



NOISE SCREENING ASSESSMENT

on behalf of

PEEL L&P HOLDINGS (UK) LIMITED

for the site at

SOUTH WEST URBAN EXTENSION

REPORT DATE: 12TH NOVEMBER 2021



Miller Goodall Ltd



Summary

Miller Goodall Ltd (MG) has, on behalf of Peel L&P Holdings (UK) Ltd, undertaken a desktop noise screening assessment, a preliminary walk over survey and preliminary noise measurements to review potential issues and solutions associated with noise on a proposed development of a residential led mixed-use development with the potential to deliver around 1,800 dwellings. The study has been undertaken to support the promotion of the land through the Warrington Local Plan. Warrington Borough Council (WBC) is currently undertaking a review of its Local Plan which will guide development in the Borough to 2038. The Council has now prepared its Proposed Submission Local Plan 2021.

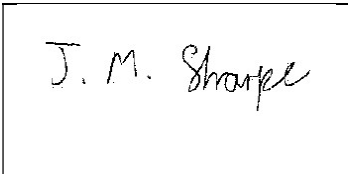
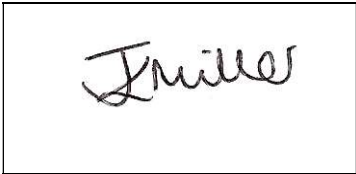
The study concludes that noise should not be a barrier to residential development on the land. Areas have been identified where noise will need to be carefully considered at the design phase of the development, these include the areas in close proximity to industrial or transport sources. In these areas it is recommended that a detailed noise assessment is undertaken which considers noise mitigation measures to minimise noise to achieve recommended National standards.

In relation to the impact of the development on the noise environment, information is limited and significance will need to be assessed via detailed modelling at a later date and mitigation measures considered.

The aim of this assessment was to provide an initial overview to determine whether the site is suitable for the proposed use. The assessment has identified a number of noise sources which will require further assessment, however with suitable design of the site and acoustic mitigation measures it is considered that a suitable and commensurate level of protection against noise will be provided to the occupants of the proposed accommodation.

The impact of the development has not been able to be assessed in detail however it is not expected that there will be significant impacts for noise as a result of the development and with good acoustic design the impacts can be minimised.

Record of changes

Prepared By	James Sharpe AMIOA	Reviewed By	Jo Miller MIOA CIEH
Signed		Signed	
Date	12th November 2021	Date	12th November 2021

Version	Date	Change	Initials
1	12 th April 2018	Initial issue	JLM
2	9 th July 2018	Minor amendments	JLM
3	31 st October 2018	Amendments to final draft	JLM
4	15 th May 2019	Amendments to Masterplan	JLM
5	11 th June 2019	Minor amendments	RM
6	4 th November 2021	Minor alterations	JS
7	11 th November 2021	Minor alterations	JS
8	12 th November 2021	Amendments to Masterplan	JS

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1 Introduction

- 1.1 This noise report is submitted in support of a proposed housing allocation within the Warrington Local Plan for a site located to the south east of the Manchester Ship Canal, namely the South West Urban Extension. The site sits within the administrative boundary of Warrington Metropolitan Borough Council (WMBC).
- 1.2 This report provides a review of the existing noise sources in proximity to the proposed development site and assesses the potential impact of the proposed development on the local noise environment. It is provided as part of a suite of documents which have informed the development of the illustrative masterplan for the site's development and which collectively demonstrate that the site presents a suitable and deliverable development opportunity and is not affected by any insurmountable constraints which would impede its development over the emerging plan period
- 1.3 The external noise in urban areas is generally dominated by road traffic sources, along with industrial and commercial sources in some areas. Generally residential areas do not generate significant noise sources of concern.
- 1.4 Noise impacts need to be considered as part of the planning process both to ensure the new development does not create adverse noise impacts on existing receptors and also that new developments are not adversely impacted by existing noise sources to an unacceptable degree.
- 1.5 An initial review of the area has been undertaken to determine existing and future noise sources and noise sensitive receptors and any potential key noise issues have been identified together with any additional work which may be required.

2 Site Description

- 2.1 The site lies to the immediate south west of the settlement boundary of Warrington. It is bound by the Manchester Ship Canal to the north, the West Coast Railway to the north west, the A56/Chester Road to the south east and Runcorn Road to the south. There is a plot of land to the south of the A56, immediately adjoining the Warrington settlement boundary, which is included in the proposed development.
- 2.2 The site currently comprises a mix of agricultural land and associated buildings and property. Mill Lane runs through the site, providing access to a number of private properties and farm buildings. An Industrial area lies on the northern side of the Ship Canal, known as Warrington Waterfront. The route of the proposed Western Link Road lies at the eastern end of the site.
- 2.3 The site is presently designated as Green Belt land within the Warrington Unitary Development Plan (June 2005), but has been identified by the Council as a site to be released from the Green Belt and allocated for housing development through the emerging Local Plan.

3 Proposed Development

- 3.1 Land at Higher Walton will be developed as a sustainable urban extension to the main urban area of Warrington, providing around 1,800 new homes. The urban extension will support a new community in a high-quality residential setting with ease of access to Warrington's employment, recreation and cultural facilities.

3.2 The new community will be supported by:

- A new primary school
- A local centre comprising local shops, a potential new health facility (subject to needs), and other community facilities as necessary to support the new residential community
- Extensive areas of open space and recreation provision.

3.3 The development will be designed to support walking and cycling for local trips. It will benefit from the new Western Link and improved public transport to enable access to the town centre, Stockton Heath, the Waterfront development and other major employment areas, including Daresbury.

3.4 Development will ensure that important ecological assets within the site are preserved with opportunities to provide additional habitats and enhance biodiversity.

3.5 The urban extension will preserve, and where possible enhance, the heritage assets within the site and will be designed to respect the setting of nearby heritage assets, including the Bridgewater Canal and its bridges and Walton Village Conservation Area.

3.6 Five site access points are proposed, as indicated in the draft Illustrative Masterplan in Appendix 2.

3.7 The assessment for noise is based on the development taking place both with and without the Warrington Western Link Road (WWLR), which will provide a new road connection to the south-west of Warrington, linking the A56/A5060 Chester Road with the A57 at Great Sankey. The WWL is proposed to run to the south and west of Warrington town centre between A56 Chester Road and A57 Sankey Way. The preferred route of the scheme is included in Appendix 2. The scheme includes (starting from its southern end):

- A large traffic signal-controlled junction with A56 Chester Road.
- A roundabout junction within the site.
- A high-level crossing of the Manchester Ship Canal.
- A road under the West Coast Mainline railway and Walton Viaduct.
- A large roundabout junction providing connections to the north and south for development at Warrington Waterfront.
- A bridge over the River Mersey, adjacent to the existing crossing at Forrest Way.
- Bridges over the Fiddler's Ferry railway line, Sankey Brook, Liverpool Road and the St Helens Canal.
- A large traffic signal-controlled cross-roads junction with A57 Sankey Way and Cromwell Avenue.

4 Policy Context

4.1 Noise Policy Statement for England

4.1.1 The Noise Policy Statement for England (NPSE¹), published in March 2010, sets out the long-term vision of Government noise policy. The Noise Policy aims, as presented in this document, are:

¹Noise Policy Statement for England, Defra, March 2010

“Through the effective management and control of environmental, neighbour and neighbourhood noise within the context of Government policy on sustainable development:

- avoid significant adverse effects on health and quality of life;
- mitigate and minimise adverse effects on health and quality of life; and
- where possible, contribute to the improvement of health and quality of life.”

