3. NOISE IMPACT

Introduction

3.1 Potential noise impacts likely to arise from the proposed Project during both the construction and operation phases have been evaluated and the results are presented in this section.

3.2 The following potential noise impacts have been assessed and the predicted noise levels and necessary noise mitigation measures, are presented in this section:

- Construction noise
- Traffic noise (operation phase)

Environmental Legislation, Standards and Guidelines

3.3 The Noise Control Ordinance (NCO) and Environmental Impact Assessment Ordinance (EIAO) provide the statutory framework for noise control. Assessment procedures and standards are set out in five Technical Memoranda (TMs) listed below:

- TM on Environmental Impact Assessment Process (EIAO-TM);
- TM on Noise from Construction Work other than Percussive Piling (GW-TW);
- TM on Noise from Percussive Piling (PP-TM);
- TM on Noise form Construction Work in Designated Area (DA-TM); and
- TM on Noise from Places other than Domestic Premises, Public Places or Construction Sites (IND-TM)

3.4 Potential noise impacts arising from the Project have been assessed in accordance with the criteria and methodology given in the TMs made under the NCO and the EIAO-TM.

Construction Noise

3.5 Daytime construction noise, i.e. 0700 – 1900 on weekdays, is controlled under the EIAO-TM. Annex 5 of the EIAO-TM sets out the construction noise limits, the noise limit is Leq(30 min) 75dB(A) for domestic premises and Leq(30 min) 70dB(A) for schools during normal hours (65dB(A) during examination) and all other where unaided voice communication is required. Construction activities other than percussive piling using powered mechanical equipment (PME) undertaken at other times (i.e. restricted hours) are under the control of the NCO.

3.6 Between 1900 and 0700 hours and whole day on Sundays and public holidays, activities involving the use of PME for the purpose of carrying out construction work are prohibited unless a construction noise permit (CNP) has been obtained. A CNP may be granted provided that the Acceptable Noise Level (ANL) for the Noise Sensitive Receivers (NSRs) can comply with the requirements in the GW-TM. ANLs are assigned depending upon the Area Sensitivity Rating (ASR). The corresponding basic noise levels (BNLs) for evening and night-time period, are given in Table 3.1.

Table 3.1 Construction Noise Criteria for Activity other than Percussive Piling

Time Period	Basic Noise Level (BNLs)		
	ASR A	ASR B	ASR C
Evening (1900 to 2300 hours) [1]	60	65	70
Night (2300 to 0700 hours)	45	50	55

Notes: [1] includes Sundays and Public Holidays during daytime and evening

3.7 The Assessment Area is generally rural in nature and is sparsely populated. The only village site with habitation identified within the Assessment Area would be Luk Keng Tsuen, and is directly affected by traffic noise from the existing North Lantau Highway. Therefore, the area sensitivity rating would be assumed as "B" for the existing noise sensitive receivers at Luk Keng Tsuen. According to Table 3.1, the construction noise criteria for the sensitive receivers would be 65dB(A) in the evening and 50dB(A) at night. The ASR would be determined at the time of assessment of such an application based on the contemporary situations/conditions, in accordance with the NCO.

3.8 Despite any description or assessment made in this EIA Report on construction noise aspects, there is no guarantee that a Construction Noise Permit (CNP) will be issued for the project construction. The Noise Control Authority will consider a well-justified CNP application, once filed, for construction works within restricted hours as guided by the relevant Technical Memoranda issued under the Noise Control Ordinance. The Noise Control Authority will take into account contemporary conditions / situations of adjoining land uses and any previous complaints against construction activities at the site before making his decision in granting a CNP. Nothing in this EIA Report shall bind the Noise Control Authority in making his decision. If a CNP is to be issued, the Noise Control Authority shall include in it any condition he thinks fit. Failure to comply with any such conditions will lead to cancellation of the CNP and prosecution action under the NCO.

