



APPENDIX 11-1
CONSTRUCTION NOISE REPORT



A specialist energy consultancy

Appendix 11-1

Construction Noise Report

Umma More Renewable Energy Development

Umma More Ltd

14373-004
16 February 2023

COMMERCIAL IN CONFIDENCE

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TNEI Services Ltd

Company Registration Number: 03891836

VAT Registration Number: 239 0146 20

Registered Address

Bainbridge House
86-90 London Road
Manchester
M1 2PW
Tel: +44 (0)161 233 4800

7th Floor West One
Forth Banks
Newcastle upon Tyne
NE1 3PA

Tel: +44 (0)191 211 1400

7th Floor
80 St. Vincent Street
Glasgow
G2 5UB
Tel: +44 (0)141 428 3180

TNEI Ireland Ltd

Registered Address: 104 Lower Baggot Street, Dublin 2, DO2 Y940

Company Registration Number: 662195

VAT Registration Number: 3662952IH

Unit S12, Synergy Centre
TU Dublin Tallaght Campus
Tallaght
D24 A386
Tel: +353 (0)190 36445

TNEI Africa (Pty) Ltd

Registered: Mazars House, Rialto Rd, Grand Moorings Precinct, 7441 Century City, South Africa

Company Number: 2016/088929/07

Unit 514 Tyger Lake
Niagara Rd & Tyger Falls Blvd
Bellville, Cape Town
South Africa, 7530

Executive Summary

TNEI Services Limited (TNEI) was commissioned by MKO on behalf of Umma More Ltd ('the Applicant') to undertake predictions of noise levels associated with the construction of the proposed Umma More Renewable Energy Development (the Proposed Development). The noise predictions were used to assess the potential impact of noise attributable to the construction of the Proposed Development on the occupiers of nearby noise sensitive receptors.

The noise Impact assessment was undertaken using guidance contained in BS 5228: Part 1 2009+A1:2014 '*Noise and vibration control on construction and open sites- Noise*' and the calculation methodology in ISO9613: 1996 '*Acoustics-- Attenuation of sound during propagation outdoors*' -Part 2: '*General Method of Calculation*', together with noise data for appropriate construction plant and activities.

There were 341 buildings (potential noise sensitive receptors) identified within ~3 km search area of the Wind Farm Site (defined from turbine locations within the Wind Farm Site). A number of the buildings identified were subsequently classified as derelict (H1, H77, H116, H131, H177, H224, H228 and H237) and therefore were not considered to be noise sensitive for the purposes of this assessment.

Predictions have been made at all identified noise sensitive receptors assuming that all items of plant were operating continually to provide a precautionary scenario. In addition, the noise model assumed that noise sources would be located within the most likely activity areas closest to the receptors, whereas in reality plant would move around the site and only a proportion of the plant may be operating at any one time. As such, the predictions are inherently likely to over-predict the actual sound levels that are likely to be experienced.

The results show that the predicted noise levels at all receptors would be below the most stringent of the noise threshold levels detailed in BS 5228. Accordingly, the assessment concludes that there would be no significant construction noise impacts.

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1 Introduction

1.1 Brief

1.1.1 TNEI was commissioned by Umma More Ltd to undertake a construction noise assessment for the proposed Umma More Renewable Energy Development (hereinafter referred to as the Proposed Development). The following steps summarise the noise assessment process:

- Establish typical ambient noise levels at sensitive receptors located closest to the anticipated construction activities and derive appropriate noise threshold levels in accordance with BS5228-1:2009 +A1:2014⁽¹⁾;
- Undertake predictions of activity noise from different construction phases that would be incident at the nearest sensitive receptors;
- Compare the predicted noise levels with the derived threshold values; and,
- Identify any requirements for mitigation measures, if needed.

1.2 Nomenclature

1.2.1 The following terms and definitions are used throughout this report;

- **Emission** refers to the sound level emitted from a sound source, expressed as either a sound power level or a sound pressure level;
- **Immission** refers to the sound pressure level received at a specific location from a noise source(s);
- **SWL** indicates the sound power level in decibels (dB);
- **SPL** indicates the sound pressure level in decibels (dB);
- **NSR** (Noise Sensitive Receptor) are identified receptors that are sensitive to noise; and
- **CNAL** (Construction Noise Assessment Location) refers to any location where the noise immission levels are calculated and assessed.

1.2.2 Unless otherwise stated, all noise levels refer to free field levels i.e. noise levels without influence from any nearby reflective surfaces.

1.2.3 As detailed in Section 1.1.1 in Chapter 1 of the EIAR, the following references the various project components are described and assessed using the following references: 'Proposed Development', 'the Site', 'Wind Farm Site' and 'Grid Connection'.

1.3 Site Description

1.3.1 The Wind Farm Site is located approximately 14 km northeast of Athlone, Co. Westmeath and approximately 8 km to the north of Moate, Co. Westmeath. The approximate Irish Transverse Mercator (ITM) reference for the centre of the site is 620642, 745867 and the proposed site infrastructure during the construction phase is shown on Figure A1.1 in Annex A. The Grid Connection includes for underground 110kV cabling from the proposed onsite 110kV substation within the Wind Farm Site to the existing Thornsberry 110kV substation in the townland of Derrynagall or Ballydaly, County Offaly. The underground cabling route, measuring approximately 31 km in length, is primarily located within the public road corridor.

- 1.3.2 The Wind Farm Site will be accessed through an improved entrance off the R390. Construction noise impacts from vehicles improving and using this access track are considered within this assessment, as well as all anticipated noise generating construction activity occurring within the Site.
- 1.3.3 Construction of the Proposed Development would require tree felling, the laying of tracks across the site, establishing two construction compounds, excavation of turbine foundations, construction of turbine bases, installation of turbines, and the installation of a substation and associated underground electrical cabling route. EIAR Chapter 4: Description can be referred to for a detailed description of the Proposed Development and the construction requirements.
- 1.3.4 Construction is anticipated to last for 18-24 months. An indicative construction timeline is detailed in Table 1.1. Activities denoted with blue cells have been included in the noise assessment. Activities denoted with grey cells are considered to be non-contributory to the noise produced from the construction activities.

Table 1.1: Indicative Construction Timetable

Task	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8
Site Health & Safety	Grey							
Grid Connection	Blue	Blue	Blue	Blue	Blue	Blue		
Site Compounds	Blue							
Site Roads	Blue	Blue	Blue	Blue	Blue			
Substation and Electrical Works		Blue	Blue	Blue	Blue	Blue		
Turbine Hardstands		Blue	Blue	Blue	Blue	Blue		
Turbine Foundations				Blue	Blue	Blue		
Backfilling and Landscaping					Blue	Blue	Blue	Blue
Turbine Delivery & Erection					Blue	Blue	Blue	
Substation Commissioning								Grey
Turbine Commissioning								Grey

- 1.3.5 TNEI has undertaken noise propagation modelling for all eight quarterly periods, which compose the indicative two year construction timetable, denoted as scenarios 01 – 08, respectively. Although no construction activities are anticipated during the night-time an additional scenario has been assessed that considers any potential noise from the operation of generators and other types of plant that may be left on over-night.

- 1.3.6 In addition to the above construction activities, underground electrical cabling will be laid to connect the Wind Farm Site to the existing Thornsberry 110kV substation. The temporary noise effects that are likely to occur along the length of the underground electrical cabling route are also considered within this assessment.

2 Noise Planning Policy and Guidance

2.1 Overview of Noise Planning Policy and Guidance

2.1.1 There is no published Irish guidance that contains noise limits or assessment methods for construction activities other than a 2014 document published by the National Roads Authority (NRA), which relates to noise from road developments only. The Association of Acoustic Consultants of Ireland, however, have published *Environmental Noise Guidance for Local Authority Planning & Enforcement Departments* ⁽²⁾, which states; “The chief guidance document applied in the assessment of construction phase noise impacts is British Standard BS 5228:2009+A1:2014 Code of practice for noise and vibration control on construction and open sites Part 1: Noise (2014). Accordingly, in the absence of any other applicable legislation or guidance, this assessment is undertaken in accordance with BS 5228.

2.2 BS 5228:2009+A1:2014

2.2.1 The BS 5228 standard provides useful guidance on practical noise control. Part 1, provides recommendations for basic methods of noise control including sections on community relations, training, occupational noise effects, neighbourhood nuisance and project supervision. The annexes provide information on noise sources, noise calculation procedures, mitigation measures and their effectiveness.

2.2.2 Part 1 also contains sound power level data for a variety of construction plant. This data was obtained from field measurements of actual plant operating on construction and open sites and is therefore appropriate to use as source level data for construction noise predictions.

3 Potential Impacts

3.1 Construction Noise Sources

- 3.1.1 Noise levels from construction activities would vary continually over time as activities and plant start and stop and move around the site, however, a worst-case scenario is considered where all construction plant and activities are assumed to be working continually and in locations closest to the nearest NSRs.

3.2 Construction Phases

- 3.2.1 Although an indicative timetable has been provided, a specific construction schedule has not been determined at this stage. *Chapter 4: Description* of this EIA does, however, provide descriptions of some of the likely construction activities that would be undertaken and the type of plant that would be used.
- 3.2.2 The core hours for construction activity will be 07:00 to 19:00 Monday to Saturday. There will be no working on Sundays and Public Holidays, however, it should be noted that out of necessity some activity outside of the core hours could arise, from delivery and unloading of abnormal loads or health and safety requirements, or to ensure optimal use is made of fair weather windows for concrete deliveries, the erection of turbine blades and the erection and dismantling of cranes.
- 3.2.3 To consider the variation in noise levels that would occur throughout the construction period a several scenarios have been modelled. The scenarios are based on the combination of construction tasks detailed in the indicative timetable (Table 1.1), *Chapter 4: Description* and TNEI's knowledge and experience of other similar sites and construction schedules.
- 3.2.4 Each scenario has been assessed against a set of threshold levels to determine the likely temporary noise impacts.
- 3.2.5 The assessment does not consider the noise impacts associated with decommissioning, as the plant and activities used for that phase are assumed to be similar in nature (and noise output) to those already considered in the modelled construction scenarios. Accordingly, if noise levels during the construction phases are acceptable, they will also be acceptable during decommissioning.

4 Methodology

4.1 Methodology for the Prediction of Noise

- 4.1.1 To predict the noise immission levels attributable to the construction of the Proposed Development, noise propagation models are produced using the propriety noise modelling software CadnaA. Within the software, complex models can be used to simulate the propagation of noise according to a range of international calculation standards.
- 4.1.2 For each CNAL, the $L_{Aeq(t)}$ levels have been predicted in accordance with ISO9613-2:1996 'Acoustics— Attenuation of sound during propagation outdoors: General method of calculation'.⁽²⁾
- 4.1.3 The ISO 9613 propagation model was chosen in preference to the calculation method presented in BS 5228, primarily because of some of the significant distances from source to receptor evident on this site. Specifically, BS5228 notes in F 2.2.2.2, that at distances over 300 m noise predictions using the BS 5228 methodology should be treated with caution, especially where a soft ground correction factor has been applied because of the increasing importance of meteorological effects; whereas ISO 9613-2 provides equations that have been validated up to 1,000 m.
- 4.1.4 The ISO 9613 model can take account of the following factors that influence sound propagation outdoors:
- geometric divergence;
 - air absorption;
 - reflecting obstacles;
 - screening;
 - vegetation; and
 - ground reflections.
- 4.1.5 The model uses the octave band sound power output of the proposed plant as its acoustic input data and calculates, on an octave band basis, attenuation due to geometric spreading, atmospheric absorption and ground effects.
- 4.1.6 For the purposes of this assessment, all noise level predictions have been undertaken using a receiver height of 1.5 m above local ground level. Soft ground ($G=1$) attenuation has been assumed at all locations except for water bodies, construction compounds, turbine bases and similar areas of hardstanding, which have been modelled with a ground attenuation of $G=0$ (hard ground). Air absorption based on a temperature of 10°C and 70 % relative humidity has been assumed.

