9 NOISE

9.1 Introduction

9.1.1 This chapter considers the likely significant noise effects associated with the proposed development, as presented in Chapter 2: Proposed Development Description.

9.1.2 The specific objectives of the chapter are to:

- describe the baseline noise conditions;
- describe the assessment methodology and significance criteria used in completing the impact assessment;
- describe the potential effects;
- describe the mitigation measures proposed to address likely significant effects; and
- assess the residual effects remaining following the implementation of mitigation.

9.1.3 The assessment has been carried out by Joseph Mendis of Ramboll who is a Member of the Institute of Acoustics (MIOA).

9.1.4 This chapter refers to the following Technical Appendices (refer to Volume 3):

- Technical Appendix 9.1: Baseline Monitoring Data; and
- Technical Appendix 9.2: Construction Noise Assessment.

9.1.5 This chapter refers to the following Figures (refer to Volume 4):

- Figure 9.1: Baseline Noise Monitoring Locations;
- Figure 9.2: Change in Road Traffic Noise from the 'Do-Minimum' in the baseline year (2022) to 'Do-Minimum' in the future assessment year (2037)
- Figure 9.3: Change in Road Traffic Noise from the 'Do-Minimum' in the baseline year (2022) to 'Do-Something' in the baseline year (2022); and
- Figure 9.4: Change in Road Traffic Noise from the 'Do-Minimum' in the baseline year (2022) to 'Do-Something' in the future assessment year (2037).

9.2 Scope of Assessment

9.2.1 The assessment considers changes in road traffic noise at the existing Noise Sensitive Receptors (NSR) following the opening of the completed proposed development. The assessment considers changes in noise that would result from the new junction with the M9 motorway, including changes in road layout and future road traffic associated with the wider Winchburgh Masterplan.

9.3 Limitations & Assumptions

9.3.1 The traffic noise predictions are based on the outputs from Transport Scotland's SEStran Regional Model in terms of 18hr annual average daily traffic flows (AADT) and %HGV's. The mean speeds have been modelled based on the measured noise data.

9.3.2 The traffic model contains future planned developments in the surrounding area.

9.3.3 With regard to the road surfacing, all roads in the study area are assumed to be standard impervious bituminous asphalt with a texture depth of 1 mm.

9.3.4 Taking the motorway speed limit of 70 mph, and the measured noise levels into account, the measured noise levels allowed the modelling of the supplied traffic flows and adjustment for the correct speed in the model to match the measured noise levels. The speed adjustment equated to the stated 100 kmph/60 mph. This was done as road speed data was not provided at the time of the assessment.

Scoping and Consultation

9.3.5 As presented in Technical Appendix 1.2: EIA Scoping Opinion in Volume 3, comments relating to noise were received from West Lothian Council (WLC). In summary, the comments were concerned with the selection of NSRs and study area, and it was agreed that the noise impact assessment would only assess NSRs along Beatlie Road (i.e. The Myre Farm, Niddry Mains House and Duntarvie Castle).

9.3.6 The new residential properties being developed under the Winchburgh Masterplan were excluded from this assessment as the potential impact of the future road traffic has been considered as part of the original Masterplan Environmental Statement (ES)[1], which included consideration of a motorway junction at the location proposed.

9.3.7 An agreement was reached with WLC regarding the assessment methodology, the selection of NSRs and the study area.

Potential Effects Scoped Out

9.3.8 BS 5228:2009[2] Part 2 provides historical data of continuous flight auger (CFA) piling at various distances, as summarised in Table 9.1. This data can be used to provide an indicative assessment of the distance at which significant vibration impacts could occur. However, the ground conditions on-site would affect the propagation and piling methods employed and therefore this method is suitable for initial estimates only.

Table 9.1: Ranges of PPV for Piling

Piling method	Distance from source (m)		
	10	20	30
CFA	0.38 mms-1	0.3 mms-1	0.03 mms-1

9.3.9 It is not considered that piling will be required for the proposed development. Nevertheless, should piling be required, it is expected that the vibration generated from piling would have minimal potential to be perceptible at the nearest sensitive receptor, Duntarvie Castle, at over 120 m away.

