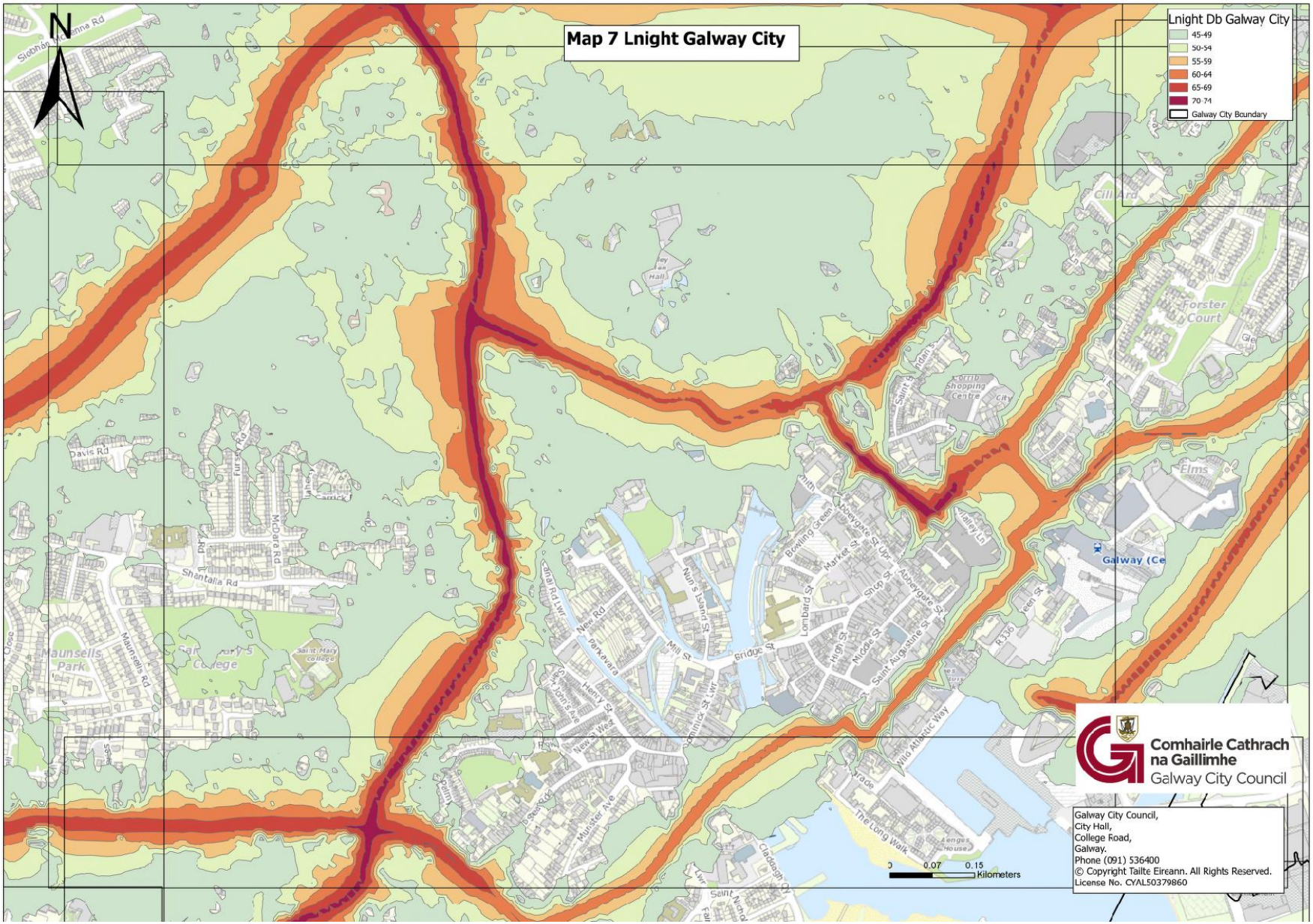
Map 7 Lnight Galway City
Lnight Db Galway City
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Galway City Boundary
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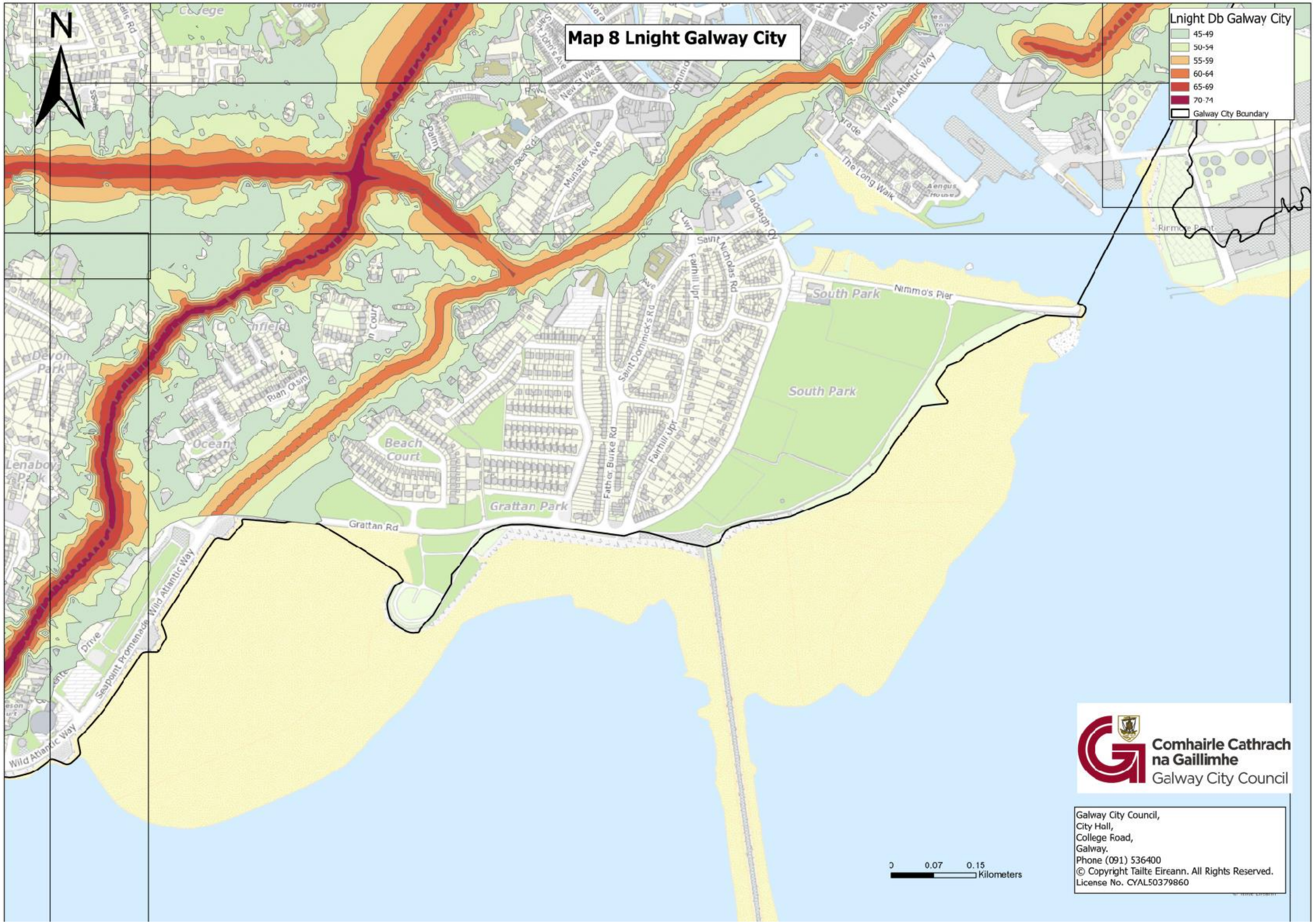
N
Map 8 Lnight Galway City
Lnight Db Galway City
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65-69
70-74
Galway City Boundary
South Park
Nimmo's Pier
Grattan Park
Grattan Rd
Beach Court
Father Burke Rd
Saint Dominick's Rd
Saint Nicholas Rd
Fairhill Upr
Claddagh Quay
The Long Walk
Munster Ave
Rian Oisin
Seapoint Promenade
Wild Atlantic Way
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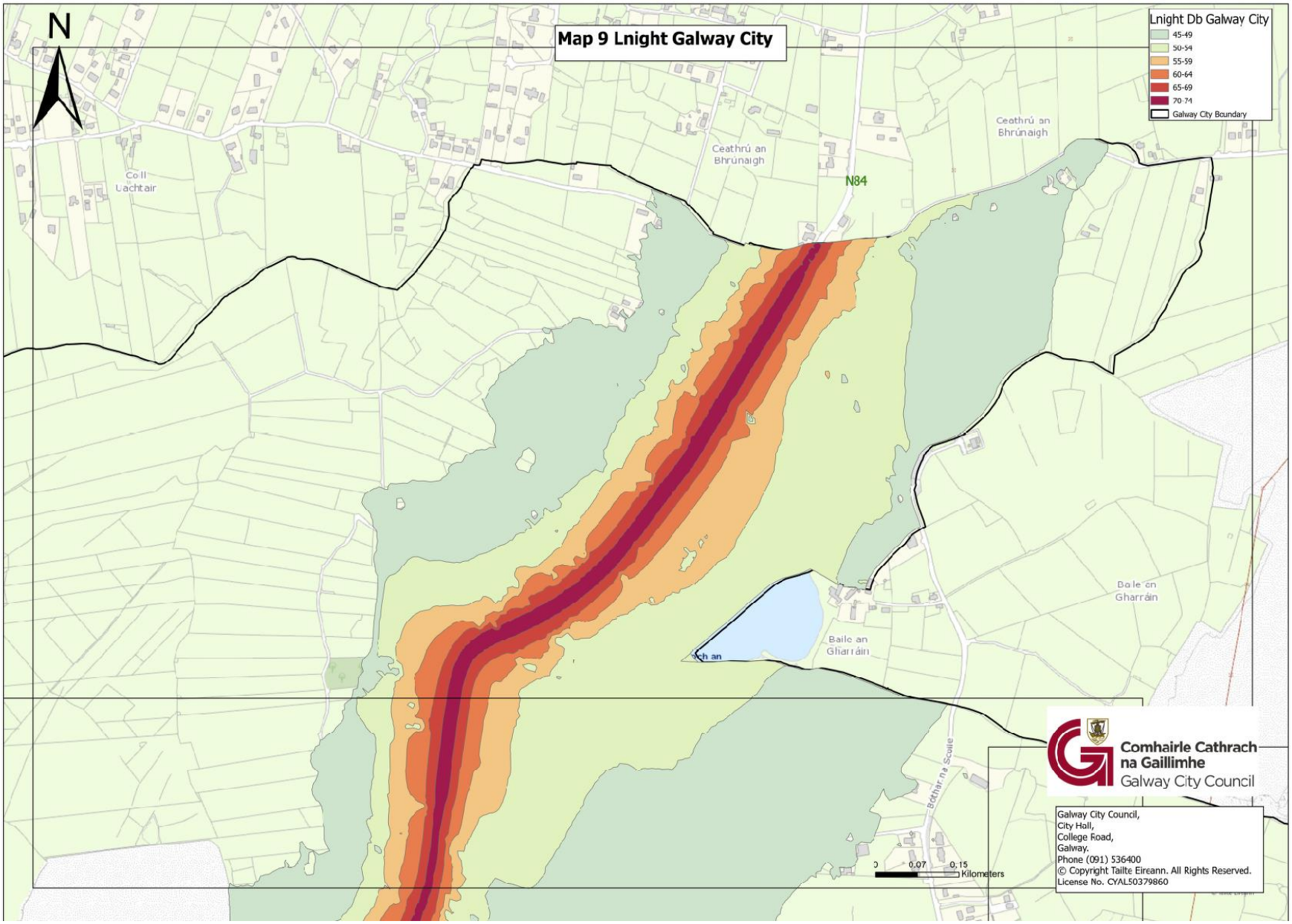
Map 9 Lnight Galway City
N
Lnight Db Galway City
45-49
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65-69