4.2 Limitations of the Noise Model

- 4.2.1 The noise propagation models are intended to give a good approximation of the specific noise level and the contribution of each individual source. However, it is expected that actual levels are unlikely to be matched exactly with modelled values and the following limitations in the model should be considered:

- In accordance with ISO 9613-2, all assessment locations are modelled as downwind of all noise sources and propagation calculations are based on a moderate ground-based temperature inversion, such as commonly occurs at night;
- The predicted barrier attenuation provided by local topography, embankments, walls, buildings and other structures in the intervening ground between source and receiver can only be approximated and not all barrier attenuation will have been accounted for;
- Unless specifically stated, the models assume all noise sources are operating continuously and simultaneously, estimating a worst-case source noise level; and
- All mobile plant assumed to be working on tracks (excavators, dozers, rollers etc) have been modelled as moving point sources along their anticipated movement paths and the sound power level of the source is effectively averaged out across the length of the entire line. This will give an approximation of the overall noise levels from mobile plant at receptor locations; however, in reality noise levels would fluctuate as construction plant and activities move around in their activity areas.

4.3 Assessing Construction Noise Effects

4.3.1 Annex E, part E.3.2 of BS 5228 provides example criteria for assessing the significance of construction noise effects and acceptable limits for construction noise.

4.3.2 Table E.1 of BS 5228 (represented here as Table 4.1) contains an example of the significance criteria that can be used to assess construction activities.

Table 4.1: Example of Threshold of Potential Significant Effect at Dwellings (dB_(A))

Assessment Category and Threshold Value Period	Threshold Value L _{Aeq,T} dB		
	Category A _(A)	Category B _(B)	Category C _(C)
Night-Time (23:00 – 07:00)	45	50	55
Evenings and Weekends _(D)	55	60	65
Daytime (07:00 – 19:00) and Saturdays (07:00 to 13:00)	65	70	75
<p>(A) Category A: threshold values to use when ambient noise levels (when rounded to the nearest 5dB) are less than these values;</p> <p>(B) Category B: threshold values to use when ambient noise levels (when rounded to the nearest 5dB) are the same as category A values;</p> <p>(C) Category C: threshold values to use when ambient noise levels (when rounded to the nearest 5dB) are higher than category A values;</p> <p>(D) 19:00-23:00 weekdays, 13:00-23:00 Saturdays and 07:00 - 23:00 Sundays.</p>			

4.3.3 The values can be considered thresholds for the construction noise levels (quantified using the L_{Aeq} noise metric). The values in each category are to be used where the existing noise level at each location, rounded to the nearest 5 dB, is below the level given for a particular time of day. BS5228 provides the following advice regarding the threshold levels:

“Note: 1 A potential significant effect is indicated if the $L_{Aeq,T}$ noise level arising from the site exceeds the threshold level for the category appropriate to the ambient noise level.

Note 2: If the ambient noise level exceeds the Category C threshold values given in the table (i.e. the ambient noise level is higher than the above values), then a potential significant effect is indicated if the total $L_{Aeq,T}$ noise level for the period increases by more than 3 dB due to site noise.

Note 3: Applied to residential receptors only.”

- 4.3.4 Therefore, the assessment of construction noise reflects a specific noise threshold for the locality (set relative to the existing ambient noise levels) for a particular period of the day, rather than an absolute noise level.
- 4.3.5 It should be noted that exceedance of the limit does not in itself indicate a significant effect, rather, the standard states *“If the site noise level exceeds the appropriate category value, then a potential significant effect is indicated. The assessor then needs to consider other project-specific factors, such as the number of receptors affected and the duration and character of the impact, to determine if there is a significant effect”*.

4.4 Study Area

- 4.4.1 The Study Area for the noise assessment has been defined by a 3 km buffer around the Wind Farm Site. Within this study area, 341 buildings have been identified, of which the majority are residential properties.
- 4.4.2 Rather than identifying individual buildings on the underground electrical cabling route, this report considers the typical noise levels that are likely to occur along the length of the route, which can be applied to the assessment of all nearby sensitive receptors.
- 4.4.3 Noise Sensitive Receptors (NSRs) are properties, people or fauna that are sensitive to noise and, therefore, may require protection from nearby noise sources. Residential receptors are deemed to have a high level of sensitivity, therefore, all identified residential NSRs within the study area have been assessed. A number of the buildings identified within the 3 km buffer were subsequently classified as derelict (H1, H77, H116, H131, H177, H224, H228 and H237) and therefore have not been considered to be noise sensitive for the purposes of this assessment.
- 4.4.4 A representative sample of 20 Construction Noise Assessment Locations (CNALs) have been chosen to represent the closest NSRs or group of NSRs to the Wind Farm Site and the assessment of these CNALs are detailed within this report on the assumption that if noise levels are within acceptable levels at the closest receptors, then it is reasonable to assume they will also be acceptable at more distant locations. Nevertheless, noise level predictions for all identified NSRs in the study area are provided in Annex C for completeness.
- 4.4.5 Table 4.2 details the CNALs considered within the report, which are also shown on Figure A1.1. For clarity, all CNALs and NSRs are also labelled as ‘H’ and numbered to ensure consistency with labelling used within the rest of the EIAR. A set of inset maps (Figures A1.1a-c) showing the NSRs have been included within Annex A.

Table 4.2: Construction Noise Assessment Locations

CNAL - NSR	ITM Coordinates	
	Eastings	Northings
CNAL 01 - H2	618399	747936
CNAL 02 - H3	619841	746630
CNAL 03 - H4	621453	745239
CNAL 04 - H5	618915	745338
CNAL 05 - H6	620556	746589
CNAL 06 - H7	618087	745667
CNAL 07 - H8	621320	746366
CNAL 08 - H12	618376	748045
CNAL 09 - H13	619889	747394
CNAL 10 - H15	618174	747340
CNAL 11 - H21	618929	745223
CNAL 12 - H25	618422	748301
CNAL 13 - H28	618077	746968
CNAL 14 - H33	618042	747109
CNAL 15 - H36	621274	744492
CNAL 16 - H41	617957	746743
CNAL 17 - H55	618835	745029
CNAL 18 - H63	618359	748530
CNAL 19 - H103	618406	749020
CNAL 20 - H169	617833	749239

4.5 Baseline Noise Levels

4.5.1 Baseline noise level monitoring was undertaken as part of the operational noise assessment undertaken for the Proposed Development (see Appendix 11-2 for more information).

4.5.2 At all noise monitoring locations the ambient sound levels were below the BS 5228 Category A Threshold Values, as detailed in Table 4.1.

4.6 Construction Noise Level Thresholds

4.6.1 Having due regard to the existing ambient noise levels at the NSRs around the Proposed Development, the BS 5228 Category A Threshold Values have been considered for the construction noise assessment.

4.6.2 Accordingly, the assessment is made against the following noise level limits:

- Daytime weekdays 07:00 – 19:00: 65 dB L_{Aeq} (12 hours)
- Saturday 07:00 – 13:00: 65 dB L_{Aeq} (6 hours)
- Evenings and Weekends 19:00 – 23:00: 55 dB L_{Aeq} (4 hours), Saturday 13:00 – 23:00: 55 dB L_{Aeq} (10 hours), Sundays 07:00 – 23:00: 55 dB L_{Aeq} (16 hours)
- Night time 23:00 – 07:00: 45 dB L_{Aeq} (8 hours)

5 Noise Impact Assessment

5.1 Modelling of Individual Sound Sources

- 5.1.1 Noise immission levels would vary throughout the construction period as construction activities, plant and locations vary. For much of the working day the noise associated with construction activities would be less than predicted, as this assessment assumes all equipment is continually operating at full power and in locations closest to the NSRs, whereas in practice, equipment load and precise location may vary throughout the day. This approach has been adopted to represent a worst-case assessment.
- 5.1.2 At this stage a detailed plant list is not available, therefore, a generic plant list based upon experience of similar projects has been used. All modelled noise sources and associated sound power level (SWL) and sound pressure level (SPL) data is included in Annex B: Noise Model Data.
- 5.1.3 For tree felling activities broadband noise level data for a harvester, a forwarder and a skidder has been taken from *Noise Hazards in Forestry Operations and Selection of Personal Protective Equipment*⁽³⁾ (Forestry Commission). No octave band data is available therefore modelling has been undertaken using the 500 Hz octave band data, as recommended in ISO 9613. Noise levels for the Harvester and Forwarder are given at the operator position inside a Q Cab. In order to estimate external levels 10 dB has been added to the quoted levels and the sound power level for each item of plant has been calculated within CadnaA assuming the quoted sound pressure levels (SPLs) have been measured at a distance of 1 m.
- 5.1.4 For all other construction activities source noise level data is taken from Annex C of BS 5228, which provides octave band SPL levels for a wide variety of construction plant and activities suitable for the estimation of noise immission levels.
- 5.1.5 Construction noise sources for any given activity will generally comprise a mix of both moving and static sources. Mobile sources include mobile construction plant and Heavy Goods Vehicles (HGVs), while static construction plant could include generators, lighting rigs and pumps. Static equipment is usually located at a fixed location for an extended period of time.
- 5.1.6 For both mobile and static plant, activity noise levels would be transient in nature due to changes in location, on/off periods, and fluctuations of load on any individual machine.
- 5.1.7 All static items of plant and activities have been modelled as single point sources. All mobile plant (excavators, dozers, dumpers etc.) have been modelled as either a moving point source (line source) along their anticipated movement paths or as a stationary point source located at the closest point of its anticipated work area to any given CNAL.

5.2 Modelling of Construction Activities.

- 5.2.1 The assessment considers a number of construction scenarios based on the key construction activities detailed in Chapter 4: Description and the indicative timetable (Table 1.1 of this report).
- 5.2.2 Noise propagation modelling has been undertaken considering the key activities that are likely to occur throughout the construction period. Details of the items of plant assumed to

be operating in each modelled scenario, as well as noise data for each modelled noise source, are included in Annex B: Noise Model Data.

5.2.3 The modelled scenarios represent the following construction activities;

- Scenario 01 (Q1): Construction of the Grid Connection underground electrical cabling route has begun along with the construction and upgrading of roads and track leading into the Wind Farm site from the north west and down to the southern proposed construction compound.
- Scenario 02 (Q2): Track upgrade and installation is on-going towards the southern construction compound. Both construction compounds are now in operation. Construction of the turbine hardstandings and foundations at T1 and T2 is underway. Construction of the Grid Connection underground electrical cabling route is on-going and construction of the onsite 110kV substation has begun.
- Scenario 03 (Q3): Track upgrade and installation has begun from the southern construction compound towards T8. Both construction compounds are in operation. Construction of the turbine hardstandings and foundations at T3 and T4 is underway. Construction of the Grid Connection underground electrical cabling route and onsite 110kV substation is on-going.
- Scenario 04 (Q4): Track upgrade and installation is on-going from the southern construction compound towards T8. Both construction compounds are in operation. Construction of the turbine hardstandings and foundations at T5 is underway. Construction of the Grid Connection underground electrical cabling route and onsite 110kV substation is on-going.
- Scenario 05 (Q5): Track upgrade and installation has begun on the remaining Wind Farm Site roads. Both construction compounds are in operation. Construction of the turbine hardstandings and foundations at T6 and T8 are underway. Construction of the Grid Connection underground electrical cabling route and substation is on-going. Delivery of turbines has begun and landscaping and backfilling is occurring at all the proposed spoil management locations. Erection of T1 and T2 is underway
- Scenario 06 (Q6): Both construction compounds are in operation. Construction of the turbine hardstandings and foundations at T7 and T9 are underway. Construction of the Grid Connection underground electrical cabling route and substation is on-going. Erection of T3 and T4 is underway and landscaping and backfilling is occurring at all the proposed spoil management locations. Delivery of turbines is still on-going.
- Scenario 07 (Q7): Both construction compounds are in operation. Construction of the Grid Connection underground electrical cabling route and substation is on-going. Erection of T6, T7 and T9 is underway and landscaping and backfilling is occurring at all the proposed spoil locations. Delivery of turbines is still on-going.
- Scenario 08 (Q8): Both construction compounds are in operation. Landscaping and backfilling is occurring at all the proposed spoil management locations.
- Night-time: Diesel generators for the cabin and lighting at both construction compounds are operational.