9.3.10 Construction traffic is expected to use the B8020 to access the construction site and earthwork storage areas, and also for material delivery. The baseline noise survey shows the noise levels at the identified NSRs, Duntarvie Castle, Myre Farm and Niddry Mains House are 65 dB L_{A10}, 59 dB L_{A10} and 48 dB L_{A10}, respectively. It is understood construction traffic may result in up to 150 trips per day. This has been modelled in the Acoustic Software CandaA. The model shows the likely resultant sound pressure levels at Duntarvie Castle, Myre Farm and Niddry Mains House are 51 dBA, 40 dBA and 46 dBA, respectively. As such, noise associated with construction traffic noise is considered to be negligible in the context of existing traffic on the

[1] Environ (now Ramboll), 2005. Winchburgh Development Initiative – Environmental Statement. August 2005.

[2] British Standards Institute, 2009. BS5228:2009 +A01: Code of Practice for Noise & Vibration control on Construction and Open Sites.

B8020. On this basis, construction traffic has been scoped out from the assessment. It should be noted that a Construction Traffic Management Plan (CTMP) will be developed and produced in consultation with the chosen contractor. This is considered normal practice and the CTMP will define written restriction of construction traffic, e.g. hours of operation.

9.3.11 Operational vibration generated by road traffic, and especially vibrations from heavy goods vehicles (HGVs), does not normally result in perceptible vibrations at distances greater than 20-30 m away from major roads (Guidelines BS5228-2-2009 Construction Vibration). Noise sensitive receptors in the study area are located at significantly greater distances than 30 m. On this basis, operational vibration has been scoped out from the assessment.

9.4 Assessment Methodology

Baseline Characterisation

Study Area

9.4.1 The NSRs have been identified within the 'study area', which is defined as 600 m from any routes affected by the physical road work and discussions with WLC. The study area therefore includes residential properties along the B8020 to the north of the proposed M9 junction (Winchburgh Road) and residential properties along the B8020 to the south of the proposed M9 junction (Beatlie road). Three residential NSRs were identified (and agreed with WLC):

- Duntarvie Castle – 50 m west;
- The Myre Farm – 230 m south west; and
- Niddry Mains House – 630 m south.

9.4.2 The identified NSRs are presented graphically on Figure 9.1 in Volume 4 which also shows baseline noise monitoring locations and proposed development alignment.

Desk Study / Field Survey

9.4.3 Baseline measurements of ambient noise levels were carried out at locations representative of all the NSRs to determine the contribution of road traffic noise and to validate the noise prediction methodology. These results are provided in Technical Appendix 9.1 in Volume 3. The validation was carried out because the road traffic noise emissions may not be accurately predicted at distances over 500 m, and the surface condition that influences the noise emissions is not known. The results of the noise monitoring were used to calibrate the predictions of road traffic noise levels.

9.4.4 Measurements of noise levels were carried out generally in accordance with a shortened procedure described in Calculation of Road Traffic Noise (CNRT) publication[3]. A series of short-term measurements were made in three consecutive hours between 10:00–17:00 to establish the 18-hour L_{A10}.

Construction Noise

9.4.5 Construction noise has been predicted to the three nearest noise-sensitive receptors as previously identified using the methodology set out in BS5228-1[4]. The full details of the

[3] Her Majesty's Stationery Office (HMSO), 1988. Calculation of Road Traffic Noise, Department of Transport, Welsh Office, London: HMSO.
[4] BS5228-1:Noise Code of practice for noise and vibration control on construction and open sites

assessment methodology including the assumed construction activities, plant and sound power levels are presented in Technical Appendix 6.2 in Volume 3.

9.4.6 The magnitude of impact is dependent on the baseline ambient noise levels. The magnitude of impact based on the 'ABC' method from BS5228-1 and the measured baseline is given for each receptor in Table 9.2.