4.1.2 The NPSE makes reference to the concepts of NOEL (No Observed Effect Level) and LOAEL (Lowest Observed Adverse Effect Level) as used in toxicology but applied to noise impacts. It also introduces the concept of SOAEL (Significant Observed Adverse Effect Level) which is described as the level above which significant adverse effects on health and the quality of life occur.

4.1.3 The first aim of the NPSE is to avoid significant adverse effects, taking into account the guiding principles of sustainable development (as referenced in Section 1.8 of the Statement). The second aim seeks to provide guidance on the situation that exists when the potential noise impact falls between the LOAEL and the SOAEL, in which case:

“...all reasonable steps should be taken to mitigate and minimise adverse effects on health and quality of life while also taking into account the guiding principles of sustainable development”.

4.1.4 Importantly, the NPSE goes on to state:

“This does not mean that such adverse effects cannot occur”.

4.1.5 The Statement does not provide a noise-based measure to define SOAEL, acknowledging that the SOAEL is likely to vary depending on the noise source, the receptor and the time in question. NPSE advises that:

“Not having specific SOAEL values in the NPSE provides the necessary policy flexibility until further evidence and suitable guidance is available”

4.1.6 It is therefore likely that other guidance will need to be referenced when applying objective standards for the assessment of noise, particularly in reference to the SOAEL, whilst also taking into account the specific circumstances of a proposed development.

4.2 National Planning Policy Framework

4.2.1 The National Planning Policy Framework (NPPF²) initially published in March 2012, was updated in July 2021. One of the documents that the NPPF replaces is Planning Policy Guidance Note 24 (PPG 24) “Planning and Noise”³.

² National Planning Policy Framework, Ministry of Housing, Communities and Local Government, July 2021

³ Planning Policy Guidance 24: Planning and Noise, DCLG, September 1994

4.2.2 The revised NPPF advises that the planning system has three overarching objectives, which are interdependent and need to be pursued in mutually supportive ways (so that opportunities can be taken to secure net gains across each of the different objectives). One of these is an environmental objective which is described in par. 8 (c):

“to protect and enhance our natural, built and historic environment; including making effective use of land, improving biodiversity, using natural resources prudently, minimising waste and pollution, and mitigating and adapting to climate change, including moving to a low carbon economy.”

4.2.3 At par. 174 we are advised that:

“Planning policies and decisions should contribute to and enhance the natural and local environment by:

e) preventing new and existing development from contributing to, being put at unacceptable risk from, or being adversely affected by, unacceptable levels of soil, air, water or noise pollution or land instability. Development should, wherever possible, help to improve local environmental conditions such as air and water quality, taking into account relevant information such as river basin management plans.

4.2.4 Par. 185 goes on to state:

“Planning policies and decisions should also ensure that new development is appropriate for its location taking into account the likely effects (including cumulative effects) of pollution on health, living conditions and the natural environment, as well as the potential sensitivity of the site or the wider area to impacts that could arise from the development. In doing so they should:

a) mitigate and reduce to a minimum potential adverse impacts resulting from noise from new development – and avoid noise giving rise to significant adverse impacts on health and the quality of life;

b) identify and protect tranquil areas which have remained relatively undisturbed by noise and are prized for their recreational and amenity value for this reason.

4.2.5 Par. 187 seeks to ensure that any development does not prejudice the legally permitted operations and activities of other, existing non-residential uses, stating:

“Planning policies and decisions should ensure that new development can be integrated effectively with existing businesses and community facilities (such as places of worship, pubs, music venues and sports clubs). Existing businesses and facilities should not have unreasonable restrictions placed on them as a result of development permitted after they were established. Where the operation of an existing business or community facility could have a significant adverse effect on new development (including changes of use) in its vicinity, the applicant (or ‘agent of change’) should be required to provide suitable mitigation before the development has been completed.”

4.3 Planning Practice Guidance – Noise

4.3.1 As of March 2014, a Planning Practice Guidance⁴ for noise was issued which provides additional guidance and elaboration on the NPPF, the guidance was updated in July 2019. It advises that when plan-making and decision-taking, the Local Planning Authority should consider the acoustic environment in relation to:

- Whether or not a significant adverse effect is occurring or likely to occur;
- Whether or not an adverse effect is occurring or likely to occur; and
- Whether or not a good standard of amenity can be achieved.

4.3.2 In line with the Explanatory Note of the NPSE, the PPG goes on to reference the LOAEL and SOAEL in relation to noise impact. It also provides examples of outcomes that could be expected for a given perception level of noise, plus actions that may be required to bring about a desired outcome. However, in line with the NPSE, no objective noise levels are provided for LOAEL or SOAEL although the PPG acknowledges that:

“...the subjective nature of noise means that there is not a simple relationship between noise levels and the impact on those affected. This will depend on how various factors combine in any particular situation”.

4.3.3 Examples of these factors include:

- The source and absolute noise level of the source along with the time of day that it occurs;
- Where the noise is non-continuous, the number of noise events and pattern of occurrence;
- The frequency content and acoustic characteristics of the noise;
- The effect of noise on wildlife;
- The acoustic environment of external amenity areas provided as an intrinsic part of the overall design;
- The impact of noise from certain commercial developments such as night clubs and pubs where activities are often at their peak during the evening and night.

4.3.4 The PPG also provides general advice on the typical options available for mitigating noise. It goes on to suggest that Local Plans may include noise standards applicable to proposed developments within the Local Authority’s administrative boundary, although it states that:

“Care should be taken, however, to avoid these being implemented as fixed thresholds as specific circumstances may justify some variation being allowed”.

4.3.5 The PPG was amended in December 2014 to clarify guidance on the potential effect of noise from existing businesses on proposed new residential accommodation. Even if existing noise levels are intermittent (for example, from a live music venue), noise will need to be carefully considered and appropriate mitigation measures employed to control noise at the proposed accommodation.

⁴ Planning Practice Guidance – Noise, <https://www.gov.uk/guidance/noise--2> 22nd July 2019.

4.4 Local Planning Policy

Warrington South West Urban Extension Framework Plan Document – June 2017

- 4.4.1 A report was prepared by AECOM for the master-planning of the South West Urban Extension for Warrington Borough Council. The framework plan options have been developed giving consideration to the landscape, historic assets, transport considerations, utilities and the environmental context. The WSWUE is looking to provide a long-term large scale sustainable mixed-use development, to provide around 1,800 new homes, 2 ha Local Centre for community facilities, a new 2 ha primary school, a new 20 ha local park and around 31 ha of associated Open Spaces.
- 4.4.2 The Framework Plan developed in 2017 does not provide specific technical evidence in relation to noise. The only specific reference to noise is the within conceptual approach, option 1, which provides a green buffer to the A56 to reduce the impact of noise and air quality.

Warrington Proposed Submission Version Local Plan – September 2021

- 4.4.3 The Proposed Submission Version Local Plan has been published for consultation between Monday 4th October 2021 and Monday 15th November 2021. Section 3.3.17 addresses the proposed removal of some of the previous green belt sites which includes the South West Urban Extension.

“The Council also considered a range of alternative locations for Green Belt release adjacent to the main urban area. The previous version of the PSVLP (2019) included the South West Urban Extension. This was given further detailed consideration, but options including this urban extension did not perform as well as the chosen spatial strategy. In particular, the South West Urban Extension would not enable the brownfield regeneration benefits of Fiddlers Ferry or such wide ranging infrastructure benefits as the South East Warrington Urban Extension. The Council also has concerns about the potential impact on the Western Link.”