In addition to the above, forestry activities have been modelled including felling of trees in the vicinity of T4 and forwarding for transportation off site, which will take place prior to the construction of site road to T4, turbine hardstandings and foundations at T4. Some tree



falling is anticipated, however, it has not detailed within the indicative timetable, therefore, using the precautionary principle, tree felling activities have been included on all scenarios.

5.3 Calculated Noise Immission Levels

5.3.1 Table 5.1 presents the calculated noise immission levels at each CNAL for each scenario.

Table 5.1: Predicted Construction Noise Immission Levels, dB L_{Aeq(t)}

CNAL	Scenario								
	1	2	3	4	5	6	7	8	Night
CNAL 01	35	40	35	32	40	37	36	34	26
CNAL 02	31	38	40	41	44	43	42	38	25
CNAL 03	22	29	30	31	38	41	40	34	16
CNAL 04	40	47	48	48	49	50	45	45	38
CNAL 05	26	32	32	33	40	40	40	34	19
CNAL 06	37	39	42	39	41	43	39	39	24
CNAL 07	21	27	27	28	35	38	37	31	14
CNAL 08	35	39	34	31	39	36	35	33	25
CNAL 09	29	38	33	31	39	36	35	34	24
CNAL 10	31	38	37	33	39	37	35	34	25
CNAL 11	38	46	47	46	48	48	44	43	36
CNAL 12	28	36	30	28	39	37	37	31	23
CNAL 13	33	40	39	35	42	39	37	36	23
CNAL 14	32	39	39	34	41	39	36	35	23
CNAL 15	20	31	32	32	35	38	35	29	13
CNAL 16	34	37	40	36	41	40	37	37	22
CNAL 17	35	42	43	43	44	45	40	40	31
CNAL 18	26	33	28	26	40	40	40	28	20
CNAL 19	38	39	25	23	32	31	31	25	16
CNAL 20	23	28	24	22	43	43	43	23	14

- 5.3.2 For all CNALs the predicted noise levels for all scenarios are below the weekday and Saturday daytime Category A threshold level of 65 dBA and are also below the evening and weekend Category A threshold level of 55 dBA.
- 5.3.3 No construction activities are anticipated during the night-time, however, some generation plant or similar may operate during night-time hours within the construction compounds. The predicted noise levels for the modelled night-time scenario are below the night-time Category A threshold levels of 45 dBA.

5.4 Grid Connection

- 5.4.1 For the Grid Connection underground electrical cabling route, the amount of required plant is relatively small, typically being based around an excavator for trenching and backfill activities. As such, construction activities in any one location will be limited in duration and adverse noise effects are anticipated to be negligible. Section 4.7.7.1 in Chapter 4 of the EIAR describes the construction of the underground electrical cable trench in more detail.
- 5.4.2 Where construction activities occur directly besides a dwelling the noise levels at that location are likely to be in the region of 75 – 80 dBA for a short period of time. This noise level is deemed representative of any receptor that lies adjacent to the 31 km Grid Connection underground electrical cabling route. It should be noted, however, that this would only occur where construction activities are directly opposite a dwelling i.e. within approximately 20 m. To put this into context, trenching and backfill activities are anticipated to move along the underground electrical cabling route at approximately 150 m to 300 m a day, therefore, the length of time when construction activities will be occurring adjacent to any given receptor is only likely to be for a few hours. For the majority of the time, plant and equipment will be located at greater distances and noise levels will be lower.
- 5.4.3 Although noise levels from trenching and backfill operations may occasionally exceed the BS 5228 threshold levels during the daytime, this would only occur for a short period of time at any one location. Accordingly, the impact is not deemed significant.
- 5.4.4 At some watercourse, culvert and drain crossings there may be a requirement for Directional Drilling (DD). Specifically, this could be required for water crossings 2, 3, 4, 5, 7 and 11. DD typically requires the use of multiple items of plant including pumps, mud recyclers, drilling rigs and generators, however, the proposed plant for these water crossings is a Vermeer D36 x 50 Directional Drill, which is much smaller than many DD rigs and requires less associated plant. As such, DD operations are expected to be lower in noise output than is normal.
- 5.4.5 Calculations of the Vermeer DD rig, assuming a source noise level of 94 dBA at 1 m, indicates that noise levels would be below the 65dBA threshold from a distance of approximately 30 m. Where activities involving the drilling rig are within 30 m of a dwelling then noise mitigation measures should be considered in line with the guidance presented in BS 5228. This could include the erection of temporary boarding alongside the drilling rig or use of ‘acoustic blanket panels’ to hang from heras fencing or similar. This should be installed as close to the drilling rig as is practicable and fitted so as to interrupt any direct line of site between the drilling rig and the closest residential receptors. Examples of appropriate products include Echo Noise Defender and Soundex DeciBloc. It is anticipated that this would be required should HDD be used for water crossings 3, 7 and 11, which are in close proximity to dwellings.

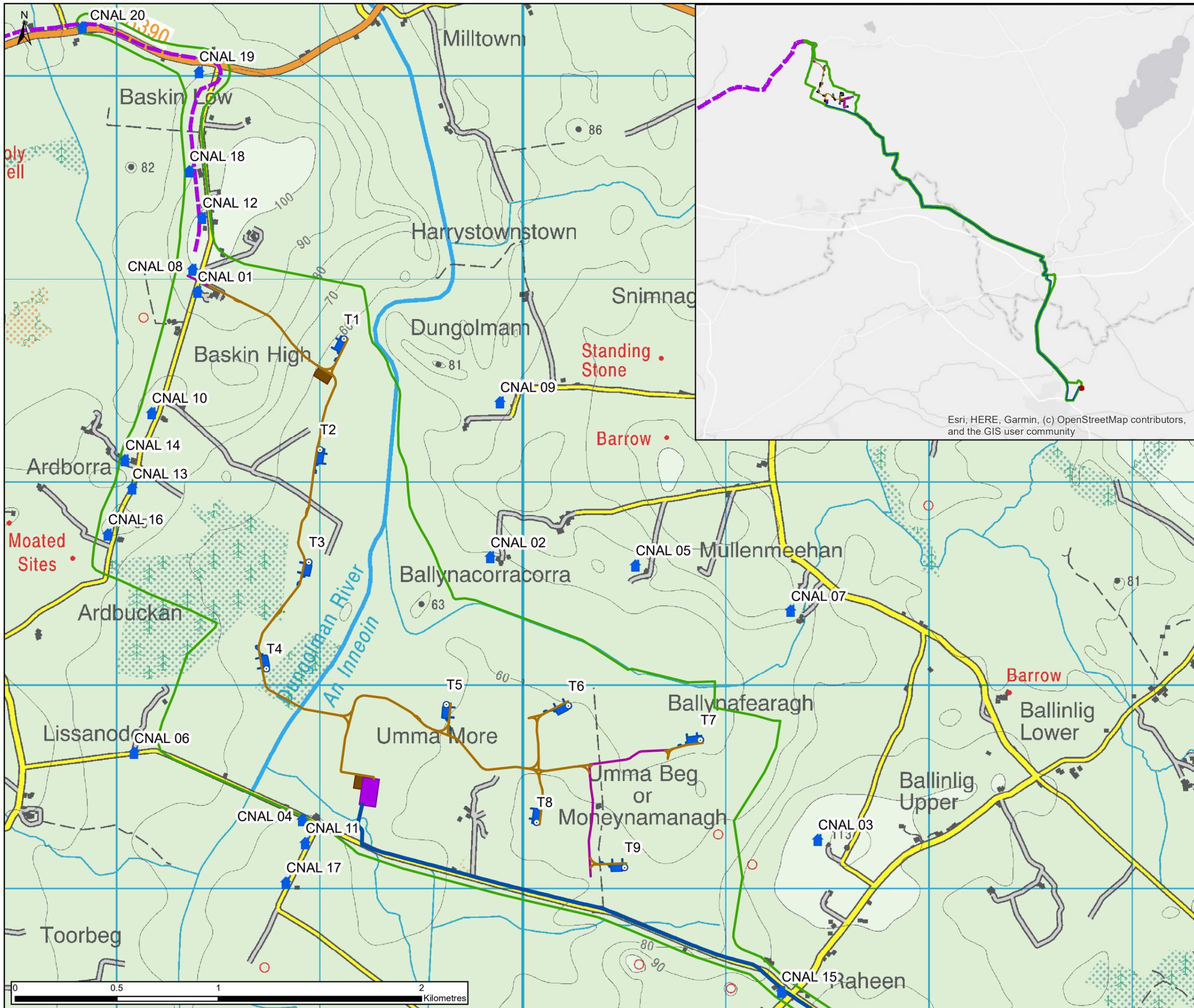
6 Summary

- 6.1.1 The noise impact assessment has considered the existing noise environment at local residential receptors to determine appropriate noise threshold levels for construction activities.
- 6.1.2 Noise propagation modelling has been undertaken in accordance with ISO 9613-2:1996 and the anticipated noise immission levels presented for scenarios likely to occur during the construction period. The modelled scenarios consider the 'noisiest' activities that are likely to occur across a number of scenarios and the modelling assumes that activities are occurring at the locations within the development site that are closest to the NSRs.
- 6.1.3 There will be short periods of time where noise levels may exceed the BS 5228 threshold levels, however, this will only occur when activities associated with the construction of the grid connection route occur directly opposite a residential property. The duration of such activities at any given receptor is anticipated to be short, therefore no significant impacts are anticipated. Where DD activities are required for watercourse, culvert and drain crossings, best practice mitigation measures should be employed in line with recommendations made in BS 5228 to reduce noise emissions. If DD activities are required for watercourse crossings 3, 7 or 11, then temporary noise barriers, or similar, should be installed to reduce noise levels at the nearest dwellings.
- 6.1.4 The predicted levels for the construction of the Wind Farm Site (as opposed to the Grid Connection) are below the Category A Daytime and Evening and Weekend Threshold Levels, as detailed within BS 5228:2009, for all receptors. Accordingly, construction noise impacts are below the indicator for a potential significant effect.
- 6.1.5 An assessment of noise levels that may occur during the night-time, for example, from the use of generators to power on-site lighting, has indicated that levels will remain below the Category A Night-time Threshold Levels.
- 6.1.6 The assessment concludes that construction noise levels would remain below the indicator for a potential significant effect.

7 References

1. **British Standards Institute.** *Code of practice for noise and vibration control on construction and open sites. Noise.* UK : BSI, 2014. BS 5228-1:2009+A1:2014 .
2. **(ISO), International Organisation for Standardisation.** *Acoustics – Attenuation of Sound During Propagation Outdoors: Part 2 – General Method of Calculation.* Geneva : ISO, 1996. ISO 9613-2:1996.
3. **Forestry Commission.** *Noise Hazards in Forestry Operations and Selection of Personal Protective Equipment.* Edinburgh : The Crown, 2003.