3.9 There are some factors affecting the assessment results of a CNP application, such as the assigning of Area Sensitivity Rating, Acceptable Noise Levels etc. The Noise Control Authority would decide these at the time of assessment of such an application based on the contemporary situations / conditions. It should be noted that the situations / conditions around the sites may change from time to time. The Area Sensitivity Ratings assumed in this EIA Report are for indicative assessment only.

3.10 Since the Assessment Area does not fall within any designated area under the NCO. Hence, noise criteria set out in the DA-TM would not be applicable to this Project.

3.11 Percussive piling would not be adopted for the proposed Project. Therefore, criteria as set out in the PP-TM would also not be applicable to this Project.

Operation Noise

3.12 Annex 5 of the EIAO-TM defines the criteria for evaluating road traffic noise impact. While only residential NSRs are identified within the assessment area, the road traffic noise criterion for peak hour traffic, expressed in terms of $L_{10\ (1\ hour)}$ of "70dB(A) at the facades of dwellings" would be applicable.

3.13 As required by the EIA Study Brief, in case where a number of the NSRs cannot all be protected by the recommended direct mitigation measures, provision of indirect technical remedies (ITR) in the form of acoustic insulation and air conditioning should be considered under the EIAO-TM and the ExCo directive "Equitable Redress for Persons Exposed to Increased Noise Resulting from the Use of New Roads". The eligibility for indirect technical remedies will be tested against the following three criteria:

- ♣ The predicted overall noise level from the new road together with other traffic noise in the vicinity must be above the noise criteria specified in the EIAO-TM (e.g. 70dB(A) for residential dwellings);

- The predicted overall noise level is at least 1.0dB(A) more than the prevailing traffic noise level; and

- The contribution to the increase in the predicted overall noise level from the new road must be at least 1.0dB(A).

3.14 For the purpose of noise impact assessment, 'new roads' would be considered to include all new road alignments proposed to be constructed within the scope of the Project (see ***Section 2.2***). Those existing road sections which are proposed to undergo major modification which will directly result in 25% increase in lanes or substantial changes in alignment or characters (e.g. change to a high speed road) of the existing road would also be regarded as 'new roads'. Road sections which will remain unchanged and those which will not be subject to major modification would be categorised as 'existing roads'. Roads which are not proposed within the context of this Project such as Sunny Bay Road would also be classified as 'existing roads' for the purpose of the noise impact assessment.

3.15 With reference to the above criteria, North Lantau Highway (NLH), Link Roads 1 to 4, and Sunny Bay Road were defined as 'existing road' in our traffic noise prediction model. All other roads within the proposed Project site boundary including Road A, Slip Roads 5 and 6 and Road P1 Roundabout were categorised as 'new roads'. **Appendix 3.1** illustrates the extent of the defined new roads and existing roads.

Assessment Methodology and Uncertainties

Construction Noise During Unrestricted Hours

3.16 In accordance with the EIAO-TM, the methodology outlined in the GW-TM was used for the construction noise assessment (excluding percussive piling), and is summarized below:

- Locate the NSRs which would most likely be affected by noise from the construction work;

- Determine the items of Powered Mechanical Equipment (PME) for each discrete construction activity, based on available information or agreed plant inventories;

- Assign sound power levels (SWLs) to the proposed PME according to the GW-TM or other sources;

- Calculate distance attenuation and screening effects to NSRs from notional noise source;

- Predict construction noise levels at NSRs in the absence of any mitigation measures; and

- Include a 3 dB(A) façade correction to the predicted noise levels in order to account for the façade effect at each NSR.

3.17 Sound power levels (SWLs) of the equipment have been taken from Table 3 of GW-TM. Where no sound power level (SWL) was given in the GW-TM, reference was made to British Standard 5228:Part 1:1997 *Noise Control on Construction and Open Sites* and previous similar studies or from measurements taken at other sites in Hong Kong. Groups of powered mechanical equipment (PME) have been assigned for various construction activities of the proposed Project. The plant inventories for this Project are listed in **Appendix 3.2** (assuming normal daytime works). The plant inventory list has been vetted and confirmed by the Engineer as well as the Project Proponent CEDD as being practical and adequate for completing the works within the scheduled timeframe.