Table 9.2: Classification of Magnitude of Construction Noise Impacts

Receptor	Daytime thresholds	Evening thresholds	Night-time thresholds	Magnitude of Impact	Significance
Duntarvie Castle / The Myre Farm	> 75	> 65	> 55	Major	Significant
	70 - 75	60 – 65	50 – 55	Moderate	Significant
	65 - 70	55 – 60	45 – 50	Minor	Not significant
	< 65	< 55	< 45	Negligible	Not significant
Niddry Mains House	> 70	> 60	> 50	Major	Significant
	65 – 70	55 – 60	45 – 50	Moderate	Significant
	60 – 65	50 – 55	40 – 45	Minor	Not significant
	< 60	< 50	<40	Negligible	Not significant

Operational Noise

9.4.7 The assessment of changes in road traffic noise level has been carried out with reference to the detailed procedure described in the Design Manual for Roads and Bridges (DRMB) guidance[5] HD 213/11

9.4.8 At the detailed assessment level, three comparisons are made for the daytime:

- 'Do-Minimum' in the baseline year (2022) against 'Do-Minimum' in the future assessment year (2037): Long term.
- 'Do-Minimum' in the baseline year (2022) against 'Do-Something' in the baseline year (2022): Short term
- 'Do-Minimum' in the baseline year (2022) against 'Do-Something' in the future assessment year (2037): Long term.

9.4.9 Only comparisons in the long term are considered at night-time i.e.:

- 'Do-Minimum' in the baseline year (2022) against 'Do-Minimum' in the future assessment year (2037): Long term.
- 'Do-Minimum' in the baseline year (2022) against 'Do-Something' in the future assessment year (2037): Long term.

9.4.10 Noise levels at identified NSRs in all assessment scenarios are predicted in accordance with CRTN, as prescribed by the DMRB.

9.4.11 The predictions of noise are expressed in terms of 18-hour L_{A10} average[6] level for a period between 06:00–24:00. The predictions of road traffic noise were made based on traffic data provided by Sweco (the 'traffic consultant') in June 2019. The data provided included 18-hour flows and percentage of heavy goods vehicles (HGV) for a road network approximately 7 km

[5] Design Manual for Roads and Bridges (DRMB): Volume 11 Environmental Assessment, Section 3 Environmental Assessment Techniques, Part 7, HD 213/11 – Revision 1, Noise and Vibration.
[6] Method of calculation for the logarithmic average of noise levels associated with road traffic over a time frame of 18 hours.

around the site. Mean traffic speeds have been assumed based on the speed limit and based on the measured L_{A10} levels. The M9 motorway was assumed to have a mean traffic speed of 100 kilometres per hour (km/h) (equating to approximately 60 miles per hour (mph)), and the B8020 (Beatlie Road) was assumed to have a mean traffic speed of 64 km/h and 48 km/h (approximately 40 mph and 30 mph respectively) depending on the speed limit signage.

9.4.12 Predictions were facilitated by the proprietary computer software CadnaA (Computer Aided Noise Abatement), which incorporates the CRTN method.

9.4.13 The CRTN method predicts the road traffic noise levels that would be experienced on a building façade, which includes a 2.5 dB (decibel) façade correction.

9.4.14 For the night-time assessment, the metric L_{night} has been used as prescribed in DMRB. This metric is recognised by the WHO 'Night Noise Guidelines for Europe' as an indicator of the long-term health impacts from night-time noise.

9.4.15 The 8-hour AADT traffic data as provided by the 'traffic consultant' has been used to predict the L_{night} for a period between 23:00 – 07:00. Traffic speeds were assumed as per the daytime period. The prediction is based on free-field levels.

Assessment of Effects

9.4.16 The guidance presented in the DMRB provides the classification of magnitude of noise impacts, which is intended to assist in establishing significant effects for the daytime. The classification of magnitude of impacts is reproduced below in Table 9.3.

Table 9.3: Classification of Magnitude of Operational Noise Impacts – Daytime

Magnitude of Impacts	Noise Level Change in the Short-term	Noise Level Change in the Long-term	Adopted Significance
Negligible	< 1 dB	< 3 dB	Not significant.
Minor	1 dB – 2.9 dB	3 dB – 4.9 dB	
Moderate	3 dB – 4.9 dB	5 dB – 9.9 dB	Significant.
Major	≥ 5 dB	≥ 10 dB	

9.4.17 Impacts of 'Moderate' or 'Major' significance would constitute a 'significant' effect, and 'Minor' and 'Negligible' would be 'not significant'.

9.4.18 The long-term changes in noise level from Table 9.3 should only be applied to the night-time if the L_{night} is in excess of 55 dB. This corresponds to the interim target for $L_{night,outside}$ specified in the WHO Night Noise Guidelines for Europe.

9.4.19 Night-time levels, unlike daytime façade levels, should be free-field. Thus, 2.5dB has been subtracted from the initially predicted levels in accordance with the DMRB.