70-74
Galway City Boundary
Ceathrú an Bhrúnaigh
Ceathrú an Bhrúnaigh
Coill Lachtair
N84
Baile an Gharráin
Baile an Gliarráin
Bóthar na Scuile
0 0.07 0.15
Kilometers
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Galway City Council,
City Hall,
College Road,
Galway.
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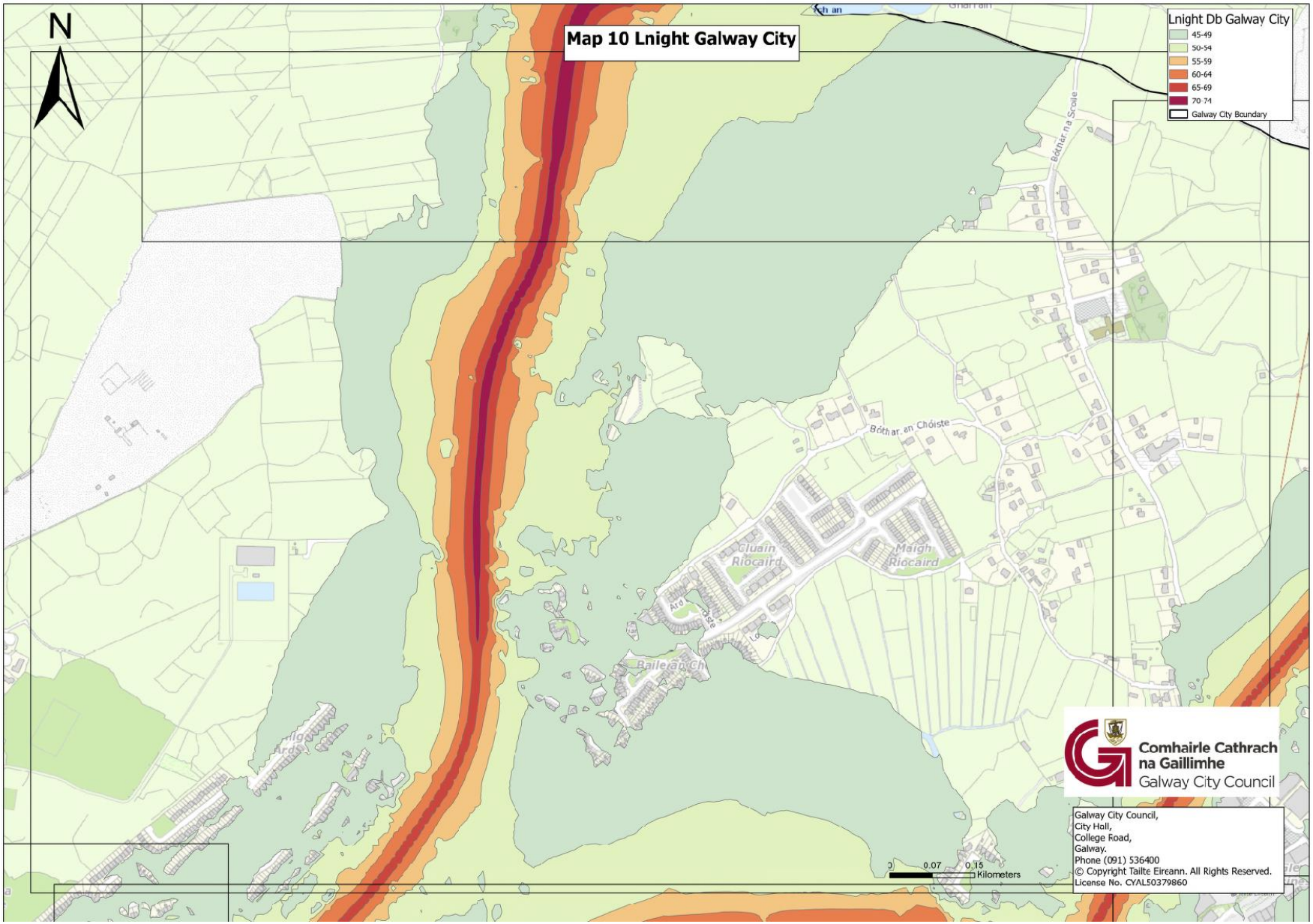
Map 10 Lnight Galway City
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Lnight Db Galway City
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65-69
70-74
Galway City Boundary
Bóthar na Scoile
Bóthar an Chóiste
Gluain Riocaird
Maigh Riocaird
Baile an Ch
Comhairle Cathrach na Gaillimhe
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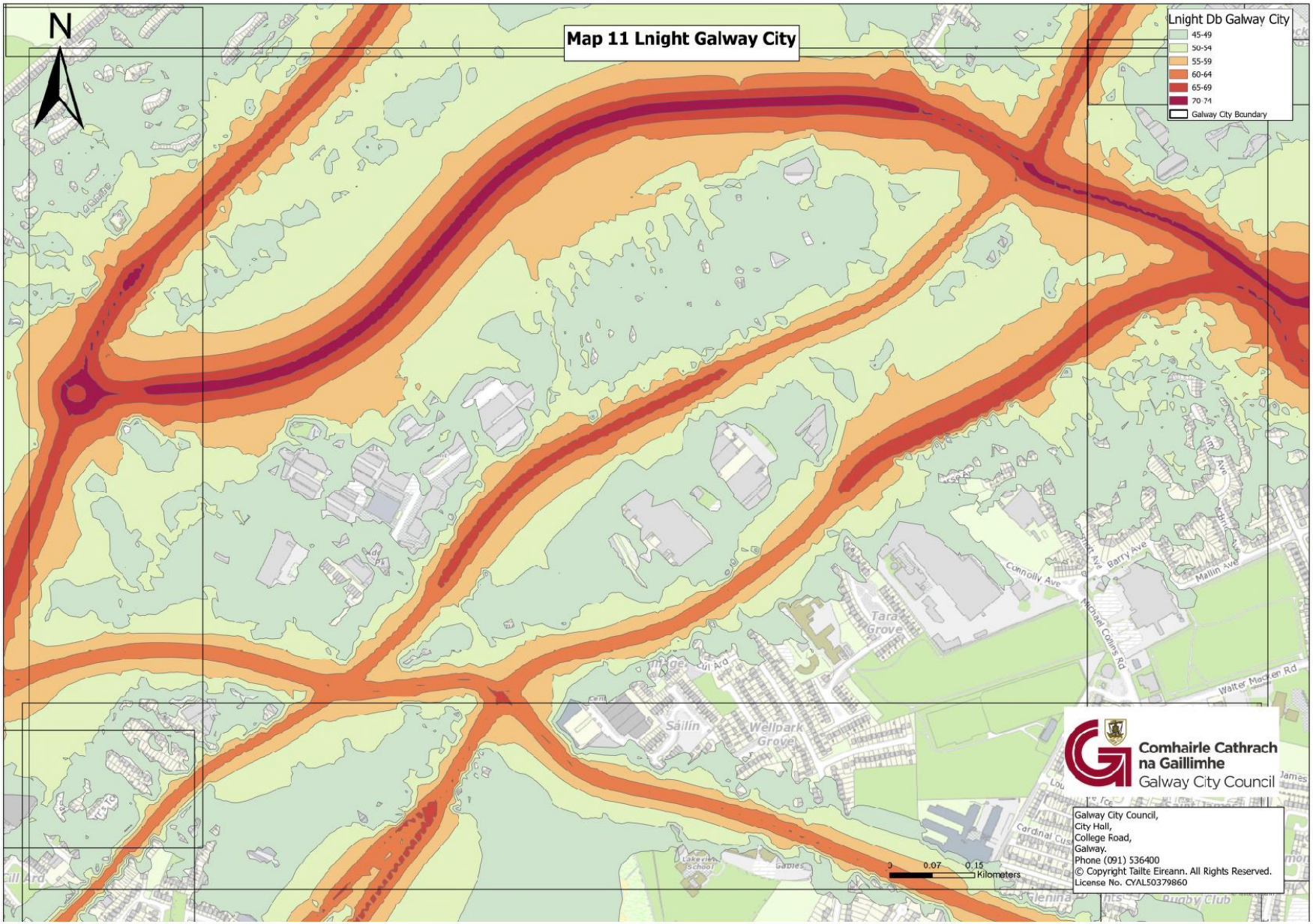
Kilometers