Construction Noise During Restricted Hours

3.18 Generally, the construction activities of the Project will be carried out in non-restricted hours (0700-1900 hours) with the exception of dredging works which would be carried out on 16-hour day. The construction of sections of Slip Road 5 and Slip Road 6 crossing NLH and MTRC Airport Express

Line would also be required to be undertaken during night time (i.e. 2300-0700) in order to avoid causing interruption or disturbance to the road traffic as well as train service.

3.19 For any construction works planned during the restricted hours, it will be the responsibility of the Contractor to ensure compliance with the NCO and the relevant TMs. In such cases, the Contractor will be required to submit CNP application to the Noise Control Authority and abide by any conditions stated in the CNP, should one be issued. Therefore, the potential noise impacts of construction works proposed within restricted hours are not formally assessed in this EIA. In order to facilitate the efforts of the Project Proponent to avoid any potentially adverse noise impacts, an indicative assessment (***Section 3.52 – 3.56***) was carried out.

Operational Phase – Road Traffic Noise

3.20 Traffic noise impacts were predicted using the methodology provided in the UK Department of Transport Calculation of Road Traffic Noise (CRTN) 1988. According to EIAO-TM, the road traffic noise should be predicted based on the maximum traffic forecast within 15 years upon the operation of the proposed roadwork. As discussed in ***Sections 2.55 - 2.56***, traffic forecasts for year 2023 would be considered as the peak traffic projection for the proposed project, and were adopted for the traffic noise assessment. Projected peak hourly traffic flow and vehicle composition for 2023 is presented in **Appendix 2.2**.

3.21 In the light of one of the main purposes of the proposed Project that is to provide alternative routes to and from the Theme Park in Penny's Bay in case of emergency such as car accidents, traffic noise impact of a hypothetical emergency situation was assessed. The traffic condition for the emergency scenario was based on the assumption that the existing Link Roads 2 and 4 are blocked, and that all traffic are diverted to the proposed Slip Roads 5 and 6. Traffic forecast for the emergency scenario is provided in **Appendix 2.2**.

3.22 For the present assessment, low noise road surfacing has been modelled for all road sections of NLH. For the remaining road sections including the proposed Slip Roads 5 and 6, Road A incorporated in the noise prediction model, impervious road surfacing was assumed. The operation speed for NLH would be 110kph and that for all other road sections within the assessment area would be 50kph. It was assumed in the model that concrete profile barriers of 0.8m high would be constructed along both sides of the elevated road sections.

3.23 The road network, proposed building layout and all other features that could have noise screening or reflective effects, were taken into account in the road traffic noise model. The roads were divided into segments. A road layout defines the road width, road surface type and traffic mix, flow and road design speed. The segmentation and calculation process were carried out using a model based on the CRTN, which is agreed by the EPD. Noise levels were calculated at each receiver point at each floor up to the top floor. A sample calculation of the traffic noise model is provided in **Appendix 3.3** for reference.

Level of Uncertainty in the Assessment

3.24 The predictions of construction and road traffic noise impacts were based on the methodologies described in the GW-TM under the NCO and the United Kingdom Department of Transport's "Calculation of Road Traffic Noise" (1988) respectively. The methodology had previously been applied in similar situations in other EIA studies (e.g. NLDFS EIA and Theme Park EIA), and has generally been accepted for use in assessing construction and traffic noise impacts and comparison of prediction results with EIAO-TM noise criteria.

3.25 There would be some limitations of methodology such as the accuracy of the predictive base data for future e.g. plant inventory for the proposed construction works and traffic flow forecasts. Quantitative uncertainties in the assessment of impacts should be considered when drawing conclusions from the assessment.

3.26 In carrying out the assessment, realistic worst case assumptions have been made in order to provide a conservative assessment of noise impacts. The construction noise impact was assessed based on conservative estimates for the types of plant and methods of working. As for the assessment of road traffic noise impact, peak hourly traffic flows representing the worst case scenario were adopted.