9.5 Baseline Conditions

9.5.1 Representative baseline noise levels at the NSRs were established based on the shortened measurement procedure described in CRTN. The 18-hour L_{A10} level was derived from three 15-minute samples at each location in three consecutive hours and the 18-hour L_{A10} was derived as:

L_{A10} (18-hour) = L_{A10} (3-hour) – 1dB, where L_{A10} (3-hour) is an arithmetical average from the three short-term samples.

9.5.2 Results of the baseline noise monitoring are presented in Table 9.4.

Table 9.4: Summary of Measured Baseline Noise Levels		
Monitoring Location	**Receptor Name**	**Derived Baseline 18-Hour L_{A10}**
LT1	Duntarvie Castle	65
LT2	The Myre Farm	59
LT3	Niddry Mains House	48

9.5.3 The acoustic environment at all monitoring locations was observed to be dominated by road traffic noise on both the M9 Motorway and on the B8020.

9.6 Assessment of Likely Effects

Construction Effects

9.6.1 Technical Appendix 6.2 in Volume 3 gives full details of the predicted noise levels from each of the construction activities. For the purposes of this assessment, the highest noise level from any of the construction activities (in this case Earthworks) at each receptor is presented. Table 9.5 presents the predicted noise levels at each of the receptors and assesses their magnitude of impact based on Table 9.5.

Table 9.5: Assessment of Construction Noise Effects (Daytime)			
Receptor Name	**Predicted Construction Noise Level, $dBL_{Aeq,12\text{-}hour}$**	**Magnitude**	**Significance**
Duntarvie Castle	62	Negligible	Not significant
The Myre Farm	52	Negligible	Not significant
Niddry Mains House	45	Negligible	Not significant

The results show that the construction noise would be **not significant** during the daytime for all receptors. However, if evening / night-time works are planned, significant effects could occur at Duntarvie Castle (evening and night) and The Myre Farm (evening only). Thus, construction during these periods should be avoided, or alternative mitigation planned.

Operational Effects - Daytime

9.6.2 Assessment of operational (i.e. traffic related) noise effects has been carried out for the three identified NSRs for the three daytime scenarios required for the detailed level in DMRB.

'Do Minimum' 2022 vs. 'Do Minimum' 2037

9.6.3 The predicted noise levels in the long-term 'Do Minimum' to 'Do Minimum' scenario are presented in Table 9.6. Changes in road traffic noise levels are also presented graphically in the form of noise level difference maps, presented in Figure 9.2 in Volume 4.

9.6.4 As would be expected, an increase in traffic noise levels from 2022 to 2037 is generally predicted due to the natural growth of traffic over time.

Table 9.6: Assessment of Daytime Effects in the 'Do Minimum' 2022 to 'Do Minimum' 2037 (Long-term)					
Receptor	**Predicted Noise Level, LA10,18-hour**		**Change**	**Magnitude**	**Significance**
	Do-Minimum 2022	**Do-Minimum 2037**			
Duntarvie Castle	61.0	61.9	+0.9	Negligible	Not significant.
The Myre Farm	54.5	55.6	+1.1	Negligible	Not significant.
Niddry Mains House	53.8	54.5	+0.7	Negligible	Not significant.