Map 11 Lnight Galway City
N
Lnight Db Galway City
45-49
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55-59
60-64
65-69
70-74
Galway City Boundary
Tara Grove
Wellpark Grove
Sáilín
Connolly Ave
Barry Ave
Mallin Ave
Michael Collins Rd
Walter Macken Rd
0 0.07 0.15
Kilometers
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Galway City Council,
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College Road,
Galway.
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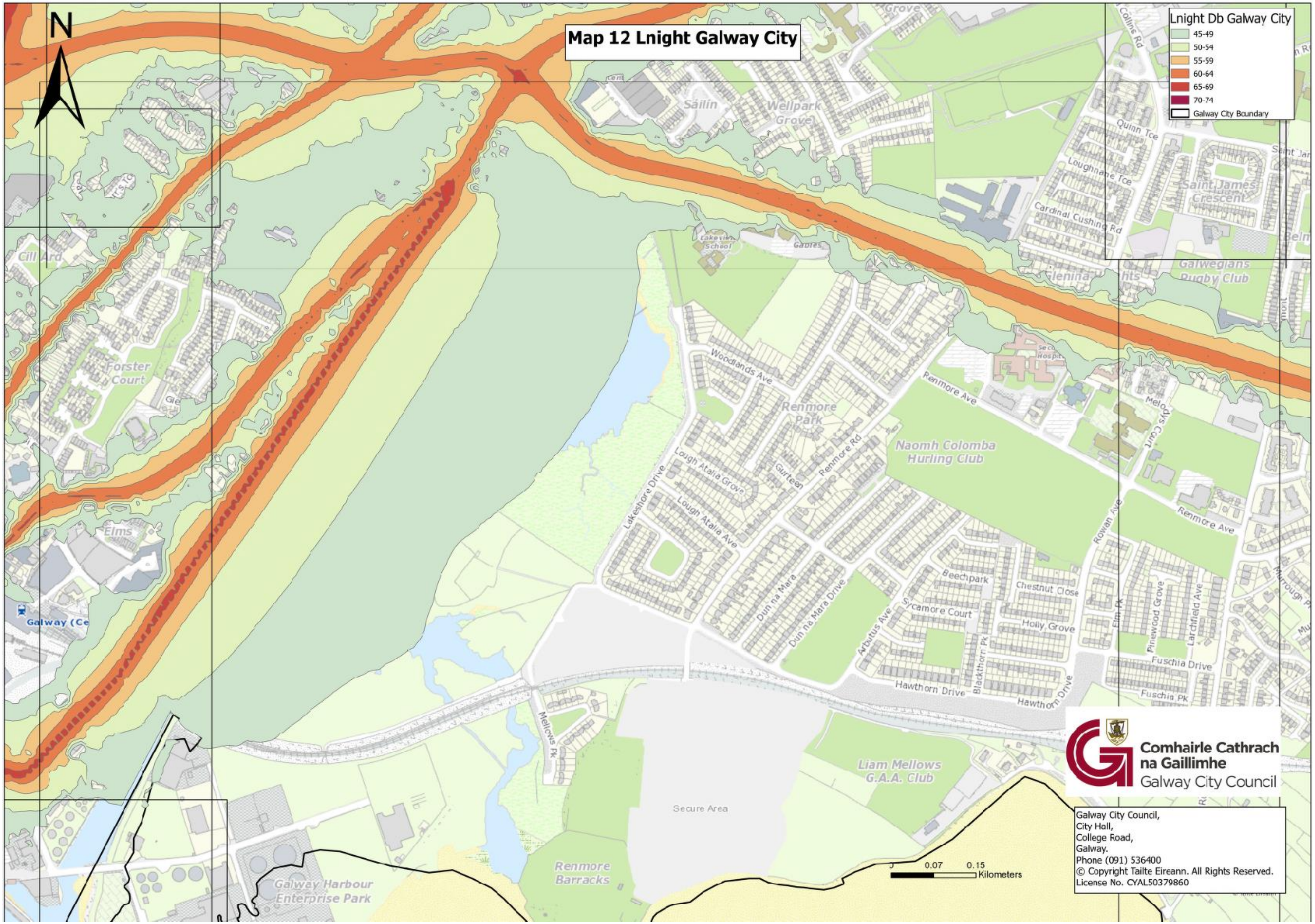
Map 12 Lnight Galway City
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Lnight Db Galway City
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65-69
70-74
Galway City Boundary
Comhairle Cathrach
na Gaillimhe
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Galway.
Phone (091) 536400
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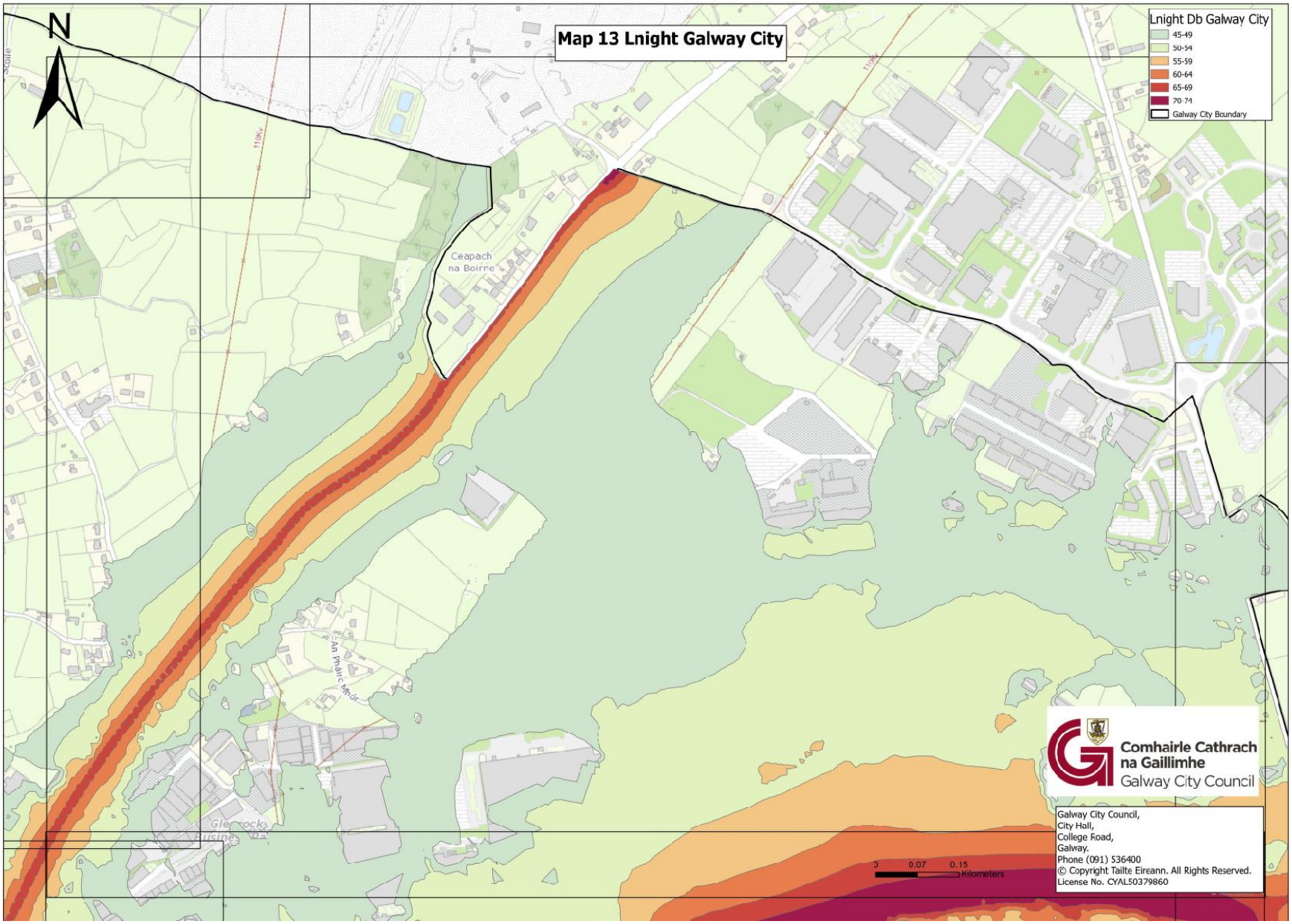
License No. CYAL50379860
0.07
0.15
Kilometers
Renmore Park
Naomh Colomba Hurling Club
Liam Mellows G.A.A. Club
Renmore Barracks
Galway Harbour Enterprise Park
Secure Area
Galwegians Rugby Club
Saint James Crescent
Wellpark Grove
Forster Court