Annex A – Figures



LEGEND

- EIA Site Boundary
- Construction Noise Assessment Locations - CNALs
- Proposed Turbine Layout
- Proposed Grid Connection
- Proposed New Roads
- Proposed Turbine Delivery Route
- Proposed Upgrades to Existing Roads
- Proposed Hardstands
- Proposed Met Mast
- Proposed Onsite Substation
- Proposed Temporary Construction Compounds
- Proposed Turbine Foundation
- Thomsbury 110kV Substation

Rev.	Date	Amendment Details	Drw'n	Chk'd	App'd
01	01/02/23	Minor Updates	GC	JB	JB
00	02/12/22	For Planning	AD	JB	JB



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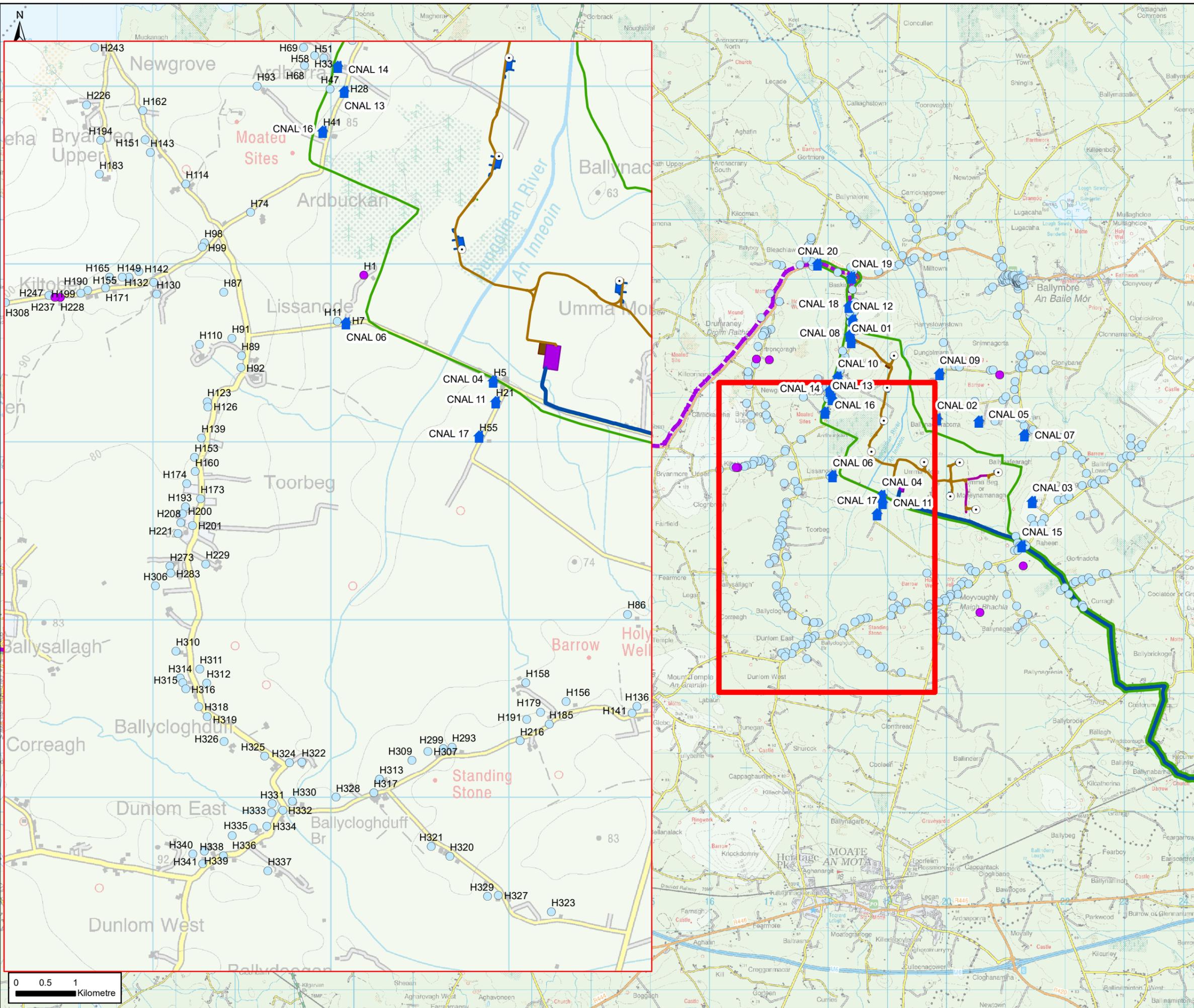
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Project Title: **Umma More Renewable Energy Development**

Drawing Title: **Figure A1.1 Construction Noise Assessment - Site Layout**

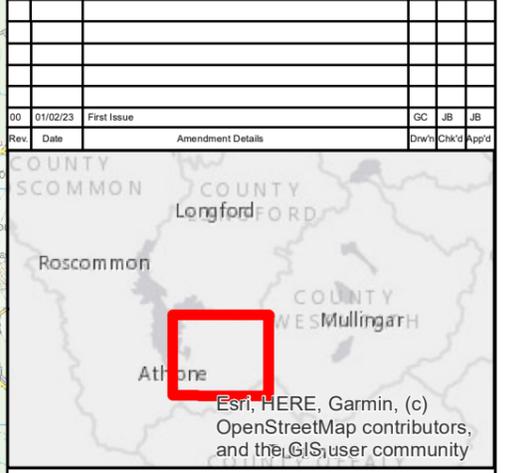
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Original Size	Date	Date	Date	Date
A3	02/12/2022	02/12/2022	02/12/2022	02/12/2022

Drawing Number: **14373 - 006** Revision: **1**



- ### NOTES
- EIAR Site Boundary
 - Proposed Turbine Layout
 - Construction Noise Assessment Locations - CNALs
 - Noise Sensitive Receptor (NSR)
 - Derelict Property
 - Proposed Grid Connection
 - Proposed New Roads
 - Proposed New Roads
 - Proposed Turbine Delivery Route
 - Proposed Upgrades to Existing Roads
 - Proposed Hardstands
 - Proposed Met Mast
 - Proposed Onsite Substation
 - Proposed Temporary Construction Compounds
 - Proposed Turbine Foundation
 - Thomsbury 110kV Substation

Rev	Date	Amendment Details	Drawn	Chkd	App'd
00	01/02/23	First Issue		GC	JB



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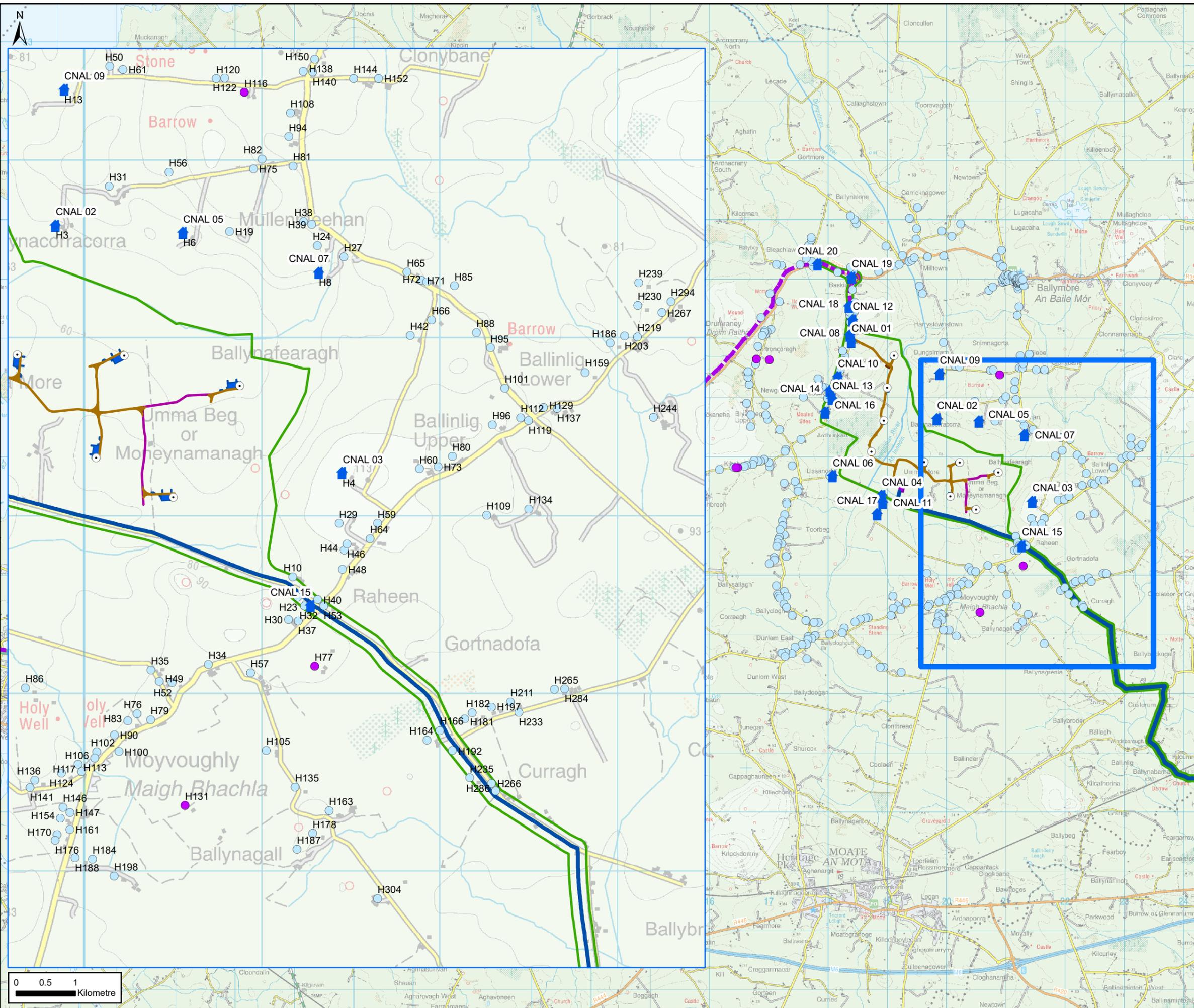
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FOR PLANNING

Project Title
Umma More Renewable Energy Development

Drawing Title
Figure A1.1a – Noise Sensitive Receptors - Inset A

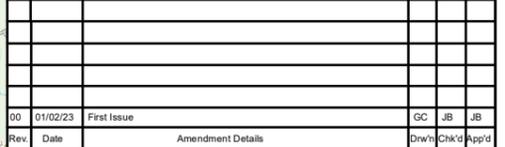
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A3	01/02/2023	01/02/2023	01/02/2023	01/02/2023
Drawing Number				Revision
14373-013				0





- ### NOTES
- EIAR Site Boundary
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 - Derelict Property
 - Proposed Turbine Layout
 - Proposed Grid Connection
 - Proposed New Roads
 - Proposed New Roads
 - Proposed Turbine Delivery Route
 - Proposed Upgrades to Existing Roads
 - Proposed Hardstands
 - Proposed Met Mast
 - Proposed Onsite Substation
 - Proposed Temporary Construction Compounds
 - Proposed Turbine Foundation
 - Thornsbury 110kV Substation

Rev	Date	First Issue	Amendment Details	GC	JB	JB
00	01/02/23	First Issue				



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Drawing Status
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Project Title
Umma More Renewable Energy Development

