

Key Assessment Assumptions and Limitation of Assessment Methodologies

Assessment Methodologies	Assessment Assumptions	Limitations of Assessment Methodologies / Assumptions	Prior Agreements with EPD		Proposed Alternative Assessment Tools/ Assumptions (if applicable)
			EIA Study Brief Clause Reference	Relevant Document	
Air Quality Impact Construction Phase					
The air quality impact assessment for the Project follows Annex 4 and Annex 12 of the EIAO-TM. Dust emission will be the major air quality impact. Quantitative assessment was carried out by applying FDM model.	Based on current tentative construction programme, Year 2023 is identified as the assessment year for construction dust assessment. Both short-term and long-term impacts were assessed with conservative approach by assuming 100% active construction area for all work sites and all works sites being active concurrently. Subject to the construction work at night-time, construction working period of 12 hours a day was assumed. The prediction of dust emissions is based on the typical values and emission factors obtained from United States Environmental Protection Agency (USEPA) Compilation of Air Pollution Emission Factors, AP-42, 5th Edition. Heavy construction activities including reclamation (above water), land clearance, site formation, ground excavation, construction of associated facilities etc. E = 2.69 Mg/hecture/month of activities Wind erosion including surcharge activities E = 0.85 Mg/hecture/year Watering once per hour on exposed worksites is proposed to achieve dust removal efficiency of 91.7% in accordance with the "Control of Open Fugitive Dust Sources" (USEPA AP-42).	The construction programme is indicative and subject to contractors' actual operation. A conservative approach, assuming 100% active area at all work sites and all works sites being active concurrently, was adopted in the model run. The actual situation may be better than that of the model prediction.	-	Working Paper on Air Quality Assessment	N/A
Operational Phase					
The air quality impact assessment for the Project follows Annex 4 and Annex 12 of the EIAO-TM.	Vehicular emissions from open road was based on modeling results of EMFAC. The cumulative air quality impact due to vehicular emission was predicted by Caline4 model. PATH 2020 (with power plant emission updated to 2019).	A conservative approach, assuming vehicular emission for Year 2026 and airport emission for Year 2031, was adopted in the	Section 5(v) of Appendix B	Working Paper on Air Quality Assessment	N/A

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Vehicular emission impact was due to moving vehicles along internal roads within PDAs at TCE & TCW, Road P1 (Tung Chung - Tai Ho Section), NLH and other connecting roads; and idling vehicles from HKBCF Island.	vehicular emission updated to 2026, and airport emission updated to Year 2031) adopted as background air quality concentration.	model run. The actual situation may be better than that of the model prediction.			
Noise Impact Construction Phase (Construction Noise)					
The noise impact assessment for the Project follows Annex 5 and Annex 13 of the EIAO-TM. In accordance with the EIAO, the methodology outlined in the GW-TM was used for construction noise assessment.	Sound power level (SWL) of the Powered Mechanical Equipment (PME) was based in Table 3 of GW-TM and QPME system adopted by EPD. It is assumed that all PME items required for a particular construction activity will be located at the notional source position of the work areas. The assessment was based on the cumulative SWL of PME likely to be used in each work areas, taking into account the construction period in the vicinity of the receiver location. To predict the construction noise impacts, PME were divided into groups required for individual construction activity. The objective is to identify the worst case scenario representing those items of PME that will be in use concurrently at any given time. The sound pressure level of individual construction activity was calculated, depending on the number of PME and distance from receivers. The noise levels at NSRs were then predicted by the sum of SWLs of all concurrent construction activities with their respective distance correction. A positive 3dB(A) facade correction was added to the predicted noise levels in order to account for the facade effect	The prediction of construction noise impacts are based on GW-TM. The SWL of PME was based in GW-TM and QPME system. The actual situation may be better than that of the prediction. In carrying out the assessment, worst case assumptions have been assumed in order to provide conservative noise impact assessments such as locating all the PME at the notional source position.	Section 2.2.1(a), 2.2.1(c) and 2.3.1 of Appendix C	Working Paper on Noise Assessment Methodology	N/A