Map 13 Lnight Galway City
N
Lnight Db Galway City
45-49
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55-59
60-64
65-69
70-74
Galway City Boundary
Ceapach na Boirne
An Phairc Mhór
110kV
0 0.07 0.15
Kilometers
Comhairle Cathrach na Gaillimhe
Galway City Council
Galway City Council,
City Hall,
College Road,
Galway.
Phone (091) 536400
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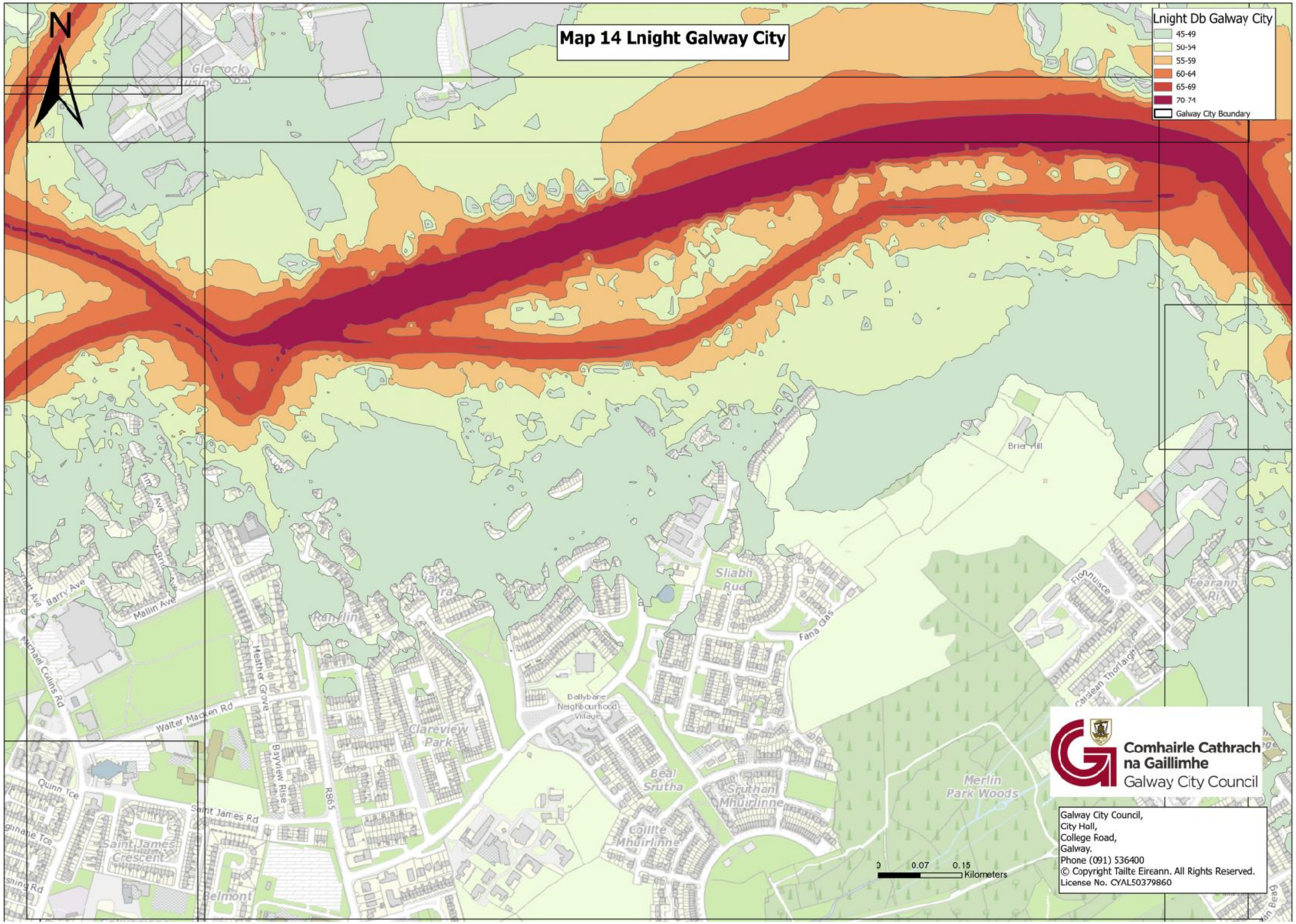
Map 14 Lnight Galway City
N
Lnight Db Galway City
45-49
50-54
55-59
60-64
65-69
70-74
Galway City Boundary
Brier Hill
Sliabh Rua
Fana Glas
Fionnuisce
Fearann Rí
Caisleán Thorlaigh
Mallin Ave
Barry Ave
Michael Collins Rd
Walter Macken Rd
Heather Grove
Bayview Rise
R865
Clareview Park
Ballybane Neighbourhood Village
Béal Srutha
Sruthán Mhuirlinne
Coillte Mhuirlinne
Merlin Park Woods
Quinn Tce
Saint James Rd
Saint James Crescent
Belmont
0 0.07 0.15 Kilometers
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College Road,
Galway.
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Map 15 Lnight Galway City
Lnight Db Galway City
45-49
50-54
55-59
60-64
65-69
70-74
Galway City Boundary
Merlin Park Woods
Merlin Park University Hospital
Comhairle Cathrach na Gaillimhe
Galway City Council
Galway City Council,
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Galway.
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License No. CYAL50379860
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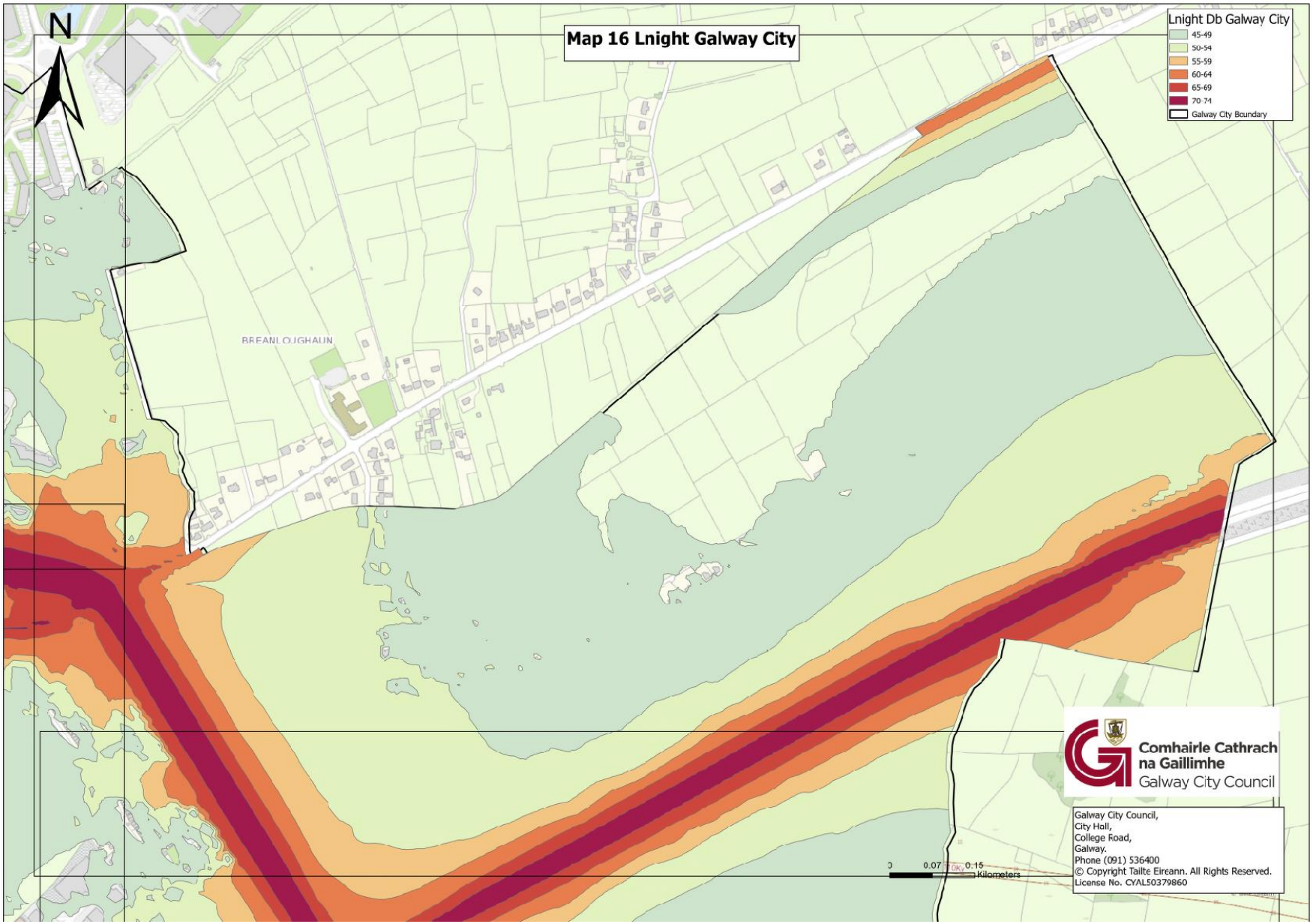
Map 16 Lnight Galway City
N
Lnight Db Galway City
45-49
50-54
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65-69
70-74
Galway City Boundary
BREANLOJGHAUN
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Kilometers
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Galway City Council,
City Hall,
College Road,
Galway.
Phone (091) 536400
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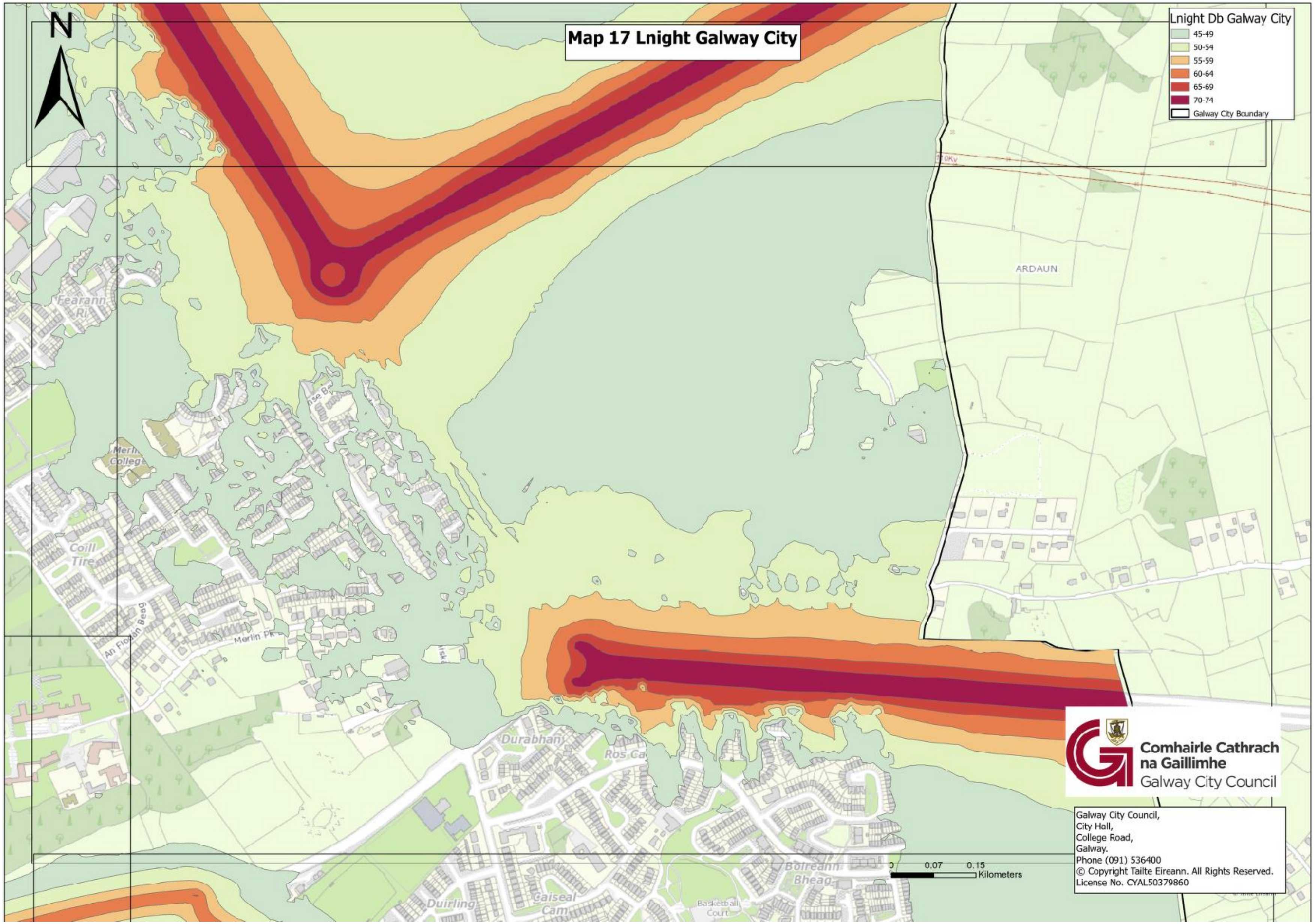
Map 17 Lnight Galway City
N
Lnight Db Galway City
45-49
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55-59
60-64
65-69
70-74
Galway City Boundary
ARDAUN
Merlin College
Coill Tire
Merlin Pk
Durabhan
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Galway.
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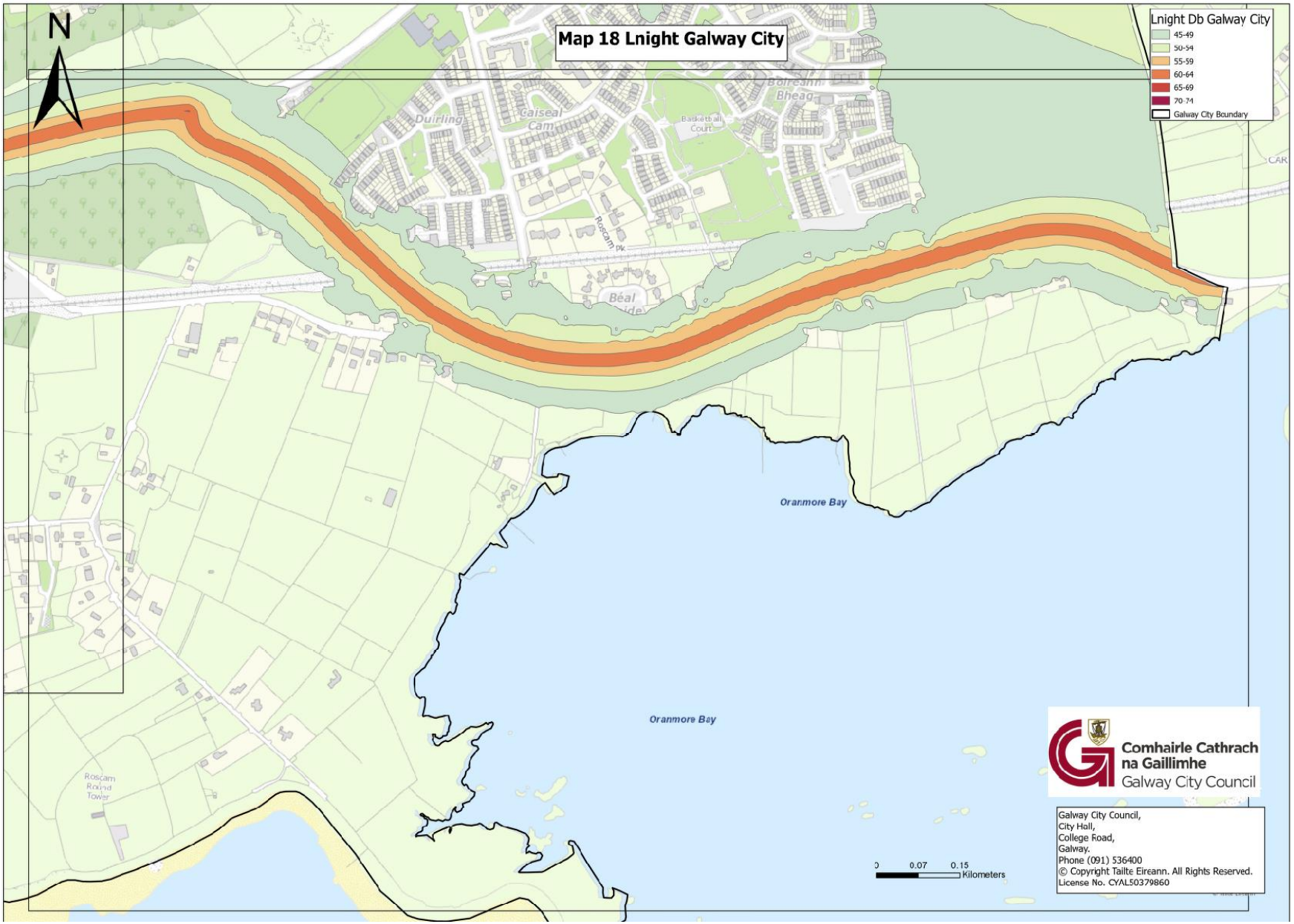
0 0.07 0.15 Kilometers
Basketball Court