5 Acoustic Standards and Guidance

5.1 ProPG: Planning & Noise – Professional Practice Guidance on Planning & Noise – New Residential Development – May 2017

- 5.1.1 ProPG: Planning and Noise is new guidance with the aim of delivering sustainable development and promoting good health and well-being through the effective management of noise which may impact on new residential developments. The guidance aims to complement the national planning policy and encourages the use of good acoustic design at the earliest phase of the planning process. It builds upon the recommendations of various other guidance documents including NPPF, NPSE and PPG-Noise, BS 8233 and WHO.
- 5.1.2 The guidance is applicable to new residential developments which would be exposed predominantly to noise from existing transport sources. The ProPG advocates a risk based approach to noise using a two-stage process:
- Stage 1 – an initial noise risk assessment of the proposed development site; and
 - Stage 2 – a systematic consideration of four key elements: –
 - Element 1 – demonstrating a ‘Good Acoustic Design Process’;

- Element 2 – observing internal ‘Noise Level Guidelines’;
- Element 3 – undertaking an ‘External Amenity Area Noise Assessment’; and
- Element 4 – consideration of ‘Other Relevant Issues’.

5.1.3 The ProPG approach is underpinned by the preparation and delivery of an ‘Acoustic Design Statement’ (ADS), whereby the higher the risk for noise at the site, the more detailed the ADS. The ADS should address the following issues:

- Present the initial site noise risk assessment, including the pre-development acoustic conditions prior to development;
- Describe the external noise levels that occur across the site both before and after any necessary mitigation measures have been incorporated. The external noise assessment with mitigation measures in place should use an informed judgement of typical worst-case conditions;
- Demonstrate how good acoustic design is integrated into the overall design and how the proposed acoustic design responds to specific circumstances of the site;
- Confirm how the internal noise level guidelines will be achieved, including full details of the design measures and building envelope specifications;
- A detailed assessment of the potential impact on occupants should be undertaken where individual noise events are expected to exceed 45 dB $L_{AF,max}$ more than 10 times a night inside bedrooms;
- Priority should be given to enable the use of openable windows where practical across the development. Where this is not practical to achieve the internal noise level guidelines with windows open, then full details of the proposed ventilation and thermal comfort arrangements must be provided;
- Present the findings of the external amenity area noise assessment;
- Present the findings of the assessment of other relevant issues;
- Confirm for a low risk site how adverse impacts of noise will be mitigated and minimised;
- Confirm for a medium or high noise risk site how adverse impacts of noise will be mitigated and minimised and clearly demonstrate that a significant adverse noise impact has been avoided.

5.1.4 ProPG target noise levels are based on existing guidance from BS 8233 and WHO (see below). Table 1 below outlines the guidance noise levels for different room types during day and night times.

Table 1: ProPG guideline indoor ambient noise levels for dwellings

Activity	Location	07:00 to 23:00	23:00 to 07:00
Resting	Living Room	35 dB $L_{Aeq,16hr}$	-
Dining	Dining room/area	40 dB $L_{Aeq,16hr}$	-
Sleeping (daytime resting)	Bedroom	35 dB $L_{Aeq,16hr}$	30 dB $L_{Aeq,8hr}$ 45 dB $L_{Amax,F}$

5.1.5 The footnotes to this table suggest that internal noise level limits can be relaxed by up to 5 dB where development is considered necessary or desirable, and still represent “reasonable” internal conditions. They also suggest that in such cases, external levels which exceed WHO guidance target levels (see WHO section below) may still be acceptable provided that reasonable internal noise levels are achieved. Although, where the acoustic environment of external amenity areas is intrinsic to the overall design, “noise levels should ideally not be above the range 50 – 55 dB $L_{Aeq,16hr}$ ”. The wording of ProPG (and BS 8233:2014) is clear that exceedance of guideline noise levels in external areas should not prohibit the development of desirable developments in any event.

5.2 BS 8233:2014 Guidance on Sound Insulation and Noise Reduction for Buildings

5.2.1 This standard provides recommended guideline values for internal noise levels within dwellings which are similar in scope to guideline values contained within the World Health Organisation (WHO) document, Guidelines for Community Noise (1999)⁵. These guideline noise levels are shown in Table 2, below.

Table 2: BS 8233: 2014 guideline indoor ambient noise levels for dwellings

Location	Activity	07:00 to 23:00	23:00 to 07:00
Living Room	Resting	35 dB $L_{Aeq,16hr}$	-
Dining room/area	Dining	40 dB $L_{Aeq,16hr}$	-
Bedroom	Sleeping (daytime resting)	35 dB $L_{Aeq,16hr}$	30 dB $L_{Aeq,8hr}$

⁵ World Health Organisation Guidelines for Community Noise, 1999

5.2.2 BS 8233:2014 advises that:

“regular individual noise events...can cause sleep disturbance. A guideline value may be set in terms of SEL⁶ or $L_{Amax,F}$ depending on the character and number of events per night. Sporadic noise events could require separate values”.

5.2.3 BS 8233:2014 adopts guideline external noise values provided in WHO for external amenity areas such as gardens and patios. The standard states that it is “desirable” that the external noise does not exceed 50 dB $L_{Aeq,T}$ with an upper guideline value of 55 dB $L_{Aeq,T}$ whilst recognising that development in higher noise areas such as urban areas or those close to the transport network may require a compromise between elevated noise levels and other factors that determine if development in such areas is warranted. In such circumstances, the development should be designed to achieve the lowest practicable noise levels in external amenity areas.

5.3 World Health Organisation (WHO) Guidelines for Community Noise 1999

5.3.1 The WHO Guidelines 1999 recommends that to avoid sleep disturbance, indoor night-time guideline noise values of 30 dB L_{Aeq} for continuous noise and 45 dB L_{AFmax} for individual noise events should be applicable. It is to be noted that the WHO Night Noise Guidelines for Europe 2009⁷ makes reference to research that indicates sleep disturbance from noise events at indoor levels as low as 42 dB L_{AFmax} . The number of individual noise events should also be taken into account and the WHO guidelines suggest that indoor noise levels from such events should not exceed approximately 45 dB L_{AFmax} more than 10 – 15 times per night.

5.3.2 The WHO document recommends that steady, continuous noise levels should not exceed 55 dB L_{Aeq} on balconies, terraces and outdoor living areas. It goes on to state that to protect the majority of individuals from moderate annoyance, external noise levels should not exceed 50 dB L_{Aeq} .

5.4 BS 4142:2014+A1:2019 ‘Methods for rating and assessing industrial and commercial sound’

5.4.1 BS 4142:2014+A1:2019⁸ provides guidance on the assessment of the likelihood of complaints relating to noise from industrial sources. It replaced the 1997 edition of the Standard in October 2014 and was amended in June 2019. The amended version corrected a number of printing errors and further clarified that the standard is used to assess external noise levels, and not internal noise levels (although this can form part of the discussion regarding context). The key aspects of the Standard are summarised below.

5.4.2 The standard presents a method of assessing potential noise impact by comparing the noise level due to industrial sources (the Rating Level) with that of the existing background noise level at the nearest noise sensitive receiver in the absence of the source (the Background Sound Level).

5.4.3 The Specific Noise Level - the noise level produced by the source in question at the assessment location - is determined and a correction applied for certain undesirable acoustic features such as tonality, impulsivity or intermittency. The corrected Specific Noise Level is referred to as the Rating Level.

⁶ Sound exposure level or L_{AE}

⁷ WHO Night Noise Guidelines for Europe 2009

⁸ BS 4142:2014+A1:2019 Methods for rating and assessing industrial and commercial sound

5.4.4 In order to assess the noise impact, the Background Sound Level is arithmetically subtracted from the Rating Level. The standard states the following:

- *Typically, the greater this difference, the greater the magnitude of the impact,*
- *A difference of around +10 dB or more is likely to be an indication of a significant adverse impact, depending on the context,*
- *A difference of around +5 dB is likely to be an indication of an adverse impact, depending on the context,*
- *The lower the Rating Level is relative to the measured Background Sound Level, the less likely it is that the specific sound source will have an adverse impact or a significant adverse impact. Where the Rating Level does not exceed the Background Sound Level, this is an indication of the specific sound source having a low impact, depending on the context.*

5.4.5 In addition to the margin by which the Rating Level of the specific sound source exceeds the Background Sound Level, the 2014+A1:2019 edition places emphasis upon an appreciation of the context, as follows:

An effective assessment cannot be conducted without an understanding of the reason(s) for the assessment and the context in which the sound occurs/will occur. When making assessments and arriving at decisions, therefore, it is essential to place the sound in context.