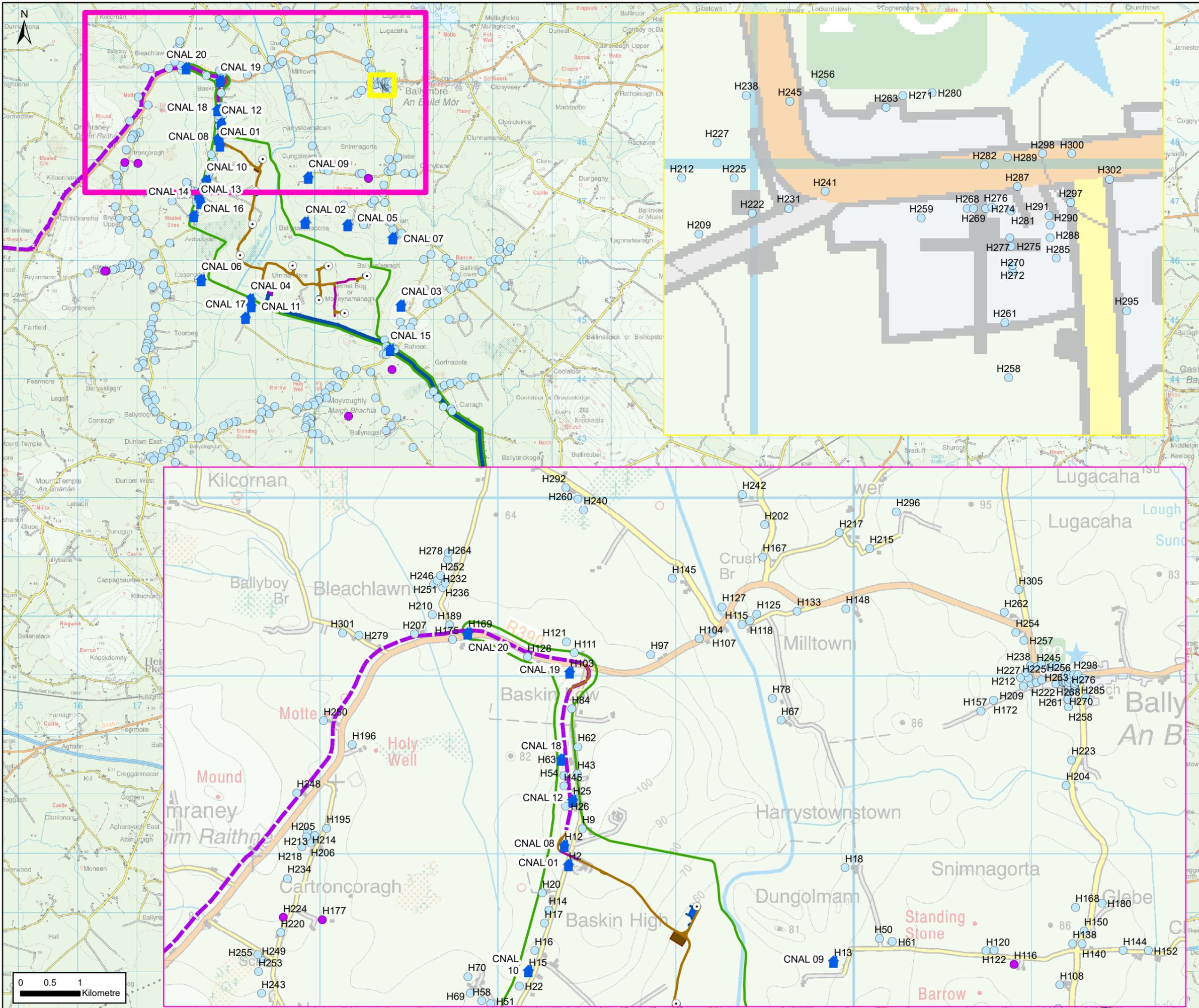
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Figure A1.1b – Noise Sensitive Receptors - Inset B

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Original Size	Date	Date	Date	Date
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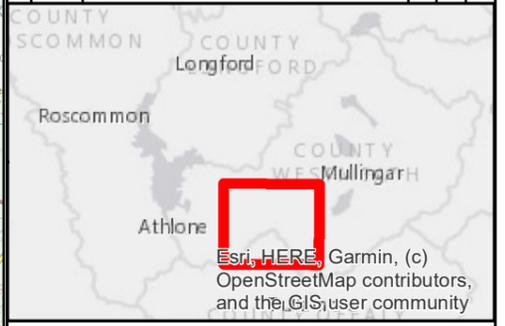
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Revision
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- ### NOTES
- EIAR Site Boundary
 - Proposed Turbine Layout
 - Construction Noise Assessment Locations - CNALs
 - Noise Sensitive Receptor (NSR)
 - Derelict Property
 - Proposed Grid Connection
 - Proposed New Roads
 - Proposed New Roads
 - Proposed Turbine Delivery Route
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 - Proposed Onsite Substation
 - Proposed Temporary Construction Compounds
 - Proposed Turbine Foundation
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Rev	Date	First Issue	Amendment Details	GC	JB	JB
00	01/02/23	First Issue				



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Project Title: **Umma More Renewable Energy Development**

Drawing Title: **Figure A1.1c – Noise Sensitive Receptors - Inset C**

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Original Size	Date	Date	Date	Date
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Drawing Number: **14373-015** Revision: **0**

Annex B – Noise Model Data

Modelled Noise Sources

Noise Source	Assumed working location	Data Source	Percentage time on	Number of
Scenario 01	Quarter 1			
Harvester	Forested area to the west of T4.	https://www.forestresearch.gov.uk/documents/4798/fctn7.pdf	100	1
Forwarder	Forested area to the west of T4.	https://www.forestresearch.gov.uk/documents/4798/fctn7.pdf	100	1
Skidder	Forested area to the west of T4.	https://www.forestresearch.gov.uk/documents/4798/fctn7.pdf	100	1
Wheeled excavator	Construction compounds.	BS 5228 C2.14	100	2
Generator for cabins	Construction compounds.	BS 5228 C4.84	100	2
Generator for lighting	Construction compounds.	BS 5228 C4.86	100	2
Dumper, Dozer and Excavator (Line Source)	Roads and track leading in to the site from the north east and down to the southern proposed construction compound.	BS 5228 C4.3, BS 5228 C2.31 and BS 5228 C2.14 respectively.	100	2

Noise Source	Assumed working location	Data Source	Percentage time on	Number of
Scenario 02	Quarter 2			
Harvester	Forested area to the west of T4.	https://www.forestresearch.gov.uk/documents/4798/fctn7.pdf	100	1
Forwarder	Forested area to the west of T4.	https://www.forestresearch.gov.uk/documents/4798/fctn7.pdf	100	1
Skidder	Forested area to the west of T4.	https://www.forestresearch.gov.uk/documents/4798/fctn7.pdf	100	1
Wheeled excavator	Construction compounds and substation.	BS 5228 C4.10	100	3
Generator for cabins	Construction compounds.	BS 5228 C4.84	100	2
Generator for lighting	Construction compounds.	BS 5228 C4.86	100	2

Modelled Noise Sources

Noise Source	Assumed working location	Data Source	Percentage time on	Number of
Scenario 02	Quarter 2			
Dumper, Dozer and Excavator (Line Source)	Roads and track leading in to the site from the north east and down to the southern proposed construction compound.	BS 5228 C4.3, BS 5228 C2.31 and BS 5228 C2.14 respectively.	100	2
Dumper	T1 and T2 hardstands and foundations.	BS 5228 C4.3	100	4
Dozer	T1 and T2 hardstands.	BS 5228 C2.31	100	2
Tracked Excavator	T1 and T2 hardstands.	BS 5228 C2.14	100	2
Vibratory roller	T1 and T2 hardstands.	BS 5228 C5.20	100	2
Concrete Pouring	T1 and T2 Foundations.	BS 5228 C4.32	100	2
Crane	Substation.	BS 5228 C4.45	100	1
Lorry	Substation.	BS 5228 C11.14	100	1
Concrete mixer truck + truck mounted concrete pump + boom arm and Tracked Excavator (Line Source)	The first 4 km of the grid connection route.	BS 5228 C4.32 and BS 5228 C2.14, respectively.	100	2

Noise Source	Assumed working location	Data Source	Percentage time on	Number of
Scenario 03	Quarter 3			
Harvester	Forested area to the west of T4.	https://www.forestry.gov.uk/documents/4798/fctn7.pdf	100	1
Forwarder	Forested area to the west of T4.	https://www.forestry.gov.uk/documents/4798/fctn7.pdf	100	1
Skidder	Forested area to the west of T4.	https://www.forestry.gov.uk/documents/4798/fctn7.pdf	100	1

Modelled Noise Sources

Noise Source	Assumed working location	Data Source	Percentage time on	Number of
Scenario 03	Quarter 3			
Wheeled excavator	Construction compounds and substation.	BS 5228 C4.10	100	3
Generator for cabins	Construction compounds.	BS 5228 C4.84	100	2
Generator for lighting	Construction compounds.	BS 5228 C4.86	100	2
Dumper, Dozer and Excavator (Line Source)	Roads and track continuing from previously established routes.	BS 5228 C4.3, BS 5228 C2.31 and BS 5228 C2.14 respectively.	100	3
Dumper	T3 and T4 hardstands and foundations.	BS 5228 C4.3	100	4
Dozer	T3 and T4 hardstands.	BS 5228 C2.31	100	2
Tracked Excavator	T3 and T4 hardstands.	BS 5228 C2.14	100	2
Vibratory roller	T3 and T4 hardstands.	BS 5228 C5.20	100	2
Concrete Pouring	T3 and T4 Foundations.	BS 5228 C4.32	100	2
Crane	Substation.	BS 5228 C4.45	100	1
Lorry	Substation.	BS 5228 C11.14	100	1
Concrete mixer truck + truck mounted concrete pump + boom arm and Tracked Excavator (Line Source)	The first 4 km of the grid connection route.	BS 5228 C4.32 and BS 5228 C2.14, respectively.	100	2

Noise Source	Assumed working location	Data Source	Percentage time on	Number of
Scenario 04	Quarter 4			
Harvester	Forested area to the west of T4.	https://www.forestrsearch.gov.uk/documents/4798/fctn7.pdf	100	1
Forwarder	Forested area to the west of T4.	https://www.forestrsearch.gov.uk/documents/4798/fctn7.pdf	100	1
Skidder	Forested area to the west of T4.	https://www.forestrsearch.gov.uk/doc	100	1

Modelled Noise Sources

Noise Source	Assumed working location	Data Source	Percentage time on	Number of
Scenario 04	Quarter 4			
		uments/4798/fctn7.pdf		
Wheeled excavator	Construction compounds and substation.	BS 5228 C4.10	100	3
Generator for cabins	Construction compounds.	BS 5228 C4.84	100	2
Generator for lighting	Construction compounds.	BS 5228 C4.86	100	2
Dumper, Dozer and Excavator (Line Source)	Roads and track continuing from previously established routes.	BS 5228 C4.3, BS 5228 C2.31 and BS 5228 C2.14 respectively.	100	3
Dumper	T5 hardstand and foundation.	BS 5228 C4.3	100	2
Dozer	T5 hardstand.	BS 5228 C2.31	100	1
Tracked Excavator	T5 hardstand.	BS 5228 C2.14	100	1
Vibratory roller	T5 hardstand.	BS 5228 C5.20	100	1
Concrete Pouring	T5 Foundations.	BS 5228 C4.32	100	1
Crane	Substation.	BS 5228 C4.45	100	1
Lorry	Substation.	BS 5228 C11.14	100	1
Concrete mixer truck + truck mounted concrete pump + boom arm and Tracked Excavator (Line Source)	The first 4 km of the grid connection route.	BS 5228 C4.32 and BS 5228 C2.14, respectively.	100	2

Noise Source	Assumed working location	Data Source	Percentage time on	Number of
Scenario 05	Quarter 5			
Harvester	Forested area to the west of T4.	https://www.forestry.gov.uk/documents/4798/fctn7.pdf	100	1
Forwarder	Forested area to the west of T4.	https://www.forestry.gov.uk/documents/4798/fctn7.pdf	100	1
Skidder	Forested area to the west of T4.	https://www.forestry.gov.uk/documents/4798/fctn7.pdf	100	1
Wheeled excavator	Construction compounds,	BS 5228 C4.10	100	15

Modelled Noise Sources

Noise Source	Assumed working location	Data Source	Percentage time on	Number of
Scenario 05	Quarter 5			
	substation and backfilling locations.			
Generator for cabins	Construction compounds.	BS 5228 C4.84	100	2
Generator for lighting	Construction compounds.	BS 5228 C4.86	100	2
Dumper, Dozer and Excavator (Line Source)	Roads and track continuing from previously established routes.	BS 5228 C4.3, BS 5228 C2.31 and BS 5228 C2.14 respectively.	100	3
Dumper	T6 and T8 hardstands, foundations and backfilling locations.	BS 5228 C4.3	100	14
Dozer	T6 and T8 hardstands.	BS 5228 C2.31	100	2
Tracked Excavator	T6 and T8 hardstands.	BS 5228 C2.14	100	2
Vibratory roller	T6 and T8 hardstands.	BS 5228 C5.20	100	2
Concrete Pouring	T6 and T8 Foundations.	BS 5228 C4.32	100	2
Crane	Substation and T1, T2 and T3 hardstands.	BS 5228 C4.45	100	7
Lorry	Substation.	BS 5228 C11.14	100	1
Concrete mixer truck + truck mounted concrete pump + boom arm and Tracked Excavator (Line Source)	The first 4 km of the grid connection route.	BS 5228 C4.32 and BS 5228 C2.14, respectively.	100	2
Lorry (Line Source)	Along turbine delivery route to the northwest construction compound.	BS 5228 C11.14	100	2