9.6.5 All receptors are predicted to experience **negligible adverse** impacts, which are **not significant**.

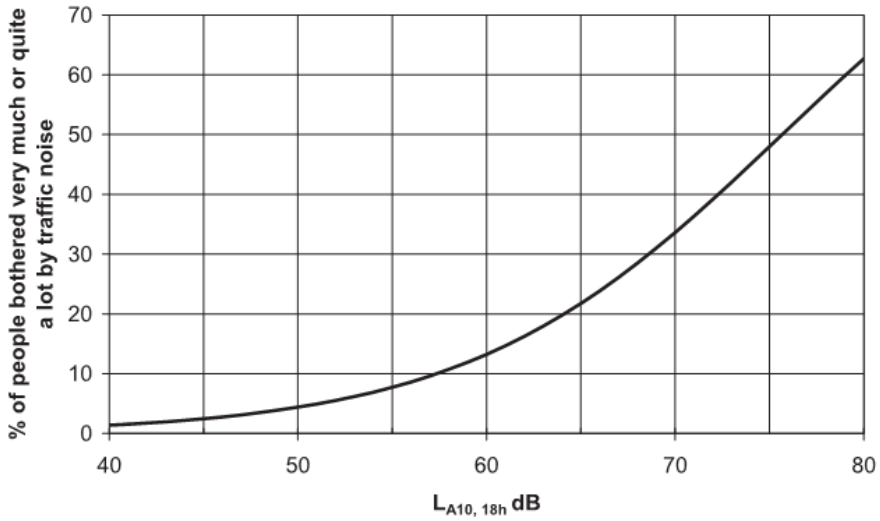

Figure A6.1 – Estimation of Traffic Noise Nuisance – Steady State or Before Noise Change

9.6.6 Figure A6.1 (above) as reproduced from DMRB shows the relationship between the steady state traffic noise level and the estimated annoyance experienced, expressed as the percentage of people "bothered very much or quite a lot".

9.6.7 For the receptors considered, the negligible increases in road traffic noise levels from 2022 to 2037 in the absence of the scheme result in a corresponding increase of <10% in nuisance due to road traffic noise.

'Do Minimum' 2022 vs. 'Do Something' 2022

9.6.8 The predicted noise levels in the short-term are presented in Table 9.7. Changes in road traffic noise levels are also presented graphically in the form of noise level difference maps, presented in Figure 9.3 in Volume 4.

Table 9.7: Assessment of Daytime Effects in the 'Do Minimum' 2022 to 'Do Something' 2022 (Short-term)

Receptor	Predicted Noise Level, LA10,18-hour		Change	Magnitude	Significance
	Do-Minimum 2022	Do-Something 2022			
Duntarvie Castle	61.0	60.1	-0.9	Negligible	Not significant.
The Myre Farm	54.5	55.2	+0.7	Negligible	Not significant.
Niddry Mains House	53.8	55.7	+1.9	Minor	Not significant.

9.6.9 All receptors are predicted to experience **negligible-minor adverse** impacts in the short-term, which are **not significant**.

9.6.10 Research has shown that people are more sensitive to abrupt changes in traffic noise, for example following the opening of a new road, than would be predicted from the steady state relationship between traffic noise and nuisance. These effects last for a number of years. However, in the longer term the perceived noise nuisance tends towards steady state levels due to familiarisation. The percentage change due to an abrupt change is shown in the graph below (Figure A6.2) as reproduced from the DMRB.

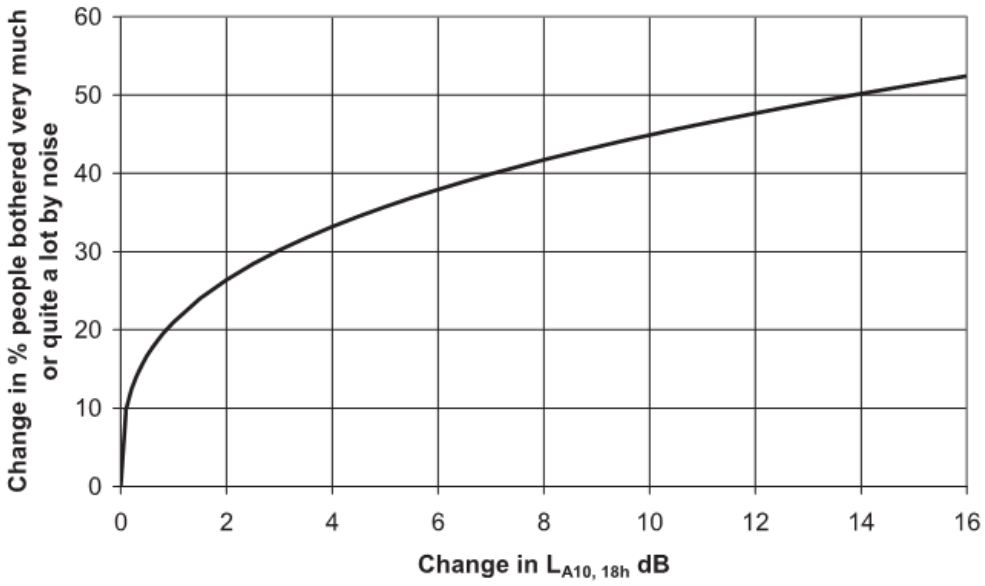

Figure A6.2: Estimation of Traffic Noise Nuisance – Change in % Bothered Very Much or Quite a Lot by Traffic Noise