Map 18 Lnight Galway City
N
Lnight Db Galway City
45-49
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55-59
60-64
65-69
70-74
Galway City Boundary
Duirling
Gaiseal Cam
Basketball Court
Bóthar an Bhealaigh
Roscam
Béal
Oranmore Bay
Oranmore Bay
Roscam Round Tower
0 0.07 0.15
Kilometers
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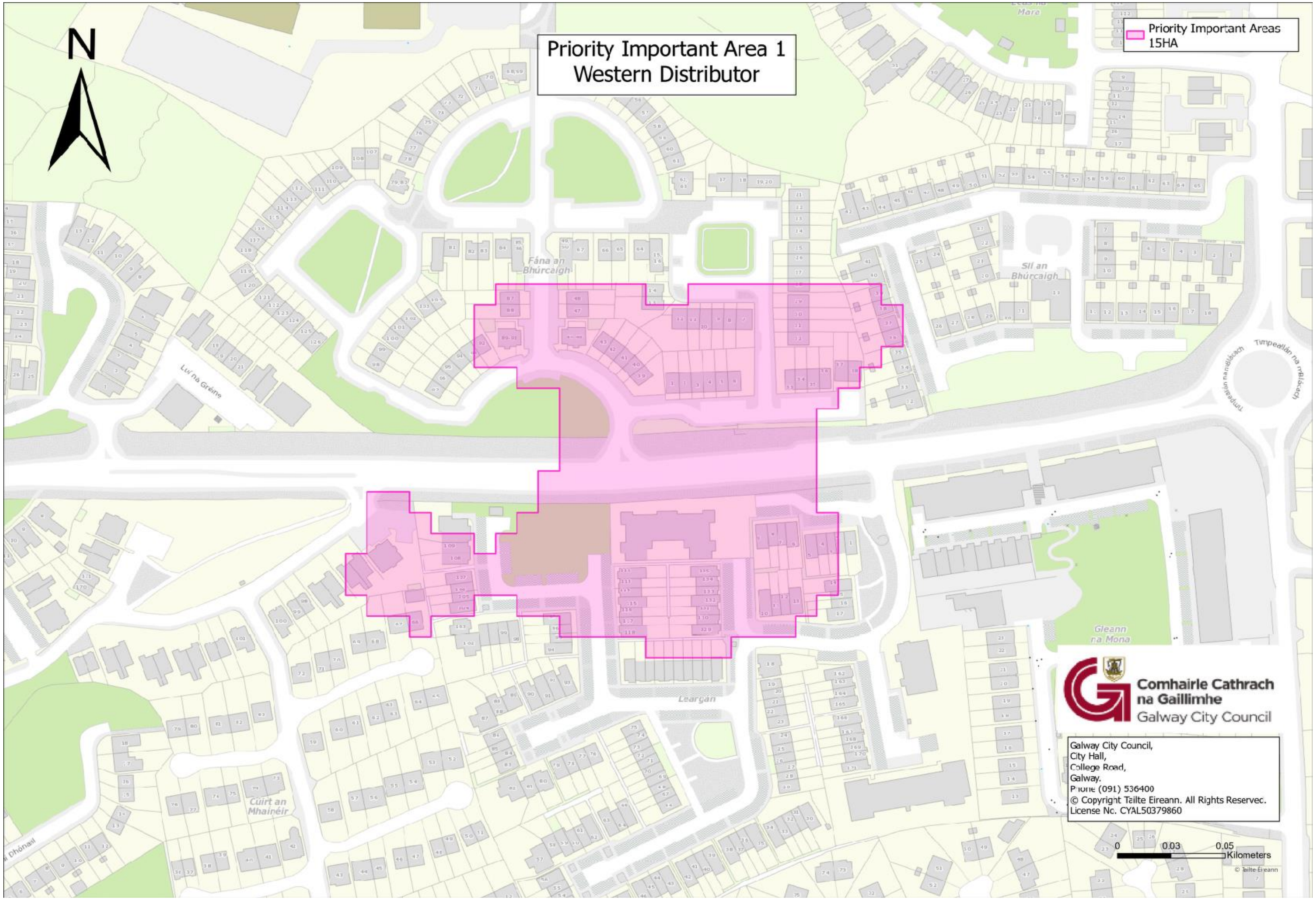
Appendix D Location of Priority Important Areas (PIAs)