The 2014 edition of BS 4142 also introduces a requirement to consider and report the uncertainty in the data and associated calculations and to take reasonably practicable steps to reduce the level of uncertainty.

6 Impact of Existing Noise Sources on the Development

6.1 Noise Survey

6.1.1 Noise measurements were undertaken at two locations identified in Appendix 1 in accordance with BS 7445-1: 2003⁹ by Gareth Willox of Miller Goodall Ltd. The measurement locations were to provide an estimate of the current noise levels during the daytime, night-time measurements have not been undertaken at this stage, since the assessment is proposed as a strategic screening exercise.

6.1.2 The calibration of the sound level meter was checked before and after measurements with negligible deviation (<0.1 dB). Details of the equipment used are shown in Table 3, below.

⁹ BS 7445-1: 2003 Description and measurement of environmental noise - Part 1: Guide to quantities and procedures

Table 3: Noise monitoring equipment

Equipment Description	Type Number	Manufacturer	Serial No.	Date Calibrated	Calibration Certification Number
Class 1 ^{10,11} Integrating Real Time 1/3 Octave Sound Analyser	NOR 140	Norsonic	1406815	12/01/17	474629844
Microphone	NOR 1225	Norsonic	264687	15/12/16	474629844
Class 1 Calibrator ¹²	NOR 1251	Norsonic	34123	05/07/17	02777/1

6.1.3 Specific, background and ambient noise monitoring was undertaken at the times specified in Table 4, below. Weather conditions were determined both at the start and on completion of the survey. It is considered that meteorological conditions were appropriate for environmental noise measurements. Measurement locations are shown in Appendix 1.

Table 4: Dates, times and weather conditions during noise measurements

Measurement Location	Date	Time	Weather conditions
MP1 and MP2	29/03/2018	10:35 – 11:35	Overcast, dry, 3 – 7 °C, still

6.1.4 Measurements were taken to establish an estimate of the noise levels in the area and were not intended as a full detailed noise assessment. As part of the further design of the site and development of the full planning application further more detailed noise monitoring would be required. This would include longer term daytime and night-time noise monitoring at a number of locations across the site.

6.1.5 The measurement locations are detailed below and indicated on Appendix 1.

- MP1 Approximately 130 m from A56 on Mill Lane
- MP2 At the northern end of the site approximately 85 m from the Manchester Ship Canal and opposite Solvay Interlox Industrial site and approximately 340 m from the railway line.

6.1.6 The noise sources within the vicinity of the measurement locations are summarised in Table 5, below:

¹⁰ IEC 61672-1 (2002) Electroacoustics – Sound level meters Part 1: Specifications

¹¹ IEC 61260 (1995) Electroacoustics – Octave-band and fractional-octave-band filters

¹² IEC 60942 (2003) Electroacoustics – Sound calibrators

Table 5: Description of noise sources affecting the site

Measurement Locations	Noise Sources
MP1	Birds, distant road traffic noise from A56 Chester Road.
MP2	Train noise, bird song and distant road traffic noise. No noise evident from Solvay Interlox.

6.2 Monitoring Results

6.2.1 A summary of the broadband measurement data is provided in Table 6 below. All data are sound pressure levels in dB re 20 μ Pa.

Table 6: Summary of noise measurements

Measurement Location	Start Time	$L_{Aeq,T,5}$ mins (dB)	Overall L_{AFmax} (dB)	$L_{AF10,5}$ mins (dB)	$L_{AF90,5}$ mins (dB)
MP1	10:35:06	45.3	51.8	46.8	43.5
MP1	10:40:06	47.8	61.6	51.0	42.9
MP1	10:45:06	46.8	67.2	48.3	44.1
MP1	10:50:06	46.3	58.2	49.3	42.0
MP1	10:55:06	45.5	56.2	47.4	43.1
MP1	11:00:06	44.5	58.7	46.0	42.5
MP2	11:10:06	47.2	60.3	49.8	43.4
MP2	11:15:06	50.4	65.6	54.7	43.4
MP2	11:20:06	47.0	62.8	48.7	42.8
MP2	11:25:06	46.4	57.4	48.8	43.7
MP2	11:30:06	49.8	70.2	53.0	44.5
MP2	11:35:06	49.0	68.5	52.3	44.2

6.2.2 Each measurement period consisted of sequential 5-minute samples.

6.2.3 The results of the noise monitoring have been assessed against the ProPG noise risk levels to determine the potential effect of noise on the proposed site without mitigation measures. The risk level has been determined based on the measured daytime noise levels at the monitoring positions.

6.2.5 As can be seen in Table 7 above, the noise levels measured at the site indicate “no adverse effect”, however as previously stated these levels are a short-term indication of the noise levels for the site and do not include night-time levels.

6.3 Noise Mapping

6.3.1 Environmental noise mainly consists of noise from transport sources, such as road, rail and aviation. Department for Environment, Food and Rural Affairs (DEFRA) is responsible for creating noise maps and drawing up Action Plans under the Environmental Noise (England) Regulations 2006 (as amended), which requires Defra to:

- adopt noise maps which show people’s exposure to environmental noise;
- adopt action plans based on the results of noise mapping
- aims to preserve environmental noise quality where it is good; and
- provides information to the public on environmental noise and its effects.

6.3.2 Noise mapping has been undertaken by Department of Environment Food and Rural Affairs (DEFRA) in 2017. Maps have been provided for main noise sources including road traffic noise and rail noise. The noise maps for the area are shown for both road traffic noise and railway noise in Appendices 3a, 3b, 4a and 4b respectively. The results show the predicted daytime $L_{Aeq,16hour}$ and night time $L_{Aeq,8hour}$ levels around the site for both road traffic noise and railway noise, taken at a grid height of 4 m.

6.4 Road Traffic Noise

6.4.1 The main existing road traffic noise source which has the potential to impact on the site is from the A56 with further potential from the proposed strategic road link WWLR. The main parcels of land which are likely to be impacted by the road traffic noise are those located within approximately 150 m of the road. These are areas where the road traffic noise levels are predicted to exceed 55 dB $L_{Aeq,16hour}$ in the daytime and 50 dB $L_{Aeq,8hour}$ in the night time.

6.4.2 The WWLR preferred route is proposed to run north from the A56 across the eastern parcel of the site. An assessment of the noise levels from this source shall be required in order to assess the impact of this noise source on any proposed housing. Notwithstanding the additional need to assess this area for noise the use of standard mitigation measures such as those outlined at 6.4.4 below will assist in bringing the noise levels in line with National Standards.

6.4.3 Bellhouse Lane to the south western boundary of the site is not expected to impact on the site in relation to noise in any significant way, due to the likely low level of transport use of this lane.

6.4.4 The road network in this area is not dissimilar to other typical areas at the edge of an urban environment. The area will require a more detailed noise assessment and noise modelling to show how National noise standards may be achieved. The assessment would include noise modelling predictions of the WWLR, and identify preferred mitigation measures to protect future residents. The standard mitigation measures which are likely to be suggested include:

- Suitable buffer zones between noise sources and proposed residential developments;
- Orientation of properties to provide the most protection to noise sensitive areas, such as bedrooms and private garden areas;

- Noise mitigation in the form of acoustic glazing and ventilation for those properties where achieving the guidance values cannot be achieved with openable windows; and
- Potentially the use of noise bunds and barriers to protect private garden areas.