Description of the Environment

3.27 The Assessment Area is located in Sunny Bay at the north shore of Lantau Island. It is generally rural, and is a sparsely populated area. The only noise-sensitive use identified within the Assessment Area would be the village settlement at Luk Keng Tsuen, which is sited about 220m from the proposed Project site. In the vicinity of the construction area are North Lantau Highway and the Mass Transit Railway (MTRC) Airport Express Line.

3.28 The Assessment Area is subject to noise arising from a number of ongoing construction projects such as '*Disneyland Resort Line*' by MTRC and the construction of public transport interchange in Sunny Bay Station under the contract of "*Sunny Bay Reclamation*" by CEDD, along with railway noise from the operation of the MTRC Airport Express Line. The existing noise environment is also dominated by road traffic noise along the existing North Lantau Highway.

Noise Sensitive Receivers

3.29 NSRs within a distance of 300 m from the either side of and along the full sketch of the Project boundary were identified for noise assessments.

3.30 According to Annex 13 of the EIAO-TM, noise sensitive receivers (NSRs) include the following:

- Residential uses – all domestic premises including temporary housing
- Institutional uses – educational institutions
- Other uses such as hostels and country parks

3.31 The closest and only existing NSRs which would be potentially impacted by the Project are in Luk Keng Tsuen, which is located at about 220m from the proposed Project site boundary.

3.32 The planned Lantau North Extension Country Park is situated more than 400m from the proposed Project site boundary. Therefore, it would not be taken as NSRs for this study.

3.33 By reference to relevant Outline Zoning Plans, Outline Development Plans, Layout Plans and other published plans in relation to the planning and development on the north-east Lantau, no planned/committed NSRs are found within the assessment area.

3.34 Locations of representative NSRs are shown on **Figure 3.1**, and they were designated for the purpose of noise assessment. Noise impact during the operation phase of the Project was assessed at NSRs LK1-LK4. As for construction noise impact, NSRs LK1 and LK3 were selected for assessment as they would be located closest to the proposed work site boundary, representing the worst affected NSRs in Luk Keng Tsuen.

3.35 Pursuant to the requirements of the EIA Study Brief, the assessment points were agreed with the Director of Environmental Protection (DEP) prior to the quantitative noise assessment.

Identification of Environmental Impact

Construction Phase

3.36 The potential source of noise impact during the construction phase of the Project would be the use of PME for various construction activities. As indicated in the preliminary construction program

(Appendix 2.1 refers), the Project will last from April 2006 to December 2008, which includes 4 major construction tasks as listed below:

- Reclamation at Sunny Bay;
- Construction of Slip Road 5;
- Construction of Slip Road 6; and
- Construction of Road A.

3.37 All the proposed construction activities, except the reclamation at Sunny Bay, would be undertaken at distances of more than about 290m away from the only NSRs at Luk Keng Tsuen. The large separation distances between the proposed work sites and the NSRs would thereby limit the potential of imposing insurmountable construction noise impact on sensitive receivers.

3.38 Amongst all construction activities, the reclamation at Sunny Bay, which is to be undertaken at a distance of about 250-360m, would be closest to the NSRs at Luk Keng Tsuen, and would therefore likely be the major source of construction noise impact.

3.39 The concrete units required for the construction of road/bridge structures would be pre-fabricated outside Hong Kong. Therefore, noise impacts due to concrete pre-fabrication activities (e.g. stacking of concrete units) would not arise. Insurmountable off-site noise impact would also not be expected given the small scale of the Project and that the quantity of pre-cast concrete units necessary for the construction would not be substantial.

Cumulative Impacts

3.40 Based on the latest assumption, the construction of the Project is scheduled to commence in April 2006 for completion in December 2008. No concurrent construction work which could contribute to the cumulative construction noise impacts at the NSRs was identified.