N
Priority Important Area 1
Western Distributor
Priority Important Areas
15HA
Fána an Bhúrcaigh
Sli an Bhúrcaigh
Lu'na Gréine
Timpeallán na mBláth
Gleann na Móna
Leargán
Cuirt an Mhainéir
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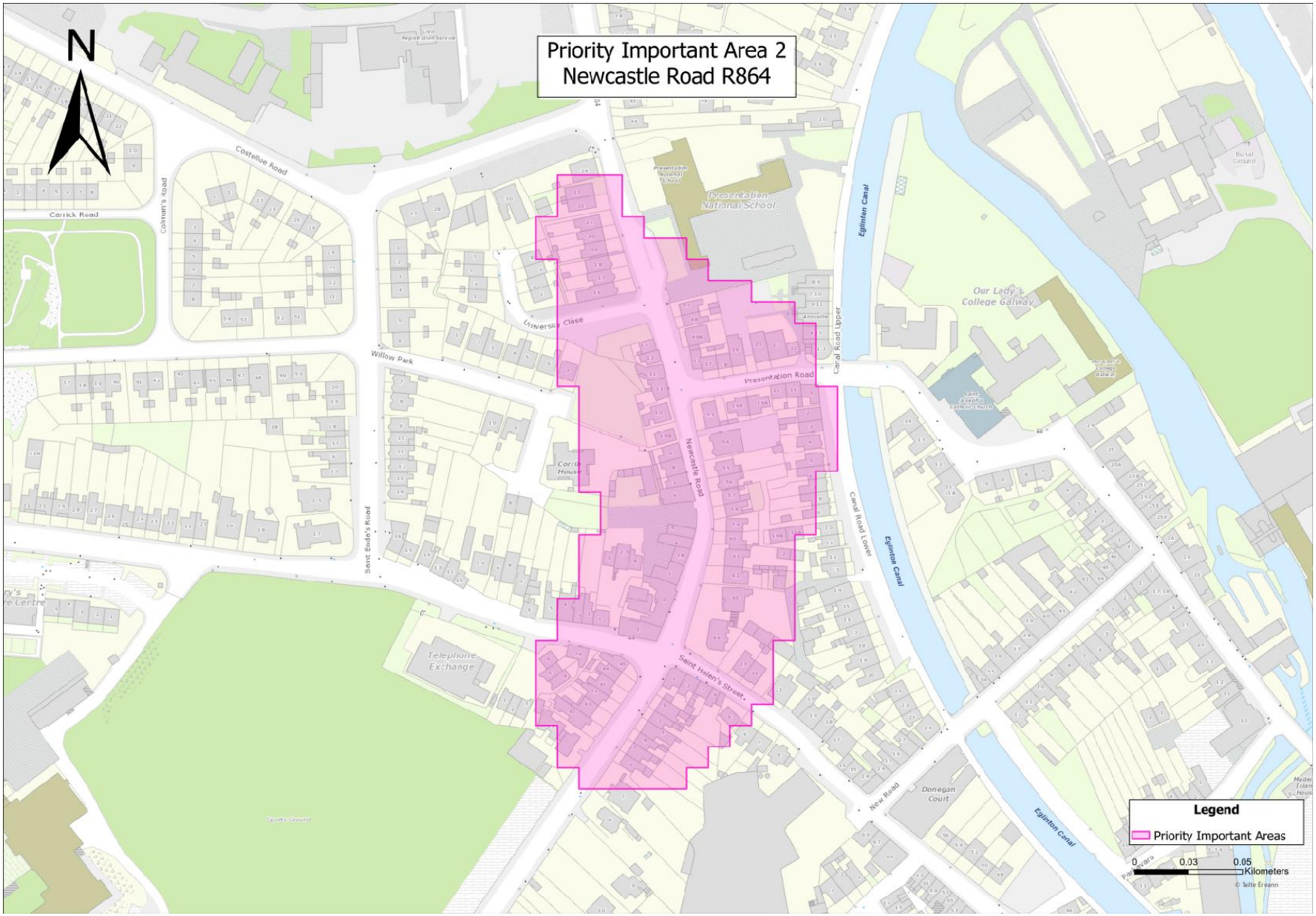
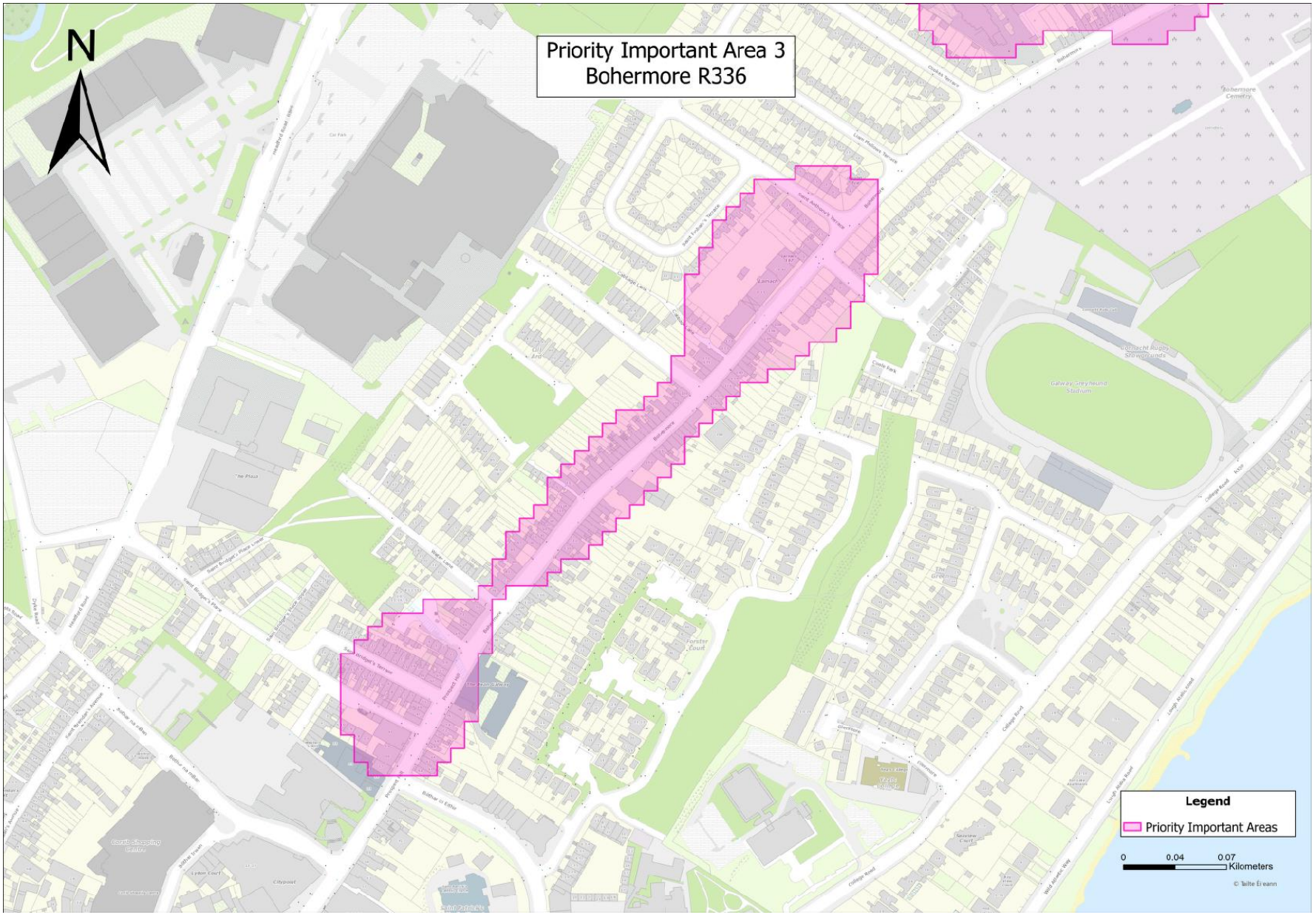
0
0.03
0.05
Kilometers