6.4.5 This form of noise assessment is very common in urban areas and it is considered that suitable mitigation measures and careful design will enable guidance levels to be achieved.

6.5 Railway Noise

6.5.1 Results of the noise mapping produced on behalf of DEFRA for the railway are provided in Appendix 4a and 4b. Areas of the north western element of the housing allocation would appear to fall within the 55 – 60 dB $L_{Aeq,16hr}$ range for the daytime and 50 – 55 dB $L_{Aeq,8hr}$ for the night time.

6.5.2 The railway line runs diagonally to the north-west boundary of the site. The railway line consists of the main West Coast Railway Line and the Crewe to Warrington Railway Line.

6.5.3 The height of the railway line is approx. 10m higher than the site. The closest proposed houses are approximately 150 m from the railway line. Railway line mapping data (Appendix 4a and 4b) would suggest that the closest houses are within the 55 – 60 dB $L_{Aeq,16hr}$ zone in the daytime and 50 – 55 dB $L_{Aeq,8hr}$ for the night time. The level of noise in the external garden areas of those properties closest to the railway line would therefore need to be carefully considered at the design stage of the planning application. The following forms of noise mitigation may be required at the detailed design phase of the development.

- Orientation of private gardens away from the railway line
- Use of acoustic glazing and ventilation to reduce the noise ingress to achieve National guidance values
- Use of acoustic barriers where necessary to achieve National external noise guidance levels.

6.5.4 A detailed noise assessment is likely to be required at the full design stage to enable the noise mitigation measures to be fully assessed, however it is considered that with the mitigation measures proposed above the external noise limit values will be able to be achieved.

6.6 Industrial Noise

6.6.1 Appendix 5 provides the locations of the main industrial and commercial noise sources identified during the noise screening assessment.

6.6.2 The main industrial areas which have the potential to impact on the development site have been identified from a desktop internet search, computer modelling software, GIS and site observations during the noise monitoring and site visit. The sources identified are detailed in Table 8 below.

Table 8: Industrial Sources with Potential to Impact on the Site

Identity No.	Location	Name of Site	Type of Operation	Types of Noise Sources
1	Baronet Works, off Baronet Way	Solvay Interlox	Industrial manufacturing Process	Industrial manufacturing noise
2	Port Warrington	Port Warrington	Port	Industrial noise, movement of containers and activities within the Port.
3	Port Warrington	Proposed Extension to Port Warrington	Port	Industrial noise, movement of containers and activities within the Port.
4	Off Bellhouse Lane, Walton	Sewerage Works	Sewerage works	Unlikely to produce any significant noise sources.
5	Off Runcorn Road, Walton	P&G LGV Driver Training	Training facility	Vehicle movements
6	Mill Lane	Walton Turf	Turf production	Vehicle movements
7	Holy Hedge Lane	Holy Hedge Farm	Farm	Farm operations.

6.6.3 The onsite survey work did not identify any significant noise sources from the industrial and commercial sites identified in Table 8 above, however at the detailed design stage the sources will be assessed in more detail to determine the need for any specific mitigation measures.

6.6.4 Miller Goodall have been working on the noise impact assessment for the proposed extension of Port Warrington. Final details of this assessment are not fully complete, however the impact of the Port Extension on the proposed SWUE is minimised by the effective bund provided by the railway line and sidings, which is 10 m higher than the site, with the exception of the bridge going under the line at the northern portion of the development site. The distance from the Port is relatively large, approximately 350 m and consequently we do not consider the existing or proposed activities of the Port likely to be a significant issue for the development. The detailed design of the site will need to consider both the proposed and existing activities of the Port to include noise mitigation as necessary.

6.6.5 It is considered that the noise impact from those industrial sources identified can be mitigated against as part of the detailed design of the site. The mitigation measures may include:

- Orientation of private garden areas to provide protection from industrial noise sources;
- Use of noise bunds or barriers to minimise noise impacts and
- Acoustic glazing and ventilation strategies identified where necessary.

6.6.6 It is considered that with these mitigation measures provided as part of the full design of the site, a suitable and commensurate level of protection will be afforded to the proposed residential accommodation.

7 Impact of Noise from the Proposed Development

7.1 Transport Noise

7.1.1 New residential development and infrastructure developments of this size will result in additional vehicles on the local road network. I-Transport have completed a draft transport appraisal for the site, dated July 2018. The assessment has identified the likely increases in traffic as a result of the proposed development. The transport appraisal has considered the transport and highways implications of residential development on WBC's draft allocation at the South West Urban Extension.

7.1.2 In order to assess whether traffic increases impact on the noise environment, it is useful to determine whether there are any increases in traffic flow as this may necessitate the requirement for a detailed noise assessment. Design Manual for Roads and Bridges (DMRB) November 2011 section A1.8 (ii) states:

Changes in traffic volume on existing roads or new routes may cause either of the threshold values for noise to be exceeded. A change in noise level of 1 dB $L_{A10,18h}$ is equivalent to a 25% increase or a 20 % decrease in traffic flow, assuming other factors remain unchanged and a change in noise level of 3 dB $L_{A10,18h}$ is equivalent to a 100 % increase or a 50 % decrease in traffic flow.

7.1.3 The Transport Appraisal identifies Runcorn Road as a road that will be subject to increased traffic. As part of a full noise assessment at the detailed design stage, it will need to be determined if a DMRB assessment will be necessary, once more detailed traffic flows are available.

7.1.4 Although a full detailed assessment of the traffic noise has not as yet been undertaken, it is considered that the impact will be not be significant. The detailed assessment will need to consider the new infrastructure and methods to minimise any potential impacts.

7.2 Construction Noise and Vibration Impacts

7.2.1 It is common for the control of construction noise, vibration and dust emission to be addressed by the application of Best Practicable Means (BPM) and detailed within a Construction and Environmental Management Plan (CEMP). The impact of construction noise from a development of this size is likely to be the main noise impacting on existing noise sensitive receptors, albeit over a relatively short period of time.

7.2.2 Prior to commencement of works, a quantitative noise impact assessment using guidance in BS 5228¹³ on site may also be required but in our experience is usually only necessary where long-term remediation of a site is required, or where large-scale piling works are required in close proximity to existing sensitive receptors. It will be necessary to provide a robust CEMP which is agreed by the Local Authority.

7.2.3 Warrington Borough Council are likely to have their own recommended wording for planning conditions relating to the control of noise and vibration from construction works.

7.3 New Commercial and Educational developments

7.3.1 Any new commercial, retail and educational developments will need to be considered as part of the detailed design for the site. The noise sources from the proposed commercial, educational and retail developments within the site are not considered likely to have a significant impact on existing or future residential dwellings. They may include noise sources such as loading bays, plant noise and school playgrounds. It is not likely that any of the proposed noise sources will have a significant impact and the use of good acoustic design incorporated at an early stage in the development of the site will help to minimise any potential impact.

7.4 Protecting areas from increased noise.

7.4.1 The NPPF recommends protecting areas of tranquillity and areas prized for their recreational and amenity value. Table 9 identifies areas which it is felt meets this criterion. The identified sites are shown in Appendix 6.

Table 9: Locations where noise should be protected

Identity No.	Name of Site	Type of Operation	Reason
8	Walton Crematorium	Crematorium	Protect the use of the site
9	Higher Walton Golf Club	Golf Course	Protect the open space

7.4.2 The use of good acoustic design would enable the site to be developed to protect the identified tranquil areas. This would be considered as part of the noise assessment submitted to support the planning application.