Operational Phase

3.41 In addition to the existing NLH, Link Roads 1 and 2 and the planned Sunny Bay Road, traffic along Slip Roads 5 and 6, Road A which are to be constructed under this Project would be sources of traffic noise impact on NSRs at Luk Keng Tsuen during the operation stage of the Project.

3.42 It would be envisaged that, under prevailing normal circumstances, insurmountable noise impact due to the road traffic along the road sections proposed to be constructed under this Project would not be envisaged given the projected traffic flows along these road sections would be low. In the case of an emergency situation, traffic along these road sections would be expected to go up. However, such an emergency would only happen rarely and its duration would be limited. In this regard, the assessment for the emergency scenario would be adopted as a reference scenario only.

Evaluation of Impacts

Construction Phase

3.43 As broadly illustrated in the construction programme, various construction activities may be carried out concurrently during a particular period. The unmitigated cumulative noise levels arising from each construction activity at representative NSRs were predicted. A summary of the unmitigated construction noise levels predicted at representative NSRs is given in the below table.

Table 3.2 Summary of Unmitigated Construction Noise Levels During Normal Daytime Working Hours

NSRs	Predicted Unmitigated Construction Noise Levels During Normal Daytime Working Hour (0700-1900 on weekdays), dB(A)	EIAO-TM Noise Criteria, dB(A)
LK1	63-78dB(A)	75
LK3	64-78dB(A)	75

3.44 The assessment results showed that predicted cumulative noise levels at the representative NSRs would range from 63 to 78dB(A). Exceedance in the range of 1-3dB(A) was predicted at NSRs LK1 and LK3 for daytime (i.e. 0700-1900) if no noise control measure is in place. There would be approximately 8 dwellings exposed to construction noise levels exceeding the daytime construction noise criteria of 75dB(A). Mitigation measures would be considered necessary in order to abate the construction noise impacts. **Appendix 3.4** shows the details of construction noise calculation for the unmitigated scenario.

Operational Phase

3.45 Unmitigated traffic noise levels at the 4 representative NSRs for both the normal and emergency scenario were predicted, and the assessment results are given in Table 3.3 below.

Table 3.3 Predicted Traffic Noise Levels for the Normal and Emergency Scenarios

NSRs	Floor	Predicted Unmitigated Traffic Noise Levels (Peak Hour Traffic $L_{10\ (1\ hour)}$),, dB(A)			EIAO-TM Noise Criteria, dB(A)
		New Road	Existing Road	Overall	
Normal Scenario					
LK1	1/F	48.6	68.4	68.4	70
	2/F	48.9	68.7	68.7	70
LK2	1/F	48.8	68.1	68.1	70
	2/F	49.0	68.3	68.4	70
LK3	1/F	49.3	68.4	68.4	70
	2/F	49.6	68.6	68.6	70
LK4	1/F	49.4	68.3	68.3	70
	2/F	49.6	68.5	68.5	70
Emergency Scenario					
LK1	1/F	60.8	68.5	69.2	70
	2/F	61.1	68.8	69.5	70
LK2	1/F	60.9	68.3	69.0	70
	2/F	61.2	68.5	69.3	70
LK3	1/F	61.4	68.5	69.3	70
	2/F	61.7	68.8	69.6	70
LK4	1/F	61.4	68.5	69.3	70
	2/F	61.6	68.7	69.5	70

3.46 The modelling results showed that the unmitigated cumulative road traffic noise levels ($L_{10\ (1\ hour)}$) at the NSRs LK1-LK4 were predicted to range from 68 to 69dB(A) for the normal scenario and 69 to 70dB(A) for the emergency scenario. Neither 'new roads' nor 'existing roads' would trigger exceedance of the road traffic noise limit of the EIAO-TM. In addition, assessment results also indicated that noise levels predicted at all NSRs for both normal and emergency scenarios would comply with the EIAO-TM noise criterion for residential premises, i.e. 70dB(A). No mitigation measure would therefore be required.