Priority Important Area 2
Newcastle Road R864
N
Costello Road
Carrick Road
Connon's Road
University Close
Willow Park
Presentation Road
Presentation National School
Eglinton Canal
Our Lady's College Galway
Canal Road Upper
Canal Road Lower
Newcastle Road
Saint Ende's Road
Saint Helen's Street
Telephone Exchange
Sports Ground
New Road
Donegan Court
Legend
Priority Important Areas
0
0.03
0.05
Kilometers


N
Priority Important Area 3
Bohermore R336
Legend
Priority Important Areas
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0.04
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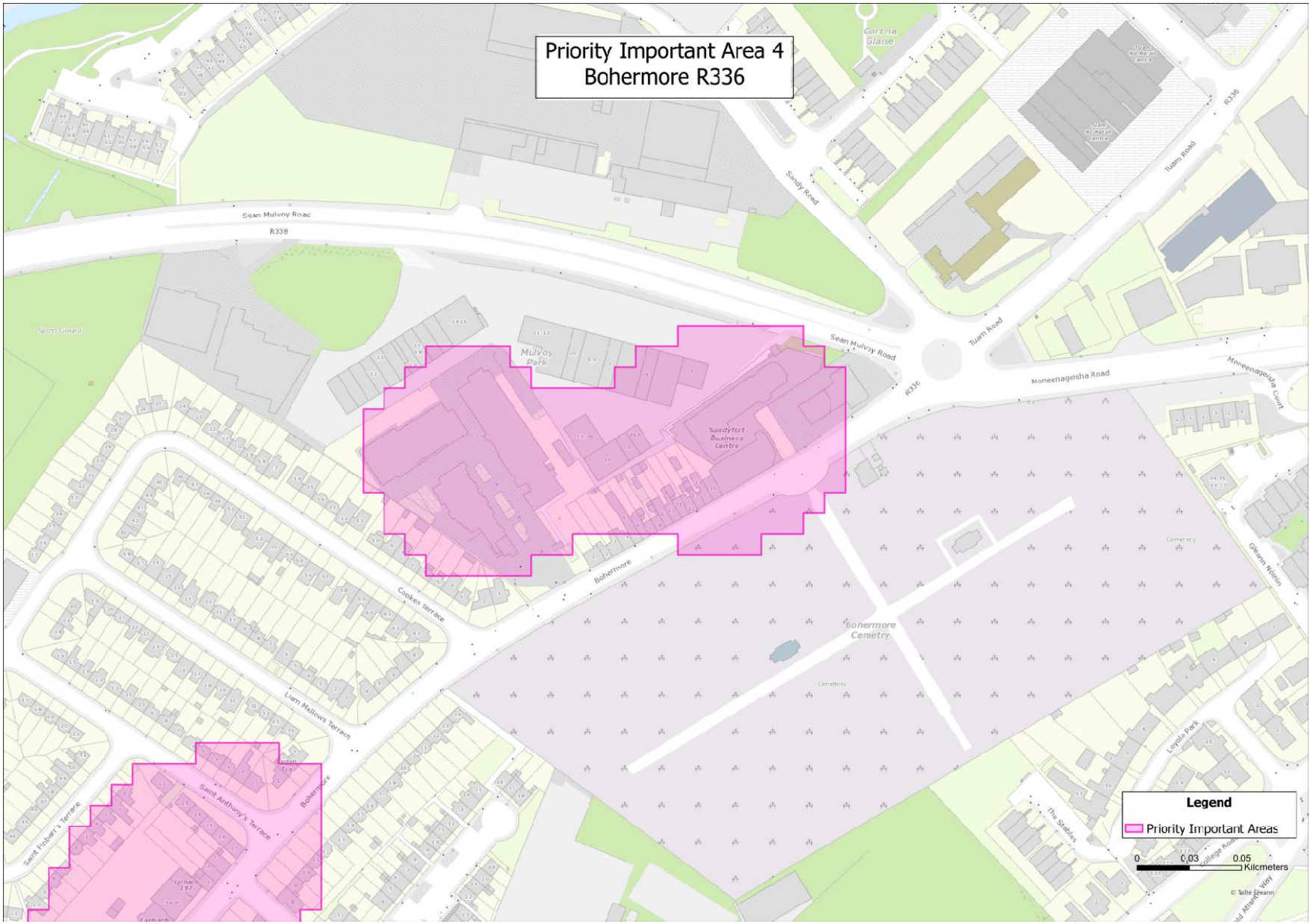
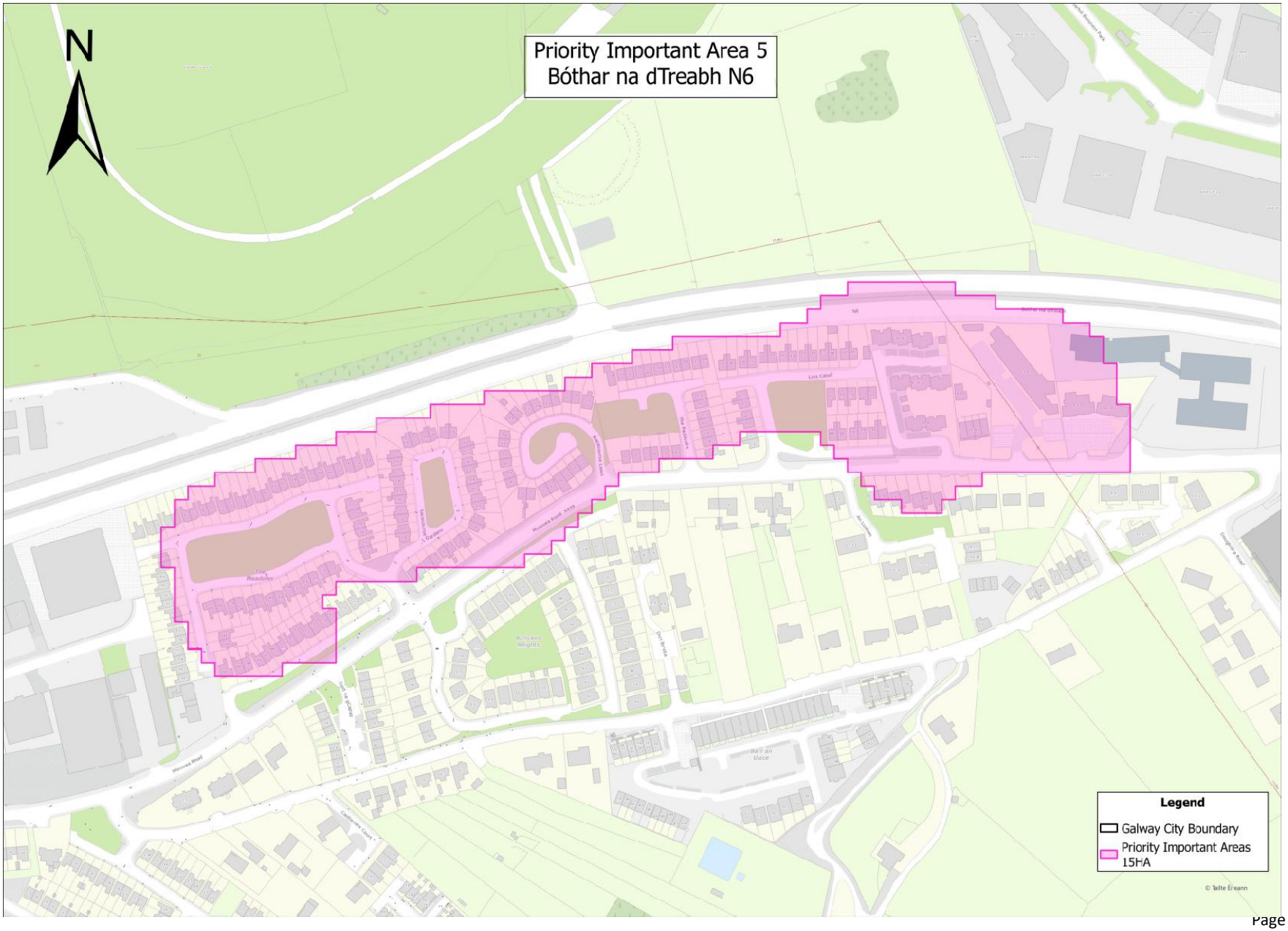
Kilometers