9.6.11 For the receptors considered, the negligible increases in road traffic noise levels as a result of the scheme result in a corresponding increase of <10% in nuisance due to road traffic noise for two out of the three properties considered. Niddry Mains House shows a +1.9 change. However, it is noted that this change occurs at just one property, and the 25% indicator would mean just one person would be bothered assuming a household of 4 persons. The percentage of people bothered would be 28% just after an increase to 55.7 $L_{A10,18hr}$ if the initial noise level was 48dB $L_{A10,18hr}$ (with 3% of people bothered already). This would eventually diminish in the

long term due to familiarisation to become approximately 8% bothered (Figure A6.1 in Section 9.5.5).

'Do Minimum' 2022 vs. 'Do Something' 2037

9.6.12 Predicted noise levels in the long-term ('Do Minimum' to 'Do Something' scenario) are presented in Table 9.8. Changes in road traffic noise levels are also presented graphically in the form of noise level difference maps, presented in Figure 9.4 in Volume 4.

Table 9.8: Assessment of Daytime Effects in the 'Do Minimum' 2022 to 'Do Something' 2037 (Long-term)

Receptor	Predicted Noise Level, $L_{A10,18\text{-hour}}$		Change	Magnitude	Significance
	Do-Minimum 2022	Do-Something 2037			
Duntarvie Castle	61.0	61.8	+0.8	Negligible	Not significant.
The Myre Farm	54.5	56.7	+2.2	Negligible	Not significant.
Niddry Mains House	53.8	57.2	+3.4	Minor	Not significant.

9.6.13 All receptors are predicted to experience **negligible-minor adverse** impacts in the long-term, which are **not significant**.

9.6.14 In addition, changes in road traffic noise at Niddry Mains House are expected to be lower than those predicted, as the predictions of noise did not consider any screening of the future alignment of B8020 (Beatlie Road), provided by the intervening buildings in development blocks AA and CC. The blocks proposed as part of the Winchburgh Masterplan are specified in the 2005 ES as low and medium density respectively, with building heights up to 15 m. Buildings in these development areas are expected to provide a significant amount of screening to Niddry Mains House and result in lesser increase in road traffic noise than the presented 'free-field' predictions.

9.6.15 For the receptors considered, the negligible increases in road traffic noise levels as a result of the scheme result in a corresponding increase of <10% in nuisance due to road traffic noise for one out of the three properties considered. Niddry Mains House shows a +3.4 change. The 29% indicator would mean just one person would be bothered if a household of 4 persons was assumed. The percentage of people bothered would be 32% just after an increase to 57.2 $L_{A10,18hr}$ if the initial noise level was 48dB $L_{A10,18hr}$ (with 3% of people bothered already). This would eventually diminish in the long term due to familiarisation to become approximately 9% bothered (Figure A6.1 in Section 9.5.5).

Operational Effects – Night-time

9.6.16 Assessment of operational (i.e. traffic related) noise effects at night has been carried out for the three identified NSRs for the two night-time scenarios required for the detailed assessment level in the DMRB. These are both long-term comparisons, with the change in noise level only being assessed where the levels are >55 dB.

9.6.17 The 'Do Minimum' 2022 to 'Do Minimum' 2037 night-time noise levels are presented in table 9.9.

Table 9.9: Assessment of Night-Time Effects in the 'Do Minimum' to 'Do Minimum' (Long-term)

Receptor	Predicted Noise Level, LA10,18-hour		Change	Magnitude	Significance
	Do-Minimum 2022	Do-Minimum 2037			
Duntarvie Castle	56.4	57.2	+0.8	Negligible	Not significant.
The Myre Farm	49.8	50.4	-	-	Not significant.
Niddry Mains House	49.3	49.9	-	-	Not significant.

9.6.18 The 'Do Minimum' 2022 to 'Do Something' 2037 night-time noise levels are presented in Table 9.10.

Table 9.10: Assessment of Night-Time Effects in the 'Do Minimum' 2022 to 'Do Something' 2037 (Long-term)

Receptor	Predicted Noise Level, $L_{A10,18\text{-hour}}$		Change	Magnitude	Significance
	Do-Minimum 2022	Do-Something 2037			
Duntarvie Castle	56.4	54.7	-1.7	Negligible	Not significant.
The Myre Farm	49.8	49.8	-	-	Not significant.
Niddry Mains House	49.3	49.4	-	-	Not significant.