3.47 The proposed Project forms a part of the planned Road P1, which is a primary distributor between Sunny Bay and Siu Ho Wan. Traffic noise impact arising from the planned Road P1 together with the existing NLH and other road networks planned under the NLDFS including Sunny Bay Road, CKWLR and the planned Route 10 on the NSRs at Luk Keng Tsuen were assessed in the NLDFS EIA. The NLDFS-EIA recommended that a 5m high noise barrier would need to be installed on Road P1 to protect the NSRs at Luk Keng Tsuen. The assessment concluded that, with the recommended mitigation measures in place, no unacceptable traffic noise impact would result from both the existing and the NLDFS planned road networks. It is noted that a section of the recommended noise barrier would fall within the boundary of this Project. The design of 5m high noise barrier recommended in the NLDFS-EIA would be catered for in the future Road P1 project.

Mitigation of Adverse Environmental Impacts

Construction Phase

Good Site Practice

3.48 Although the noise mitigation effects are easily quantifiable and the benefits may vary with site conditions and operating conditions, good site practices are easy to implement and do not impact upon the works schedule. The site practices listed below should be followed during each phase of construction:

- Only well-maintained plant should be operated on-site and plant should be serviced regularly during the construction program;
- Silencers or mufflers on construction equipment should be utilized and should be properly maintained during the construction program;
- Mobile plant, if any, should be sited as far from NSRs as possible;
- Machines and plant (such as trucks) that may be in intermittent use should be shut down between work periods or should be throttled down to a minimum;
- Plant known to emit noise strongly in one direction should, wherever possible, be orientated so that the noise is directed away from the nearby NSRs and;
- Material stockpiles and other structures should be effectively utilised, wherever practicable, in screening noise from on-site construction activities.

Adoption of Quieter Plant

3.49 In order to reduce the excessive noise impacts at the affected NSRs during normal daytime working hours, quieter plants are recommended. The type of quiet plant adopted in this assessment is not a must that the Contractors have to use specific items of plant for the construction operations. The Contractors are allowed to use other type of quiet plant, which have the same total SWL, to meet their needs. The quiet PME adopted in the assessment were taken from the BS5228: Part 1:1997 (**Appendix 3.5**). It should be noted that the silenced PME can be found in Hong Kong.

3.50 The construction noise levels predicted at representative NSRs with the use of quiet plant are summarised in Table 3.4. As shown from the results, the adoption of quieter plant would reduce the predicted noise levels at all NSRs to be within the noise limit as stipulated in the EIAO-TM. **Appendix 3.6** shows the details of construction noise calculation for the mitigated scenario.

Table 3.4 Summary of Mitigated Construction Noise Levels During Non-restricted Hours

NSRs	Predicted Mitigated Construction Noise Levels During Normal Daytime Working Hour (0700-1900 on weekdays), dB(A)	EIAO-TM Noise Criteria, dB(A)
LK1	63 – 74	75
LK3	64 – 75	75

Evaluation of Residual Impacts

Construction Phase

3.51 With the adoption of quieter plant, cumulative construction noise levels at all NSRs would comply with the EIAO-TM noise criteria of 75dB(A). No adverse residual impact would be envisaged.

Construction Activities during Restricted Hours

3.52 Based on the preliminary construction programme, dredging works in the Sunny Bay would be carried out during evening time (1900-2300), and would be subject to statutory control under the GW-TM of the NCO. An indicative assessment was conducted to investigate the potential noise impact arising from the dredging works expected to be performed in restricted hours (i.e. during evening and night time periods) in accordance with the criteria and methodology stated in the GW-TM. The construction noise criterion of 65dB(A) in the evening time were adopted in the present assessment.

3.53 The construction plant inventory and their respective SWL proposed for the works to be carried out during evening time are provided in **Appendix 3.7**, and based on which the construction noise levels at the representative NSRs were predicted. The predicted construction noise levels are summarised in Table 3.5. Details of the calculation for the construction noise are provided in **Appendix 3.8**.