8 Summary and Conclusions

8.1 A noise screening assessment, site visit and preliminary noise measurements have been undertaken to identify any potential noise sources which are likely to have an impact on the development of a site for a significant housing and infrastructure development. The information indicates that the impact of noise would not be a barrier to residential development on the land which the masterplan proposes for the development.

¹³ BS 5228 Noise and Vibration Control on Construction and Open Sites - Part 1: Noise: 2009+A1:2014

8.2 The assessment has identified a number of possible noise sources which may impact on the proposed development or existing noise sensitive receptors which may be impacted by the development. However, it is not considered that any of the identified noise sources are likely to have a significant impact or likely to be a barrier to development. There are a number of recommendations in relation to noise which will assist in minimising the potential impact on both the future and existing noise sensitive receptors. With good acoustic design it is considered that National standards for noise will be achieved for the proposed masterplan.

8.3 The recommendations include:

- Detailed assessment of noise from transportation sources, including road and rail transport around the site including the inclusion of noise mitigation measures as the detailed masterplan is developed for the site.
- Detailed assessment of noise from industrial and commercial sources located around the periphery of the site and include where necessary mitigation measures and use of good acoustic design as the masterplan is developed to a full planning application.
- There are areas within the site and located close to the site which are considered tranquil areas and careful design of the masterplan should aim to protect the noise environment at these locations.

8.4 It is considered that part of the detailed noise assessment will include the consideration of a number of mitigation measures for acoustics, including;

- Careful design of the site to ensure National target for noise are achieved at noise sensitive receptors;
- Consideration of acoustic mitigation measures to control noise levels to National guidance levels, including acoustic glazing and ventilation.

8.5 An assessment of the impact of the development in terms of noise from; transport, new infrastructure, construction noise and commercial and retail sources will need to be undertaken as part of the planning submission for the application site. The initial screening assessment does not consider that there is likely to be a significant impact as a result of the development. Good acoustic design should be considered as the masterplan is developed to protect existing noise sensitive receptors.

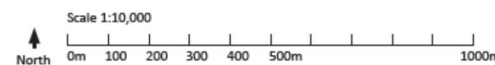
8.6 It is considered that with good acoustic design a suitable and commensurate level of protection against noise will be provided to the occupants of the proposed accommodation. Good acoustic design will also assist in reducing the potential impacts of the development for existing noise sensitive receptors.

APPENDICES

Appendix 1: Site Outline and Monitoring Positions



Appendix 2: Illustrative Master Plan and Development Constraints



<ul style="list-style-type: none"> Total site area: 119.59 ha / 295.52 ac Total existing properties within red line: 6.37 ha / 15.74 ac Total existing roads within red line (A56/Runcorn Road): 1.80 ha / 4.45 ac Total proposed spine road corridor within red line (outside development cells): 2.74 ha / 6.77 ac Total proposed green infrastructure (all typologies): 55.82 ha / 137.93 ac 	
<p>Land north of A56 and Runcorn Road:</p> <ul style="list-style-type: none"> Potential school (location to be confirmed): 1.40 ha / 3.46 ac Potential retail/local centre: 0.50 ha / 1.24 ac Residential development: 41.15 ha / 101.68 ac <ul style="list-style-type: none"> Residential development within Salvay Interax Ltd outer zone: 13.50 ha / 33.36 ac (up to 473 units @ 35/ha) Residential development within Salvay Interax Ltd middle zone: 0.86 ha / 2.13 ac (up to 30 units @ 35/ha) Residential development within former Norbert Dentressangle outer zone: 6.70 ha / 16.56 ac (up to 235 units @ 35/ha) 	
<p>Land south of Runcorn Road:</p> <ul style="list-style-type: none"> Residential development: 5.53 ha / 13.66 ac 	194 units @ 35 units per ha:
<p>Land south of A56 Chester Road:</p> <ul style="list-style-type: none"> Residential development: 4.28 ha / 10.57 ac <ul style="list-style-type: none"> Residential development within Salvay Interax Ltd outer zone: 0.47 ha / 1.16 ac (up to 16 units @ 35/ha) 	149 units @ 35 units per ha:
<p>Total units across whole site @ 35 units per ha: 1783</p>	

LANDSCAPE ARCHITECTURE
ENVIRONMENTAL PLANNING
MASTERPLANNING
URBAN DESIGN



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KEY:

- Site boundary
- Local Authority Boundary
- Proposed Green Belt
- Existing vegetation
- Proposed trees and woodland
- Proposed development cells
- Proposed development to be no higher than 2 storey along A56
- Potential locations for a school (A or B)
- Proposed play area
- Potential location for retail / local centre
- Proposed primary road
- Proposed secondary / tertiary roads
- Proposed public open space
- Proposed allotments
- Existing Public Right of Way
- Proposed footpath
- Proposed cycleway with existing residential access retained
- Proposed route of western link road
- Gas pipeline and easement
- Proposed vehicular access points