Noise Source	Assumed working location	Data Source	Percentage time on	Number of
Scenario 06	Quarter 6			
Harvester	Forested area to the west of T4.	https://www.forestreresearch.gov.uk/documents/4798/fctn7.pdf	100	1

Modelled Noise Sources

Noise Source	Assumed working location	Data Source	Percentage time on	Number of
Scenario 06	Quarter 6			
Forwarder	Forested area to the west of T4.	https://www.forestry.gov.uk/documents/4798/fctn7.pdf	100	1
Skidder	Forested area to the west of T4.	https://www.forestry.gov.uk/documents/4798/fctn7.pdf	100	1
Wheeled excavator	Construction compounds, substation and backfilling locations.	BS 5228 C4.10	100	15
Generator for cabins	Construction compounds.	BS 5228 C4.84	100	2
Generator for lighting	Construction compounds.	BS 5228 C4.86	100	2
Dumper	T7 and T9 hardstands, foundations and backfilling locations.	BS 5228 C4.3	100	14
Dozer	T7 and T9 hardstands.	BS 5228 C2.31	100	2
Tracked Excavator	T7 and T9 hardstands.	BS 5228 C2.14	100	2
Vibratory roller	T7 and T9 hardstands.	BS 5228 C5.20	100	2
Concrete Pouring	T7 and T9 Foundations.	BS 5228 C4.32	100	2
Crane	Substation and T4, T5 and T8 hardstands.	BS 5228 C4.45	100	7
Lorry	Substation.	BS 5228 C11.14	100	1
Concrete mixer truck + truck mounted concrete pump + boom arm and Tracked Excavator (Line Source)	The first 4 km of the grid connection route.	BS 5228 C4.32 and BS 5228 C2.14, respectively.	100	2
Lorry (Line Source)	Along turbine delivery route to the northwest construction compound.	BS 5228 C11.14	100	2

Modelled Noise Sources

Noise Source	Assumed working location	Data Source	Percentage time on	Number of
Scenario 07	Quarter 7			
Harvester	Forested area to the west of T4.	https://www.forestrsearch.gov.uk/documents/4798/fctn7.pdf	100	1
Forwarder	Forested area to the west of T4.	https://www.forestrsearch.gov.uk/documents/4798/fctn7.pdf	100	1
Skidder	Forested area to the west of T4.	https://www.forestrsearch.gov.uk/documents/4798/fctn7.pdf	100	1
Wheeled excavator	Construction compounds, substation and backfilling locations.	BS 5228 C4.10	100	15
Generator for cabins	Construction compounds.	BS 5228 C4.84	100	2
Generator for lighting	Construction compounds.	BS 5228 C4.86	100	2
Dumper	Backfilling locations.	BS 5228 C4.3	100	12
Crane	Substation and T6, T7 and T9 hardstands.	BS 5228 C4.45	100	7
Lorry	Substation.	BS 5228 C11.14	100	1
Concrete mixer truck + truck mounted concrete pump + boom arm and Tracked Excavator (Line Source)	The first 4 km of the grid connection route.	BS 5228 C4.32 and BS 5228 C2.14, respectively.	100	2
Lorry (Line Source)	Along turbine delivery route to the northwest construction compound.	BS 5228 C11.14	100	2

Noise Source	Assumed working location	Data Source	Percentage time on	Number of
Scenario 08	Quarter 8			
Harvester	Forested area to the west of T4.	https://www.forestrsearch.gov.uk/documents/4798/fctn7.pdf	100	1
Forwarder	Forested area to the west of T4.	https://www.forestrsearch.gov.uk/doc	100	1

Modelled Noise Sources

Noise Source	Assumed working location	Data Source	Percentage time on	Number of
Scenario 08	Quarter 8			
		uments/4798/fctn7.pdf		
Skidder	Forested area to the west of T4.	https://www.forestry.gov.uk/documents/4798/fctn7.pdf	100	1
Wheeled excavator	Construction compounds and backfilling locations.	BS 5228 C4.10	100	14
Generator for cabins	Construction compounds.	BS 5228 C4.84	100	2
Generator for lighting	Construction compounds.	BS 5228 C4.86	100	2
Dumper	Backfilling locations.	BS 5228 C4.3	100	12

Noise Source	Assumed working location	Data Source	Percentage time on	Number of
Scenario 09	Night-time			
Generator for cabins	Construction compounds.	BS 5228 C4.84	100	4
Generator for lighting	Construction compounds.	BS 5228 C4.86	100	4

Modelled Noise Sources

Noise Source Library – Sound Power Levels

Name	BS5228 Reference	31.5	63	125	250	500	1k	2k	4k	8k	A	lin	Source
Harvester	-					103					103	106	Noise Hazards in Forestry Operations and Selection of Personal Protective Equipment
Forwarder	-					101					101	104	Noise Hazards in Forestry Operations and Selection of Personal Protective Equipment
Skidder	-					108					108	111	Noise Hazards in Forestry Operations and Selection of Personal Protective Equipment
Tracked Excavator	C2. 14	28	113	106	105	105	101	99	96	91	107	115	BS 5228-1:2009+A1:2014
Dump Truck (empty)	C2. 31	28	114	107	107	107	107	112	97	88	115	118	BS 5228-1:2009+A1:2014
Dumper	C4. 3	28	112	109	102	101	100	96	89	81	104	115	BS 5228-1:2009+A1:2014
Wheeled Excavator	C4. 10	28	92	88	91	92	90	85	79	73	94	98	BS 5228-1:2009+A1:2014
Concrete mixer truck	C4. 20	28	111	102	94	97	98	106	88	83	108	113	BS 5228-1:2009+A1:2014

Modelled Noise Sources

Noise Source Library – Sound Power Levels

Name	BS5228 Reference	31.5	63	125	250	500	1k	2k	4k	8k	A	lin	Source
Concrete mixer truck + truck mounted concrete pump + boom arm	C4. 32	28	101	101	105	104	100	98	93	90	106	110	BS 5228-1:2009+A1:2014
Mobile telescopic crane	C4. 45	28	118	109	106	102	105	104	97	89	109	119	BS 5228-1:2009+A1:2014
Diesel generator	C4. 84	28	103	100	104	98	97	93	84	75	102	108	BS 5228-1:2009+A1:2014
Diesel generator	C4. 86	28	106	99	94	90	87	83	84	77	94	107	BS 5228-1:2009+A1:2014
Water pump (diesel)	C4. 88	28	98	93	94	92	92	91	84	74	97	102	BS 5228-1:2009+A1:2014
Vibratory roller	C5. 20	28	118	110	101	100	98	93	87	82	103	119	BS 5228-1:2009+A1:2014
Road lorry (full)	C6. 21	28	124	110	102	101	105	100	99	92	109	124	BS 5228-1:2009+A1:2014
Tracked mobile drilling rig	C9. 3	28	105	111	110	112	113	113	112	107	119	120	BS 5228-1:2009+A1:2014
Excavator mounted rock breaker	C9. 12	28	119	117	113	117	115	115	112	108	121	125	BS 5228-1:2009+A1:2014
Tracked semi-mobile crusher	C9. 15	28	119	119	116	115	113	111	106	96	118	124	BS 5228-1:2009+A1:2014

Modelled Noise Sources

Noise Source Library – Sound Power Levels

Name	BS5228 Reference	31.5	63	125	250	500	1k	2k	4k	8k	A	lin	Source
Rigid dump truck	C9. 17	28	114	117	116	116	114	111	104	98	119	123	BS 5228-1:2009+A1:2014
Lorry	C11. 14	28	121	107	104	102	101	100	97	94	107	121	BS 5228-1:2009+A1:2014

Annex C – Noise Sensitive Receptor Results

NSR	ITM Coordinates		Dwelling Status	Scenario									
	Eastings	Northings		1	2	3	4	5	6	7	8	Night	
H1	619772	745304	Derelict	-	-	-	-	-	-	-	-	-	-
H2	618399	747936	Dwelling	35	40	35	32	40	37	36	34	26	
H3	619841	746630	Dwelling	31	38	40	41	44	43	42	38	25	
H4	621453	745239	Dwelling	22	29	30	31	38	41	40	34	16	
H5	618915	745338	Dwelling	40	47	48	48	49	50	45	45	38	
H6	620556	746589	Dwelling	26	32	32	33	40	40	40	34	19	
H7	618087	745667	Dwelling	37	39	42	39	41	43	39	39	24	
H8	621320	746366	Dwelling	21	27	27	28	35	38	37	31	14	
H9	618475	748140	Dwelling	32	39	32	29	38	34	34	33	25	
H10	621172	744654	Dwelling	21	38	38	38	39	41	37	32	14	
H11	618036	745676	Dwelling	37	39	42	39	41	42	39	39	24	
H12	618376	748045	Dwelling	35	39	34	31	39	36	35	33	25	
H13	619889	747394	Dwelling	29	38	33	31	39	36	35	34	24	
H14	618287	747683	Dwelling	31	39	34	33	39	36	35	34	26	
H15	618174	747340	Dwelling	31	38	37	33	39	37	35	34	25	
H16	618208	747455	Dwelling	31	38	35	32	39	35	34	34	25	
H17	618264	747610	Dwelling	31	39	34	31	39	35	34	34	26	
H18	619952	747921	Dwelling	26	37	30	29	37	33	32	31	23	
H19	620818	746596	Dwelling	25	32	33	34	41	42	41	35	19	
H20	618250	747779	Dwelling	31	38	34	31	38	35	34	33	25	
H21	618929	745223	Dwelling	38	46	47	46	48	48	44	43	36	
H22	618121	747256	Dwelling	31	38	38	34	40	38	36	35	24	
H23	621200	744540	Dwelling	20	31	31	32	35	38	36	30	13	
H24	621312	746517	Dwelling	22	27	27	28	34	37	36	30	15	

NSR	ITM Coordinates		Dwelling Status	Scenario								
	Eastings	Northings		1	2	3	4	5	6	7	8	Night
H25	618422	748301	Dwelling	28	36	30	28	39	37	37	31	23
H26	618380	748267	Dwelling	29	36	30	28	39	38	38	31	23
H27	621461	746453	Dwelling	21	27	27	28	36	39	38	31	15
H28	618077	746968	Dwelling	33	40	39	35	42	39	37	36	23
H29	621434	744955	Dwelling	21	26	27	28	34	38	37	31	13
H30	621149	744413	Dwelling	20	28	28	29	34	37	35	30	13
H31	620140	746850	Dwelling	28	35	34	36	41	40	40	35	22
H32	621238	744491	Dwelling	20	31	31	31	35	38	35	30	13
H33	618042	747109	Dwelling	32	39	39	34	41	39	36	35	23
H34	620699	744161	Dwelling	21	26	27	28	34	36	34	30	14
H35	620376	744130	Dwelling	23	31	32	31	37	38	35	31	19
H36	621274	744492	Dwelling	20	31	32	32	35	38	35	29	13
H37	621203	744407	Dwelling	20	29	29	30	34	37	35	29	13
H38	621233	746652	Dwelling	22	28	27	28	34	36	35	30	15
H39	621280	746636	Dwelling	22	28	27	28	34	36	35	29	15
H40	621314	744527	Dwelling	20	31	31	31	35	37	35	29	13
H41	617957	746743	Dwelling	34	37	40	36	41	40	37	37	22
H42	621833	746010	Dwelling	20	25	27	28	34	36	34	29	14
H43	618447	748447	Dwelling	27	35	29	27	35	32	32	30	22
H44	621462	744804	Dwelling	20	26	27	27	34	37	35	30	13
H45	618372	748380	Dwelling	26	34	29	26	34	32	31	29	20
H46	621478	744839	Dwelling	20	26	27	27	34	37	35	30	13
H47	617996	746982	Dwelling	32	38	37	34	40	37	35	35	22
H48	621453	744698	Dwelling	20	27	27	28	34	37	35	29	13
H49	620423	744066	Dwelling	23	31	31	32	37	38	35	31	18