9.6.19 All receptors are predicted to experience **negligible adverse** impacts in both long-term scenarios. Thus, the effect is considered to be **not significant** in all cases.

9.6.20 The predicted noise levels at the relevant façade of each property have been used to carry out an initial assessment of the likelihood of any properties qualifying under the Noise Insulation Regulations. The Noise Insulation (Scotland) Regulations (NIR) 1975[7] (amended 1988), grant the power to a highway authority to provide noise attenuation measures in the form of secondary glazing and mechanical ventilation to habitable rooms of residential properties affected by road traffic noise from an "altered highway", similar to the proposed junction works, which meet the following criteria.

- The combined expected maximum traffic noise level, i.e. the relevant noise level, from the new or altered highway together with other traffic in the vicinity must not be less than the specified noise level, 68dB $L_{A10,18h;}$
- The relevant noise level is at least 1.0 dB(A) more than the prevailing noise level, i.e. the total traffic noise level existing before works to construct or improve the highway were begun, and
- The contribution to the increase in the relevant noise level from the new or altered highway must be at least 1.0 dB(A)

9.6.21 None of the identified properties qualify for noise insulation in accordance with NIR.

[7] The Noise Insulation Regulations 1975

9.7 Assessment of Cumulative Effects

9.7.1 The proposed motorway junction project is inherently linked with the wider Winchburgh Masterplan, which includes substantial residential and commercial development in the area. The traffic data used for this assessment includes the vehicular movements associated with the development proposed in the Winchburgh Masterplan. As such, the assessment of likely operational effects inherently represents the anticipated cumulative effects of the proposed development with the wider Winchburgh Masterplan.

9.7.2 Therefore, the cumulative effects of the proposed development are **minor adverse (not significant)** in both the short- and long-term.

9.8 Mitigation

9.8.1 Best Practice Measures (BPM) as defined by the Control of Pollution Act 1974[8], would be implemented as part of the working methodology. This would serve to minimise the noise and vibration effects at receptors in the vicinity of the construction works. The reduction in noise levels provided through the implementation of BPM would vary depending on the nature of the works.

9.8.2 Assessment of construction noise identified no significant effect, providing works are carried out during the daytime period. Thus, no additional mitigation is required.

9.8.3 Assessment of noise effects identified no significant operational noise effects and therefore no noise-specific mitigation measures are required for the proposed development.

9.9 Summary

9.9.1 The assessment considered the impact of construction noise from the proposed development from the following construction activities: earthworks; breaking of existing surface; spreading chipping; rolling and compaction; and paving. The activity predicted to generate the most noise (Earthworks) was shown to have no significant impact at the receptors.

9.9.2 The assessment considered changes in road traffic noise level following opening of the proposed development. The assessment considered short-term and long-term impacts at three NSRs within a study area as defined in the DMRB, those located along the B8020 (Beatlie Road) and agreed with WLC. Road traffic noise levels were predicted using a method prescribed by the DMRB, and predicted values were compared with the measured baseline levels at each of the three NSRs. A good agreement was found between the predictions and the baseline measurements.

9.9.3 The assessment found that no receptors would experience significant adverse noise effects and therefore no noise-specific mitigation measures were proposed.

9.9.4 Table 9.11 provides a summary of the anticipated residual noise effects that are likely to arise as a result of the proposed development.

[8] HMSO, 1974. Control of Pollution Act 1974.

Table 9.11: Summary of Residual Effects				
Likely Significant Effect	**Mitigation**	**Means of Implementation**	**Residual Effect**	**Outcome**
Construction				
Construction noise affecting: Duntarvie Castle; The Myre Farm; and Niddry Mains House	None proposed.	None proposed.	Negligible Adverse	Not significant
Operational				
Increase in operational road traffic noise level along the M9 corridor and B8020 (Beatlie Road) affecting: Duntarvie Castle; The Myre Farm; and Niddry Mains House.	None proposed.	None proposed.	Negligible - Minor Adverse	Not significant