NB: Masterplan subject to change following detailed survey work

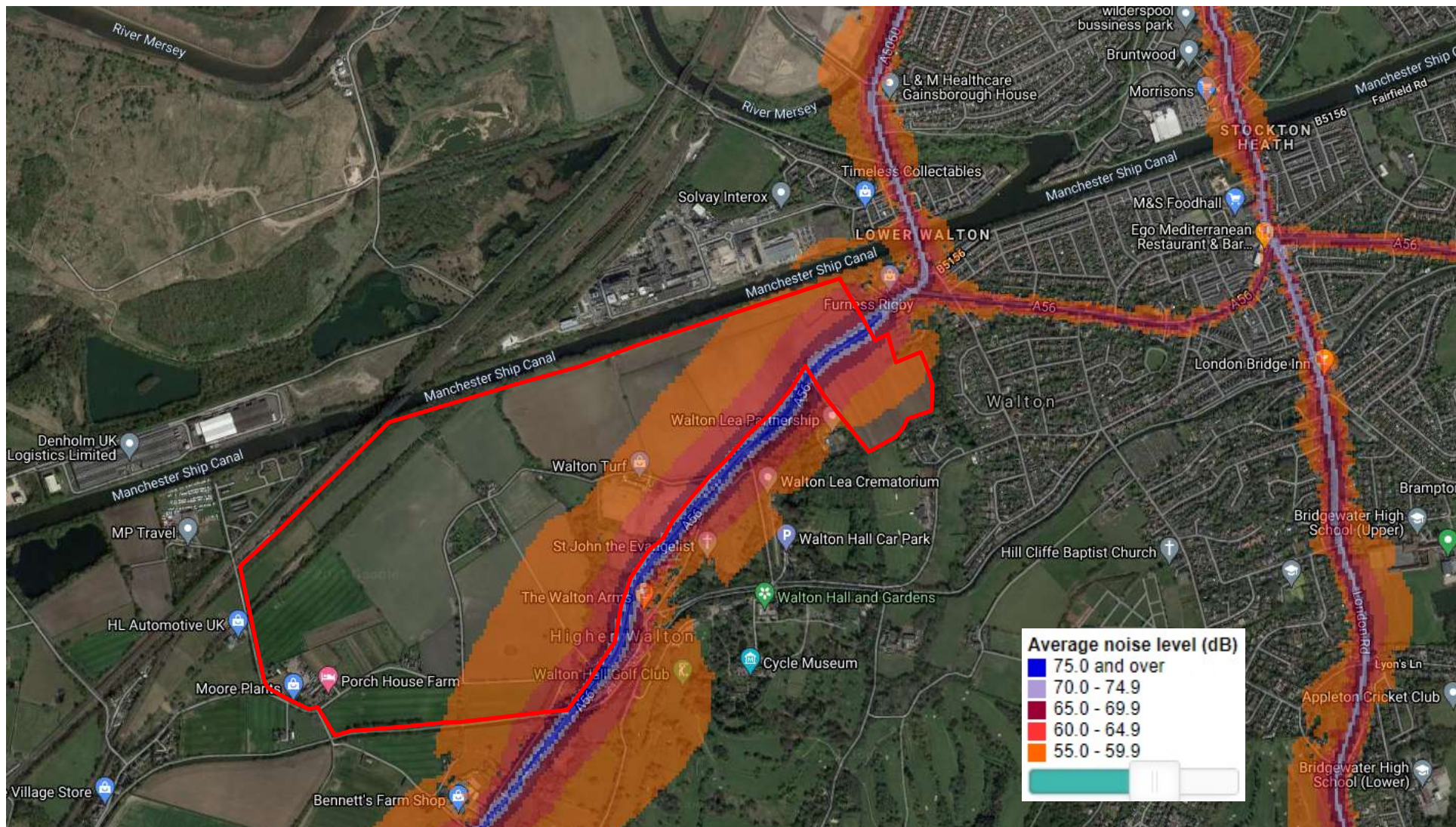


Warrington Local Plan Sites

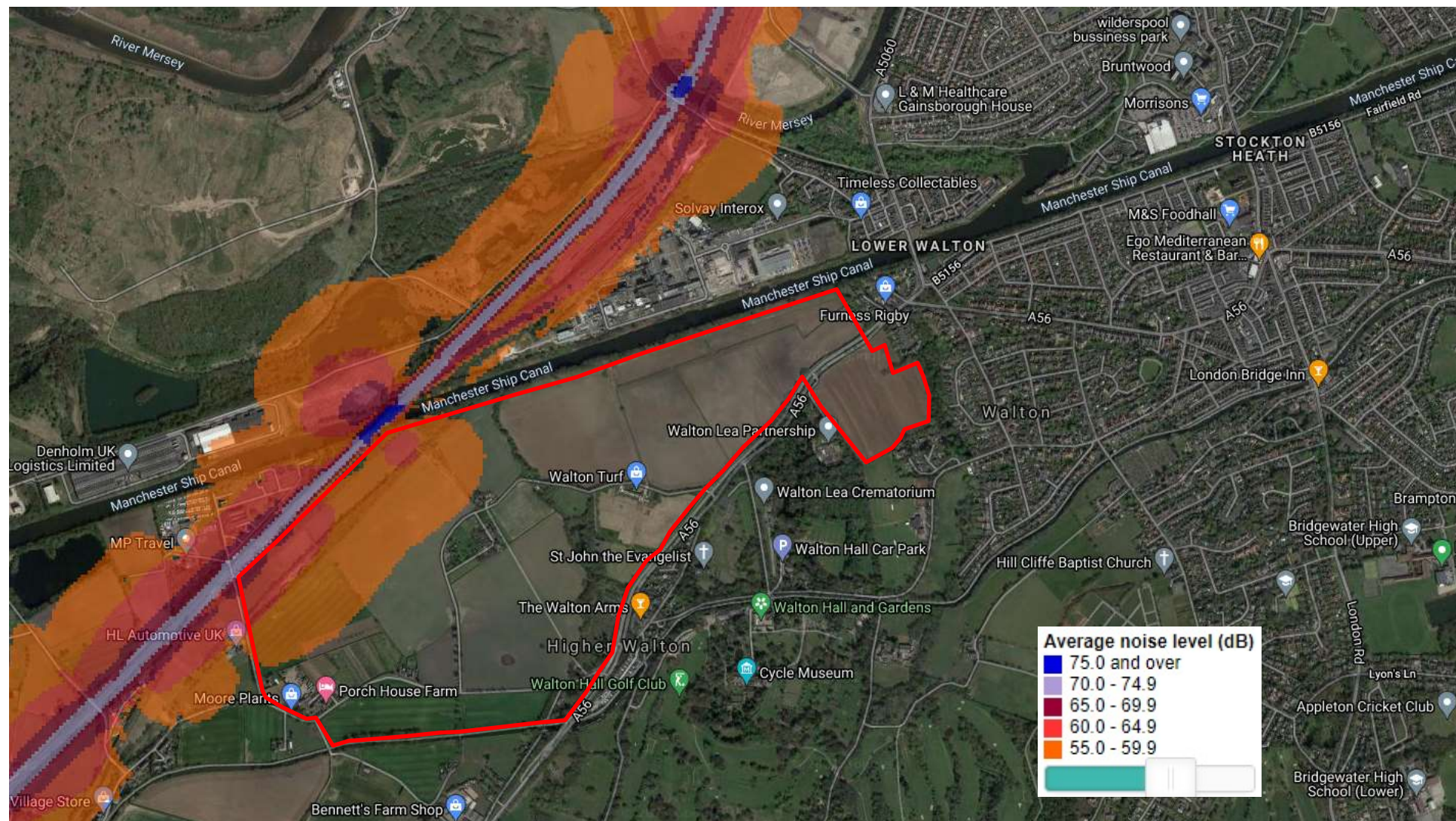
South West Urban Extension
Illustrative Masterplan and development constraints

Drwg No: 630DE-13M Date: 11.06.2018
 Drawn by: AH Checker: SR
 Rev by: SB (10.11.21) Rev checker: DL
 QM Status: Checked Product Status: Issue
 Scale: 1:10,000 @ A3

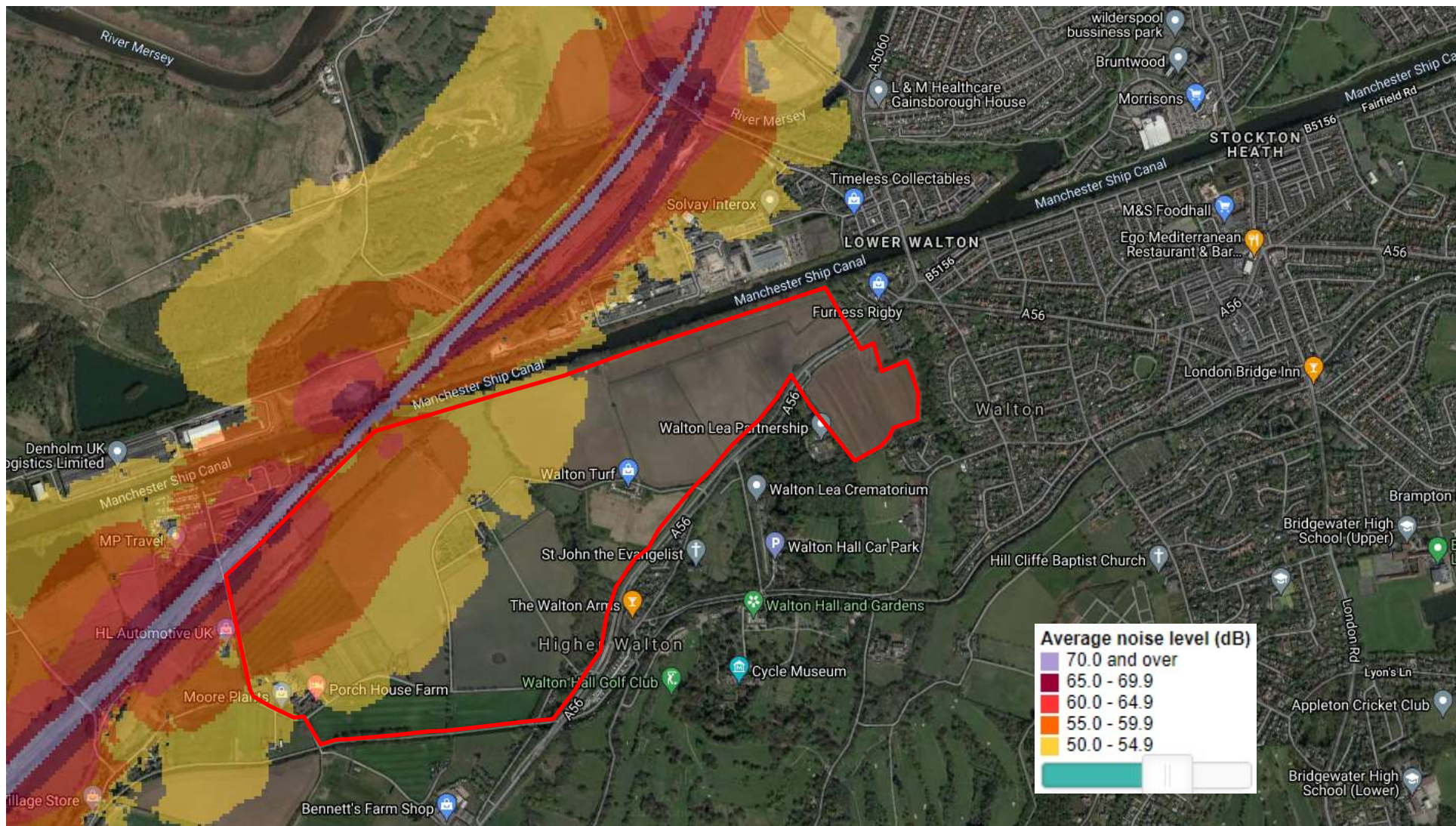
Appendix 3a: DEFRA Daytime Road Traffic Noise Mapping, L_{Aeq} , Daytime, 16hr