Priority Important Area 4
Bohermore R336
Sean Mulvoy Roac
R338
Sean Mulvoy Road
Sandy Road
Tuam Road
R336
Moneenageisha Road
Mulvoy Park
Saadyfort Business Centre
Bohermore
Cookes Terrace
Liam Mellows Terrace
Saint Anthony's Terrace
Saint Finbarr's Terrace
Bohermore Cemetry
Cemetery
Gleann Nóinín
Loyola Park
The Stables
Legend
Priority Important Areas
0
0.03
0.05
Kilometers


N
Priority Important Area 5
Bóthar na dTreabh N6
Legend
Galway City Boundary
Priority Important Areas 15HA
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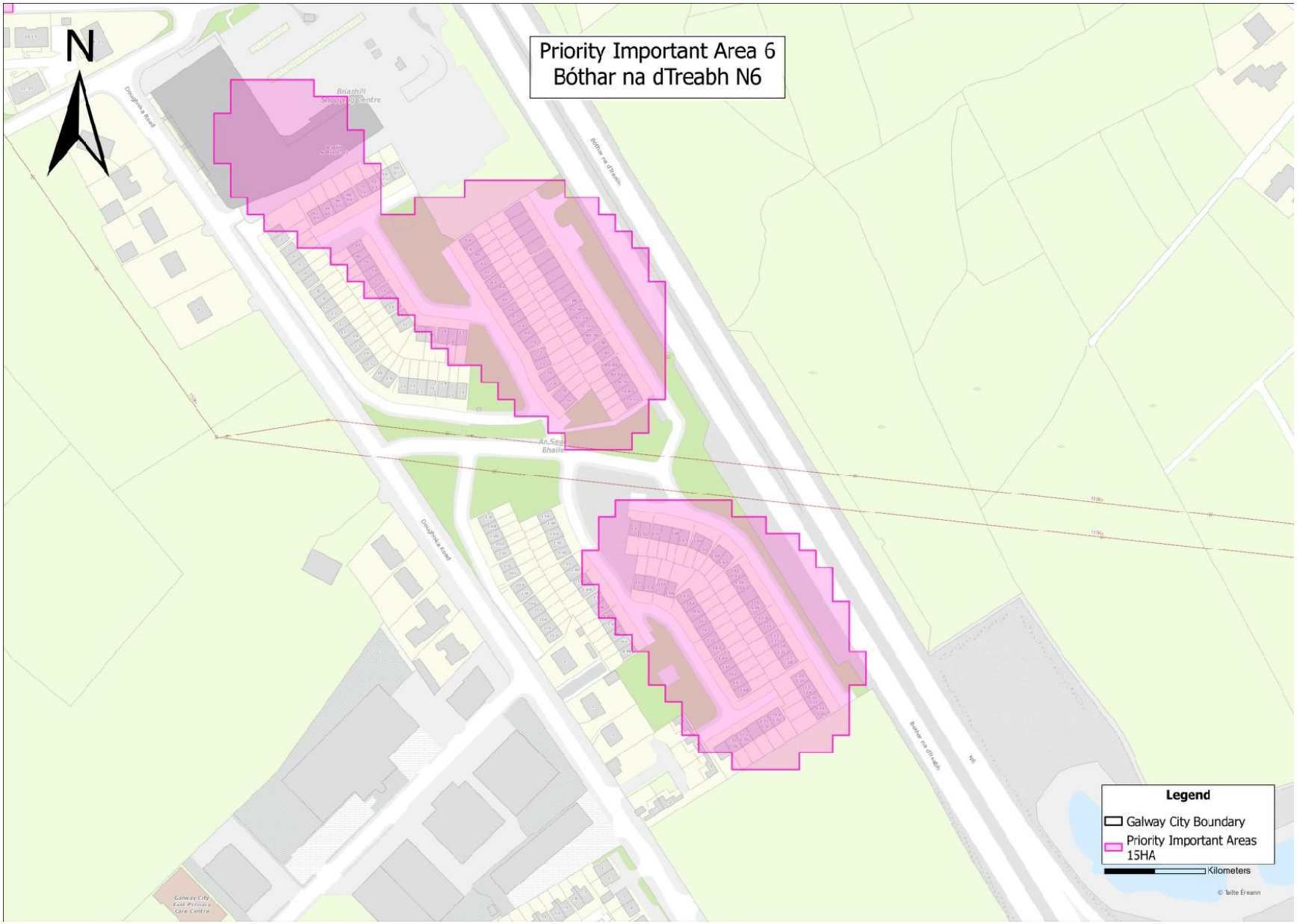
N
Priority Important Area 6
Bóthar na dTreabh N6
Legend
Galway City Boundary
Priority Important Areas 15HA
Kilometers

Appendix E Public Consultation

Details of the Public Consultation Process

A draft of this Noise Action Plan was prepared with the guidance of the Environmental Protection Agency (EPA).

The approval of the draft Noise Action Plan (NAP) is considered an Executive Function of the Council. An update on the Draft Galway City Noise Action Plan 2024-2028 was presented to the Transport Strategic Policy Committee on Tuesday 7 May 2024.

Action Planning Authorities are required to undertake a public consultation process following the preparation of the Draft NAP. It is also recommended that in parallel to the wider public consultation, the APA proactively seek consultation from relevant stakeholders such as:

- Department of the Environment, Climate and Communications,
- Department of Transport,
- Department of Housing, Local Government and Heritage,
- Environmental Protection Agency,
- APAs for adjacent areas, and neighbouring Member States,
- NMBs, such as TII; Irish Rail; and DAA,
- Local and regional authorities,
- Relevant Special Policy Committees (SPCs),
- NGOs and professional bodies, and
- Local and national citizens groups.

The regulations require that reasonable timeframes are adopted for each stage of the public consultation process. The Council permitted 6 weeks to review the documentation and to submit submissions/observations on the Draft Galway City Noise Action Plan 2024-2028.

A notice was placed in the Galway Advertiser advising the public of when and the locations where the Draft Galway City Noise Action Plan 2024-2028 was on display, namely:

- Galway City Council, City Hall, College Road, Galway, H91 X4K8
- Galway City Library
- Westside Library
- Ballybane Library

A copy of the Appropriate Assessment Screening Report for the Draft Galway City Noise Action Plan 2024-2028 was available for viewing at the above locations.

A copy of the Draft Galway City Noise Action Plan 2024-2028 and AA Screening Report was also made available to view and download on the Galway City Council website https://galwaycity.ie/

Copies of the Draft Galway City NAP was made available to the public in both Irish and English.

The consultation process was also advertised on social media.

The public consultation process extended from 1 August 2024 to 12 September 2024. The closing date for receipt of submissions/observations was 4:00pm on 12 September 2024.

As part of the consultation process, Galway City Council forwarded a copy of the Draft Noise Action Plan to the following statutory bodies and stakeholder organisations and invited submissions/observations on the draft plan:

- Department of Environment, Climate and Communications
- Environmental Protection Agency (EPA)
- Department of Agriculture, Food and Marine
- Department of Housing, Local Government and Heritage
- Transport Infrastructure Ireland (TII)
- Northern and Western Regional Assembly (NWRA)
- Galway County Council
- Galway City Planning Authority
- Galway City Active Travel Department
- Galway City Environment Department

Process Following Consultation

As of the closing date of the public consultation process, there were 2 submissions received from environmental authorities in relation to strategic environmental assessment, both of which had no specific comments/ no comment on the Draft NAP. Two duplicate submissions were received from a professional association and one submission was received from a member of the public.

The following tables summarise the themes of the submissions received during the public consultation phase.

Themes	Responses	Action	Submission No.	Submission from
Relating to the END NAP Road Noise	**Covered by END**	**Amendment to the NAP in relation to submissions**	**Cumulative**	**Member of Public / Statutory Consultee**
Acknowledgements/ no objections from Statutory Bodies	N/A	N/A	2	Statutory Consultee
Individual submission in relation to: i. Environmental Noise in Europe – 2020 Report – The NAP did not reference that 60% of countries have designated quiet areas. ii. Investigation, noise monitoring & identification of quiet areas, with particular reference to the Riverside Walk; iii. request to include an objective to have one quiet areas in place in the lifetime of the plan; iv. request to adopt a 'whole of council' approach into the implementation of the plan as current action plan is focused on the Roads/Transport Section v. lack of clarity on the abbreviations used	Yes	No Section 3.1.2.3 refers to the Environmental Noise in Europe 2020 EEA Report No 22/2019. Section 9.5 and 10.2 refer to the consideration of quiet areas in Galway City. Various departments in Galway City Council were consulted during the preparation of the Galway City NAP. Each table now includes reference to Appendix A for the definition of abbreviations.	3	Member of public

Themes	Responses	Action	Submission No.	Submission from
Relating to the END NAP Road Noise	**Not Covered by END**	**No amendment to the NAP in relation to submissions**	**Cumulative**	**Member of Public / Statutory Consultee**
Submission in relation to suggested use of a reference document when attaching noise conditions to planning applications	Use of planning process to determine applications for planning permission	Refer to the Planning Authority for their information	4	Professional Association
Submission in relation to suggested use of a reference document when attaching noise conditions to planning applications	Use of planning process to determine applications for planning permission	Refer to the Planning Authority for their information	5	Professional Association

Appendix F List of Tables