Table 3.5 Construction Noise Levels at Representative NSRs during Restricted Hours (Unmitigated)

NSR	Predicted Noise Levels, dB(A)	GW-TM Noise Limit for Evening (1900-2300), dB(A)
LK1	61	65
LK3	62	65

3.54 The assessment results showed that predicted construction noise levels at the representative NSRs during evening period would range from 61 to 62 dB(A). No adverse impact would be envisaged.

3.55 The construction of sections of Slip Road 5 and Slip Road 6 crossing NLH and MTRC Airport Express Line would be subject to unavoidable constraints as the works must be undertaken during night time (i.e. 2300-0700) in order to avoid causing interruption or disturbance to the road traffic as well as train service. According to the GW-TM, a CNP may be granted if the construction noise levels exceeds the acceptable noise levels provided that it can be demonstrated to the satisfaction of the Noise Control Authority that less public annoyance or inconvenience would be resulted if the works are undertaken during restricted hours than non-restricted hours. Notwithstanding this, Contractors are still recommended to adopt best practicable measures to minimise the construction noise impact on NSRs. Where feasible, quieter plant should be selected for use. Depending on the contemporary site conditions, temporary / movable noise barrier should be considered for use in order to block the line sight of NSRs and the noisy construction activities and hence to reduce the construction noise impact as far as practicable. It would be envisaged that a temporary / movable

noise barrier located close to the noise generating part of the PME such that the line of sight could be blocked by the barriers when viewed from the NSRs can produce 5 and 10 dB(A) noise reduction for mobile (e.g. mobile crane and backhoe) and stationary plant (e.g. generator and air compressor) respectively.

3.56 Despite any description made in this EIA study on construction noise aspects, there is no guarantee that a Construction Noise Permit (CNP) will be issued for the project construction. The Noise Control Authority will consider a well-justified CNP application, once filed, for construction works within restricted hours as guided by the relevant Technical memoranda issued under the Noise Control Ordinance. The Noise Control Authority will take into account of contemporary conditions/situations of adjoining land uses and any previous complaints against construction activities at the site before making his decision in granting a CNP. Nothing in this Environmental Report shall bind the Noise Control Authority in making his decision. If a CNP is to be issued, the Noise Control Authority shall include in it any condition he thinks fit. Failure to comply with any such conditions will lead to cancellation of the CNP and prosecution action under the NCO.

Environmental Monitoring and Audit

Construction Phase

3.57 An Environmental Monitoring and Audit (EM&A) programme is recommended to be established according the predicted occurrence of noisy activities. All the recommended mitigation measures should be incorporated into the EM&A programme for implementation during construction. Details of programme are provided in a stand-alone EM&A Manual.

Operational Phase

3.58 The noise assessment concluded that the Project would not incur insurmountable traffic noise impact on all NSRs, and no mitigation measure would be required. Hence, there would be no EM&A requirement for the operational phase of the Project.

Conclusion

Construction Phase

3.59 Noise arising from the construction activities of the project would have potential impact on the NSRs located in the vicinity of the work sites. Unmitigated cumulative construction noise levels at the representative NSRs were predicted, which were found to be in the range of 63 to 78 dB(A), exceeding the EIAO-TM daytime construction noise limit by about 3 dB(A). There would be approximately 8 dwellings exposed to construction noise levels above the EIAO-TM criteria of 75dB(A).

3.60 Mitigation measures would be considered necessary to reduce the noise levels to be within the EIAO-TM noise criterion. Mitigation measures recommended include good site practices and the use of quieter plant. With the recommended mitigation measures in place, the construction noise levels at all NSRs would be reduced to acceptable levels.

Operation Phase

3.61 Potential road traffic noise impact associated with the Project was assessed for the maximum traffic flows in 2023 for the normal and emergency scenarios. The modelling results indicated that the traffic noise levels ($L_{10\ (1\ hour)}$) predicted at all NSRs would be below the EIAO-TM noise limit of 70dB(A). Mitigation measure would be considered not necessary.