Appendix 4a: DEFRA Daytime Railway Noise Mapping, L_{Aeq} , Daytime, 16hr



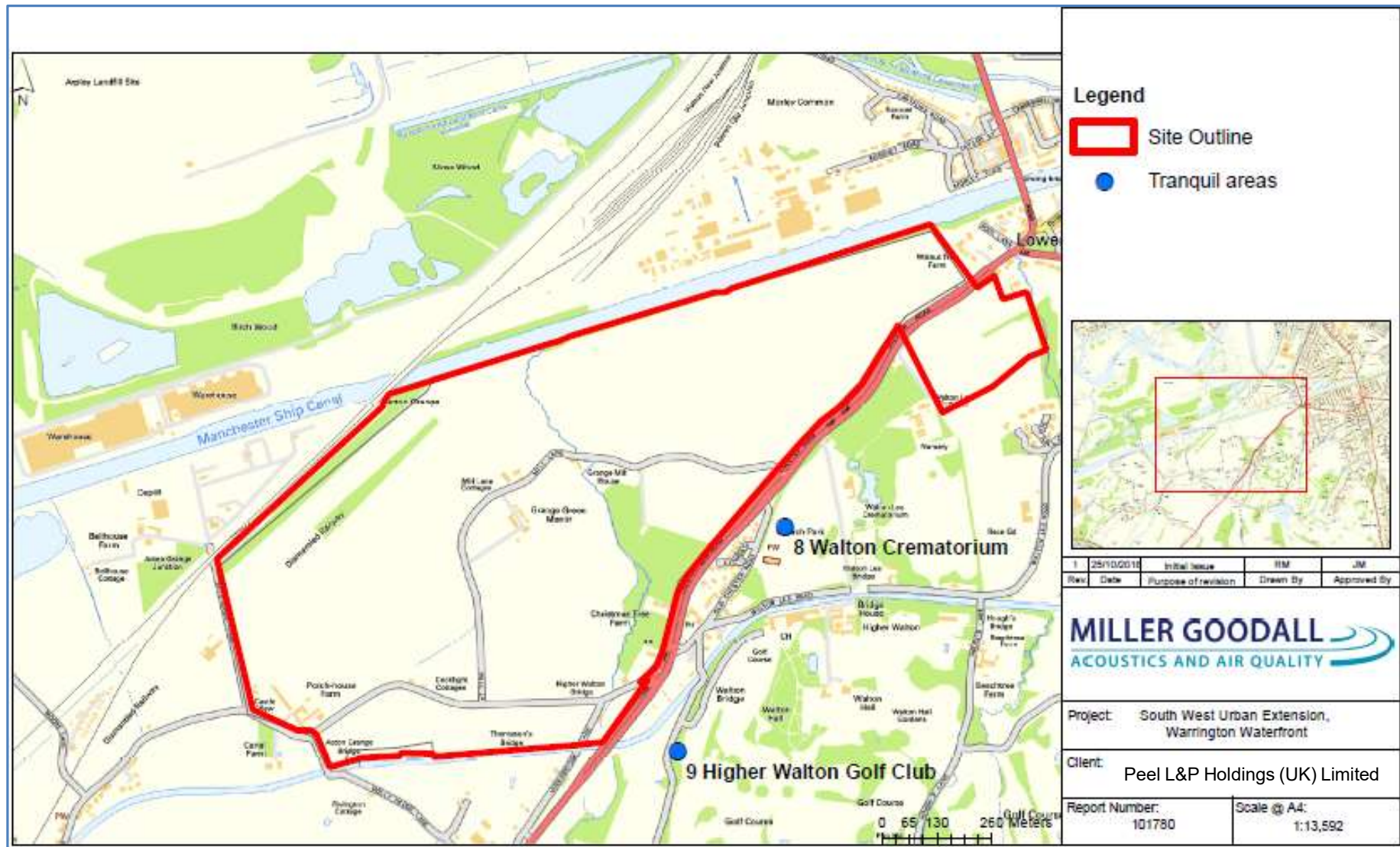
Appendix 4b: DEFRA Night time Railway Noise Mapping, L_{Aeq} , Night, 8hr



Appendix 5: Potential Industrial and Commercial Noise Sources



Appendix 6: Tranquil Areas



Glossary of Terms

- Decibel (dB)** The unit used to quantify sound pressure levels; it is derived from the logarithm of the ratio between the value of a quantity and a reference value. It is used to describe the level of many different quantities. For sound pressure level the reference quantity is 20 μPa , the threshold of normal hearing is in the region of 0 dB, and 140 dB is the threshold of pain. A change of 1 dB is usually only perceptible under controlled conditions.
- dB L_A** Decibels measured on a sound level meter incorporating a frequency weighting (A weighting) which differentiates between sounds of different frequency (pitch) in a similar way to the human ear. Measurements in dB L_A broadly agree with an individual's assessment of loudness. A change of 3 dB L_A is the minimum perceptible under normal conditions, and a change of 10 dB L_A corresponds roughly to halving or doubling the loudness of a sound. The background noise level in a living room may be about 30 dB L_A ; normal conversation about 60 dB L_A at 1 meter; heavy road traffic about 80 dB L_A at 10 meters; the level near a pneumatic drill about 100 dB L_A .
- $L_{A90,T}$** The A weighted noise level exceeded for 90% of the specified measurement period (T). In BS 4142: 1997 it is used to define background noise level.
- $L_{Aeq,T}$** The equivalent continuous sound level. The sound level of a notionally steady sound having the same energy as a fluctuating sound over a specified measurement period (T). $L_{Aeq,T}$ is used to describe many types of noise and can be measured directly with an integrating sound level meter.
- L_{Amax}** The highest A weighted noise level recorded during the time period. It is usually used to describe the highest noise level that occurred during the event.
- NOEL** No observed effect level: the level of noise exposure below which no effect at all on health or quality of life can be detected.
- LOAEL** Lowest observed adverse effect level: the level of noise exposure above which adverse effects on health or quality of life can be detected.
- SOAEL** Significant observed adverse effect level: the level of noise exposure above which significant adverse effects on health or quality of life can be detected.