NSR	ITM Coordinates		Dwelling Status	Scenario								
	Eastings	Northings		1	2	3	4	5	6	7	8	Night
H50	620144	747524	Dwelling	27	37	31	30	38	34	33	31	22
H51	617960	747157	Dwelling	31	36	36	32	37	35	34	33	22
H52	620494	744059	Dwelling	22	28	29	29	35	37	34	30	17
H53	621347	744492	Dwelling	20	31	31	31	35	37	34	29	13
H54	618372	748440	Dwelling	26	33	29	26	38	37	37	29	20
H55	618835	745029	Dwelling	35	42	43	43	44	45	40	40	31
H56	620477	746929	Dwelling	26	34	34	35	40	40	39	34	20
H57	620936	744114	Dwelling	20	25	26	27	33	35	34	28	13
H58	617910	747172	Dwelling	30	36	35	32	37	35	33	33	21
H59	621651	744955	Dwelling	19	25	25	26	33	36	34	29	12
H60	621886	745261	Dwelling	18	24	24	25	32	35	33	28	11
H61	620218	747506	Dwelling	27	36	31	30	37	34	33	32	24
H62	618449	748599	Dwelling	26	33	28	26	34	31	31	28	20
H63	618359	748530	Dwelling	26	33	28	26	40	40	40	28	20
H64	621608	744868	Dwelling	19	25	26	26	33	36	34	29	12
H65	621814	746367	Dwelling	19	25	25	25	32	34	33	27	12
H66	621953	746099	Dwelling	19	24	27	25	32	34	33	27	12
H67	619592	748749	Dwelling	23	33	27	25	33	29	28	28	19
H68	617851	747114	Dwelling	30	35	35	32	37	35	33	33	21
H69	617846	747216	Dwelling	30	35	34	31	36	34	33	32	21
H70	617831	747309	Dwelling	29	35	34	31	36	34	32	32	21
H71	621896	746322	Dwelling	19	24	24	25	31	34	32	27	12
H72	621926	746313	Dwelling	19	24	24	25	31	34	32	27	12
H73	621990	745273	Dwelling	18	23	24	25	31	34	33	27	11
H74	617548	746289	Dwelling	32	36	38	35	38	38	35	35	20

NSR	ITM Coordinates		Dwelling Status	Scenario								
	Eastings	Northings		1	2	3	4	5	6	7	8	Night
H75	620952	746948	Dwelling	23	29	28	29	35	35	34	30	16
H76	620298	743884	Dwelling	22	26	28	28	33	35	33	28	15
H77	621296	744152	Derelict	-	-	-	-	-	-	-	-	-
H78	619544	748873	Dwelling	23	32	26	24	32	29	28	27	18
H79	620373	743851	Dwelling	21	26	27	27	32	34	32	28	14
H80	622071	745331	Dwelling	18	23	23	24	31	33	32	26	11
H81	621174	746964	Dwelling	22	28	27	27	33	34	33	28	15
H82	621000	747004	Dwelling	22	29	28	28	34	34	33	29	16
H83	620245	743844	Dwelling	22	27	29	28	33	35	32	28	15
H84	618416	748813	Dwelling	32	34	27	25	33	31	30	27	19
H85	622082	746291	Dwelling	18	24	23	24	30	33	31	26	11
H86	619669	744029	Dwelling	24	28	30	30	35	36	33	30	18
H87	617397	745840	Dwelling	31	34	35	34	36	36	34	33	19
H88	622205	746027	Dwelling	17	23	23	24	30	32	31	25	10
H89	617498	745482	Dwelling	30	32	34	32	34	34	32	32	17
H90	620170	743767	Dwelling	22	27	28	28	33	35	32	28	16
H91	617444	745580	Dwelling	30	33	35	34	35	36	34	33	19
H92	617494	745416	Dwelling	30	32	34	32	34	34	32	32	17
H93	617586	746998	Dwelling	30	34	34	31	35	34	32	32	19
H94	621151	747129	Dwelling	22	28	27	27	33	33	32	28	15
H95	622285	745942	Dwelling	17	23	23	23	29	32	30	25	10
H96	622295	745509	Dwelling	17	22	23	23	29	32	30	25	10
H97	618860	749119	Dwelling	24	31	25	23	30	27	26	25	17
H98	617289	746117	Dwelling	30	34	36	33	36	36	33	33	18
H99	617278	746093	Dwelling	30	34	36	33	36	36	33	33	18

NSR	ITM Coordinates		Dwelling Status	Scenario								
	Eastings	Northings		1	2	3	4	5	6	7	8	Night
H100	620195	743672	Dwelling	21	25	27	27	32	33	31	27	14
H101	622364	745714	Dwelling	17	22	22	23	29	32	30	25	10
H102	620071	743671	Dwelling	21	26	27	27	32	33	31	27	14
H103	618406	749020	Dwelling	38	39	25	23	32	31	31	25	16
H104	619132	749208	Dwelling	22	30	25	23	30	27	26	25	17
H105	621024	743677	Dwelling	18	24	25	25	30	32	30	26	11
H106	620058	743635	Dwelling	21	26	27	27	31	33	30	27	14
H107	619204	749238	Dwelling	22	30	25	23	30	27	26	25	16
H108	621159	747263	Dwelling	22	28	27	27	32	32	31	27	15
H109	622263	745001	Dwelling	17	22	23	23	29	32	30	25	10
H110	617260	745546	Dwelling	29	31	32	30	33	33	31	30	16
H111	618430	749128	Dwelling	36	36	25	23	31	30	29	25	16
H112	622455	745549	Dwelling	16	22	22	22	28	31	29	24	9
H113	619965	743600	Dwelling	21	25	27	27	31	32	30	27	14
H114	617184	746449	Dwelling	29	32	33	32	34	34	32	31	17
H115	619373	749288	Dwelling	21	29	24	22	30	26	25	25	16
H116	620901	747378	Derelict	-	-	-	-	-	-	-	-	-
H117	619986	743558	Dwelling	21	25	26	27	31	32	30	26	14
H118	619416	749308	Dwelling	21	29	24	22	29	26	25	24	16
H119	622499	745533	Dwelling	16	22	22	22	28	31	29	24	9
H120	620743	747454	Dwelling	23	31	28	28	33	32	31	28	17
H121	618385	749190	Dwelling	32	34	25	23	36	36	36	24	16
H122	620790	747458	Dwelling	23	30	28	27	33	32	31	28	17
H123	617304	745225	Dwelling	28	30	32	30	32	32	30	30	16
H124	619873	743551	Dwelling	21	25	27	27	31	32	30	26	14

NSR	ITM Coordinates		Dwelling Status	Scenario								
	Eastings	Northings		1	2	3	4	5	6	7	8	Night
H125	619455	749346	Dwelling	20	29	24	22	29	26	25	24	15
H126	617308	745196	Dwelling	28	30	32	30	32	32	30	30	16
H127	619260	749386	Dwelling	21	29	24	22	29	26	25	24	15
H128	618167	749104	Dwelling	29	32	25	23	43	43	43	25	16
H129	622583	745605	Dwelling	16	21	21	22	28	30	28	23	9
H130	617020	745829	Dwelling	27	30	31	29	32	32	30	29	15
H131	620567	743369	Derelict	-	-	-	-	-	-	-	-	-
H132	617004	745897	Dwelling	27	30	31	29	31	31	29	29	15
H133	619682	749362	Dwelling	20	28	24	22	29	26	25	24	15
H134	622500	745035	Dwelling	16	22	22	22	28	30	29	24	9
H135	621187	743472	Dwelling	17	23	24	24	29	31	28	24	10
H136	619721	743511	Dwelling	21	25	26	27	31	32	29	26	14
H137	622660	745602	Dwelling	16	21	21	21	27	30	28	23	8
H138	621232	747495	Dwelling	21	28	26	25	31	31	30	26	15
H139	617273	745020	Dwelling	27	30	31	30	32	32	30	29	16
H140	621284	747492	Dwelling	21	27	26	25	31	31	30	26	14
H141	619694	743471	Dwelling	21	25	26	26	30	31	29	26	14
H142	616921	745956	Dwelling	27	29	31	28	31	31	29	29	14
H143	616985	746625	Dwelling	27	31	33	30	34	34	31	30	16
H144	621515	747456	Dwelling	20	26	25	24	30	30	29	25	13
H145	618979	749547	Dwelling	22	28	23	21	28	25	24	23	14
H146	619881	743357	Dwelling	20	24	25	25	30	31	28	25	13
H147	619920	743330	Dwelling	20	24	25	25	30	31	28	25	13
H148	619957	749376	Dwelling	19	28	23	22	28	25	24	23	14
H149	616865	745925	Dwelling	27	29	30	28	31	31	29	28	14

NSR	ITM Coordinates		Dwelling Status	Scenario								
	Eastings	Northings		1	2	3	4	5	6	7	8	Night
H150	621296	747565	Dwelling	20	27	25	25	31	30	29	26	14
H151	616956	746698	Dwelling	27	31	33	30	33	34	31	29	16
H152	621656	747456	Dwelling	19	26	24	24	29	30	28	25	12
H153	617233	744911	Dwelling	27	29	31	29	31	32	29	29	16
H154	619866	743296	Dwelling	20	24	25	25	29	31	28	25	13
H155	616827	745925	Dwelling	26	29	30	28	31	31	30	28	14
H156	619323	743538	Dwelling	23	30	31	31	34	34	30	28	17
H157	620715	748801	Dwelling	20	27	24	23	29	27	25	24	14
H158	619097	743644	Dwelling	24	30	32	31	34	35	30	29	18
H159	622817	745804	Dwelling	15	21	21	21	27	29	27	22	8
H160	617237	744831	Dwelling	26	30	33	31	33	34	30	29	17
H161	619919	743235	Dwelling	19	24	25	25	29	30	28	25	12
H162	616942	746861	Dwelling	26	30	32	30	32	33	30	29	16
H163	621377	743339	Dwelling	16	22	23	23	28	29	27	23	9
H164	621928	743736	Dwelling	16	41	41	41	41	41	27	23	8
H165	616755	745926	Dwelling	26	30	31	29	32	32	30	28	15
H166	621999	743791	Dwelling	16	45	45	45	45	45	27	23	8
H167	619490	749666	Dwelling	19	27	23	21	27	25	23	22	13
H168	621246	747697	Dwelling	20	27	25	25	30	30	29	26	14
H169	617833	749239	Dwelling	23	28	24	22	43	43	43	23	14
H170	619847	743205	Dwelling	19	24	25	25	29	30	28	25	12
H171	616733	745865	Dwelling	26	28	29	27	30	30	28	27	13
H172	620786	748861	Dwelling	19	27	23	22	28	26	25	23	14
H173	617267	744678	Dwelling	26	30	32	30	33	34	30	29	17
H174	617190	744763	Dwelling	26	28	30	28	30	31	28	28	15

NSR	ITM Coordinates		Dwelling Status	Scenario								
	Eastings	Northings		1	2	3	4	5	6	7	8	Night
H175	617746	749203	Dwelling	22	28	24	22	36	35	35	23	14
H176	619837	743174	Dwelling	19	23	25	25	29	30	27	24	12
H177	617014	747629	Derelict	-	-	-	-	-	-	-	-	-
H178	621285	743211	Dwelling	16	22	22	23	27	29	27	23	9
H179	619179	743479	Dwelling	22	27	28	28	31	32	29	27	16
H180	621396	747721	Dwelling	20	27	25	24	30	29	28	25	13
H181	622139	743857	Dwelling	16	41	41	41	41	41	27	22	8
H182	622182	743890	Dwelling	16	39	39	39	39	39	27	22	8
H183	616698	746502	Dwelling	26	29	32	29	32	33	30	29	15
H184	620047	743067	Dwelling	18	23	24	24	28	29	27	24	11
H185	619228	743411	Dwelling	22	25	27	27	30	31	28	26	14
H186	622957	745968	Dwelling	15	20	20	20	26	28	26	21	8
H187	621197	743124	Dwelling	16	21	22	22	27	29	26	22	9
H188	619949	743075	Dwelling	19	23	24	24	28	29	27	24	11
H189	617729	749285	Dwelling	22	27	24	21	29	27	26	23	14
H190	616632	745851	Dwelling	25	28	29	27	30	30	28	27	13
H191	619102	743437	Dwelling	22	26	27	27	30	31	28	26	14
H192	622071	743677	Dwelling	15	44	44	44	44	44	26	22	8
H193	617183	744634	Dwelling	25	28	30	28	30	31	28	28	15
H194	616705	746694	Dwelling	25	29	32	29	32	32	30	28	15
H195	617038	748142	Dwelling	22	28	26	24	29	27	26	25	15
H196	617182	748612	Dwelling	21	27	25	23	28	26	25	24	14
H197	622290	743923	Dwelling	15	35	35	35	35	36	26	22	8
H198	620168	742971	Dwelling	18	22	23	23	28	29	26	23	11
H199	616593	745833	Dwelling	25	27	29	26	29	30	28	27	13

NSR	ITM Coordinates		Dwelling Status	Scenario								
	Eastings	Northings		1	2	3	4	5	6	7	8	Night
H225	620982	748987	Dwelling	18	26	25	21	28	26	24	23	12
H226	616626	746894	Dwelling	25	29	31	28	32	32	29	28	15
H227	620968	749016	Dwelling	18	26	25	21	28	26	24	23	12
H228	616478	745810	Derelict	24	27	28	26	28	28	26	26	12
H229	617297	744310	Dwelling	24	27	29	28	30	31	28	27	15
H230	623113	746181	Dwelling	15	20	20	20	25	27	25	21	7
H231	621027	748962	Dwelling	18	26	25	21	28	26	24	23	12
H232	617692	749494	Dwelling	21	26	23	21	27	25	24	22	13
H233	622445	743893	Dwelling	15	31	31	31	32	33	26	21	7
H234	616818	747861	Dwelling	23	28	28	27	30	29	27	26	14
H235	622168	743524	Dwelling	15	44	44	44	44	44	25	21	7
H236	617704	749519	Dwelling	21	26	23	20	27	25	24	22	13
H237	616448	745812	Derelict	-	-	-	-	-	-	-	-	-
H238	620992	749055	Dwelling	18	25	25	21	28	26	24	22	12
H239	623118	746308	Dwelling	15	20	21	20	25	27	25	21	7
H240	618482	749931	Dwelling	20	26	22	20	26	23	22	21	12
H241	621057	748976	Dwelling	19	26	25	22	28	27	25	23	12
H242	619374	750018	Dwelling	18	25	21	19	25	23	22	21	12
H243	616672	747215	Dwelling	24	28	28	26	29	28	26	26	14
H244	623201	745551	Dwelling	14	19	19	20	25	27	25	20	6
H245	621028	749050	Dwelling	19	25	25	21	28	26	25	23	14
H246	617638	749511	Dwelling	20	26	23	20	26	24	23	22	13
H247	616414	745822	Dwelling	24	26	28	26	29	29	27	26	12
H248	616870	748341	Dwelling	21	27	25	24	28	28	26	24	13
H249	616673	747402	Dwelling	23	28	27	25	29	27	26	25	14

NSR	ITM Coordinates		Dwelling Status	Scenario								
	Eastings	Northings		1	2	3	4	5	6	7	8	Night
H250	617021	748747	Dwelling	21	26	24	22	27	25	24	23	13
H251	617659	749537	Dwelling	20	26	22	20	26	24	23	22	12
H252	617677	749561	Dwelling	20	26	22	20	26	24	23	22	12
H253	616655	747337	Dwelling	23	28	27	25	29	28	26	25	13
H254	620912	749243	Dwelling	17	25	22	21	26	25	23	21	12
H255	616651	747431	Dwelling	23	27	27	25	28	27	26	25	13
H256	621055	749065	Dwelling	18	27	25	21	29	26	25	23	14
H257	620957	749198	Dwelling	17	25	22	21	26	25	23	22	12
H258	621208	748823	Dwelling	18	27	22	21	29	26	25	23	12
H259	621136	748954	Dwelling	19	27	25	21	29	27	25	23	12
H260	618450	749992	Dwelling	20	25	21	19	25	23	22	21	12
H261	621205	748868	Dwelling	18	27	24	21	29	26	25	23	12
H262	620847	749355	Dwelling	17	25	25	20	27	25	23	22	12
H263	621107	749045	Dwelling	18	27	25	21	29	26	25	23	14
H264	617718	749653	Dwelling	20	26	22	20	26	24	23	21	12
H265	622645	744023	Dwelling	14	23	23	23	26	28	25	21	7
H266	622291	743493	Dwelling	14	45	45	45	45	45	25	21	7
H267	623248	746141	Dwelling	14	20	19	19	25	26	24	20	7
H268	621174	748962	Dwelling	18	27	25	21	29	26	25	23	12
H269	621179	748962	Dwelling	18	27	25	21	29	26	25	23	12
H270	621211	748910	Dwelling	18	27	25	21	29	26	25	23	12
H271	621121	749055	Dwelling	18	27	25	21	29	26	24	23	14
H272	621211	748915	Dwelling	18	27	25	21	29	26	25	23	12
H273	617095	744299	Dwelling	23	26	27	26	29	29	27	25	13
H274	621189	748962	Dwelling	18	27	25	21	29	26	25	23	12

NSR	ITM Coordinates		Dwelling Status	Scenario								
	Eastings	Northings		1	2	3	4	5	6	7	8	Night
H275	621210	748931	Dwelling	18	27	25	21	29	26	24	23	12
H276	621194	748963	Dwelling	18	27	25	21	29	26	25	23	12
H277	621209	748938	Dwelling	18	27	25	21	29	26	24	23	12
H278	617721	749688	Dwelling	20	25	22	20	26	24	22	21	12
H279	617218	749226	Dwelling	20	26	23	21	26	24	23	22	12
H280	621145	749057	Dwelling	18	27	25	21	29	26	24	23	14
H281	621210	748960	Dwelling	18	27	25	21	29	26	25	23	12
H282	621188	748998	Dwelling	18	27	25	21	29	26	24	23	12
H283	617099	744259	Dwelling	23	26	27	26	29	29	27	25	13
H284	622701	744024	Dwelling	14	22	23	23	26	28	25	21	7
H285	621247	748921	Dwelling	18	27	24	21	29	26	24	23	12
H286	622314	743450	Dwelling	14	44	44	44	44	44	25	20	7
H287	621215	748980	Dwelling	18	27	25	21	29	26	24	23	12
H288	621242	748938	Dwelling	18	27	25	21	29	26	24	23	12
H289	621207	749004	Dwelling	18	26	22	21	27	25	24	22	12
H290	621242	748948	Dwelling	17	27	25	21	29	26	24	23	12
H291	621241	748956	Dwelling	18	27	25	21	29	26	24	23	11
H292	618382	750055	Dwelling	19	25	21	19	25	23	22	20	11
H293	618681	743280	Dwelling	21	24	26	25	28	29	26	24	13
H294	623299	746202	Dwelling	14	19	19	19	24	26	24	20	6
H295	621305	748878	Dwelling	17	25	22	21	26	25	24	22	11
H296	620239	749921	Dwelling	17	24	21	19	25	23	22	20	11
H297	621259	748967	Dwelling	18	25	22	21	27	25	24	22	11
H298	621236	749007	Dwelling	17	25	22	21	27	25	24	22	11
H299	618632	743273	Dwelling	21	24	26	25	28	29	26	24	13

NSR	ITM Coordinates		Dwelling Status	Scenario								
	Eastings	Northings		1	2	3	4	5	6	7	8	Night
H300	621260	749007	Dwelling	17	25	22	21	26	25	23	21	11
H301	617128	749240	Dwelling	19	25	23	20	26	24	23	21	12
H302	621291	748986	Dwelling	17	25	22	21	26	25	23	21	11
H303	619513	750200	Dwelling	17	24	20	19	25	22	21	20	11
H304	621651	742845	Dwelling	14	20	21	21	25	26	24	20	7
H305	620929	749482	Dwelling	17	24	24	20	26	25	23	21	11
H306	617013	744188	Dwelling	22	25	26	25	28	29	26	25	12
H307	618546	743257	Dwelling	21	26	28	25	29	29	26	25	13
H308	616170	745781	Dwelling	22	25	26	24	27	28	26	25	11
H309	618456	743208	Dwelling	21	28	29	27	30	30	27	25	15
H310	617129	743821	Dwelling	22	27	27	28	29	30	26	25	13
H311	617263	743721	Dwelling	22	28	29	28	30	31	27	25	14
H312	617302	743641	Dwelling	22	27	29	28	30	31	27	26	14
H313	618274	743103	Dwelling	20	24	26	25	28	28	25	24	13
H314	617152	743671	Dwelling	21	26	27	27	29	30	26	25	13
H315	617168	743642	Dwelling	21	27	28	27	29	30	26	25	13
H316	617184	743609	Dwelling	21	27	28	27	30	30	27	25	13
H317	618241	743025	Dwelling	19	23	24	23	26	27	24	23	11
H318	617257	743509	Dwelling	21	27	28	27	30	30	26	25	13
H319	617305	743455	Dwelling	21	27	28	27	30	30	26	25	13
H320	618669	742667	Dwelling	18	22	23	22	25	26	24	22	10
H321	618565	742723	Dwelling	18	22	23	22	26	26	24	22	10
H322	617837	743197	Dwelling	20	23	25	24	27	28	26	23	11
H323	619241	742355	Dwelling	16	20	22	21	25	25	23	21	9
H324	617767	743194	Dwelling	20	23	24	24	27	28	26	23	11

NSR	ITM Coordinates		Dwelling Status	Scenario								
	Eastings	Northings		1	2	3	4	5	6	7	8	Night
H325	617628	743231	Dwelling	20	27	28	27	30	30	26	25	13
H326	617399	743314	Dwelling	20	27	28	27	30	30	26	25	13
H327	618942	742448	Dwelling	17	21	22	22	25	26	23	21	9
H328	618029	743000	Dwelling	19	23	24	23	26	26	24	22	10
H329	618881	742444	Dwelling	17	21	22	22	25	25	23	21	9
H330	617784	742977	Dwelling	19	24	26	24	28	28	25	24	11
H331	617744	742989	Agricultural Building	-	-	-	-	-	-	-	-	-
H332	617670	742963	Dwelling	19	26	27	26	29	30	26	24	12
H333	617729	742927	Dwelling	19	26	27	26	29	30	26	24	12
H334	617666	742912	Dwelling	19	26	27	26	29	29	26	24	12
H335	617640	742836	Dwelling	19	26	27	26	29	29	25	24	12
H336	617564	742826	Dwelling	19	25	27	26	28	29	25	23	12
H337	617446	742784	Dwelling	18	25	26	25	28	29	25	23	11
H338	617645	742585	Dwelling	18	25	26	25	28	28	24	23	11
H339	617396	742670	Dwelling	18	25	26	25	28	28	24	23	11
H340	617288	742696	Dwelling	18	25	26	25	28	28	23	22	11
H341	617223	742681	Dwelling	18	25	26	25	27	28	24	22	11
H342	617279	742624	Dwelling	18	25	26	25	27	28	24	22	11