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	at each NSR On-time percentages of utilization rates for were reasonably assumed by Engineer.				
Operational Phase (Road Traffic Noise)					
The noise impact assessment for the Project follows Annex 5 and Annex 13 of the EIAO-TM. Traffic noise was predicted using the methodology provided in the UK Department of Transport calculation of Road Traffic Noise (CRTN) 1988. The assessment was based on projected peak hour flows for the worst year within 15 years after full operation for the proposed development.	Since the first population intake and ultimate occupation year of the Project will be in Year 2026 and 2038 respectively, the assessment year for road traffic noise has been taken as Year 2053 (which is the maximum traffic projection within 15 years after full operation for the proposed development). In addition, different phasings for Phase 1, Phase 1 to Phase 2, Phase 1 to Phase 3 and Phase 1 to Phase 4 will be conducted. The existing noise screening structures, existing mitigation measures and mitigation measures by other concurrent projects within the vicinity were taken into account in the assessment. In carrying out the assessment, realistic worst case assumptions have been made in order to provide a conservative assessment of noise impacts. For the assessment of road traffic noise impact, peak hourly traffic flows from the worst case traffic impact assessment were adopted.	Traffic noise levels were predicted based on free flow condition. Traffic congestion and hence reduced traffic speed were not taken into account in the noise model. Quantitative uncertainties in the assessment of impacts should be considered when drawing conclusions from the assessment.	Section 3.2.1(a), 3.2.1(c), 3.2.2(a), 3.3.1(b) and 3.4.2(c) of Appendix C	Working Paper on Noise Assessment Methodology	N/A
Operational Phase (Fixed Noise Sources)					
The noise impact assessment for the Project follows Annex 5 and Annex 13 of the EIAO-TM. The assessment was carried out based on the assumed location of the planned fixed noise sources and their associated maximum Sound	The assessment has been based on the best available information, which includes location of the planned fixed noise sources and their associated maximum SWLs.	Location of the planned fixed noise sources and their associated maximum SWLs may be varied in the detailed design stage. In addition, silencer and enclosure installation may be refined in detailed design.	Section 4.2.1(a), 4.2.1(c) and 4.3.1(a)(ii) of Appendix C	Working Paper on Noise Assessment Methodology	N/A

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Power Levels (SWLs) using standard acoustic principle for attenuation and predicted the fixed noise impacts at the representative NSRs to determine if relevant noise criteria could be met.					
Operational Phase (Aircraft Noise)					
The noise impact assessment for the Project follows Annex 5 and Annex 13 of the EIAO-TM. The assessment was carried out based on the NEF results from approved EIA report for 3RS (AEIAR-185/2014).	The NEF noise contours assessment at Year 2011 (interim phase), Year 2021 (interim phase), Year 2030 (worst operation mode) and Year 2032 (full operation mode) are made reference to approved 3RS EIA (AEIAR-185/2014).	The assessment was carried out based on the best available NEF contours from approved EIA report for 3RS (AEIAR-185/2014). The operation mode and thus the NEF contours may be subject to change in the future.	Section 5.1 and 5.2(a) of Appendix C	Working Paper on Noise Assessment Methodology	N/A
Operational Phase (Rail Noise)					
The noise impact assessment for the Project follows Annex 5 and Annex 13 of the EIAO-TM and it is predicted according to "Calculation of Railway Noise (1995)" (CRN) by the UK Department of Transport.	A list of correction factors from CRN (e.g. rail deterioration, train speed, deck reflection etc.) have been included in the assessment and the operation details near the proposed development are confirmed by MTR Corporation. The assessment assumption has been made reference to Railway EIA.	The rail noise source term has been based from the approved EIA report for Lantau and Airport Railway Environmental Report EIA-029/BC. According to the site measurement, the rail source term is lower than the source term as in the approved EIA report EIA-029/BC. In order to cater for a more conservative assessment, rail noise source term in EIA-029/BC has been adopted for assessment. The actual situation may be better than that of the model prediction.	Section 6.1, 6.2.1(a) and 6.2.1(c) of Appendix C	Working Paper on Noise Assessment Methodology	N/A

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Operational Phase (Helicopter Noise)					
The noise impact assessment for the Project follows Annex 5 and Annex 13 of the EIAO-TM.	Helicopter noise will be generated during flyover mode. Helicopter noise is considered as a 'point' source and will be evaluated based on standard acoustic principle of point source propagation. Corrections will be applied for the distance attenuation, façade, barrier or topographical effect where applicable.	The helicopter noise source term has been made reference from European Aviation Safety Agency Type-Certificate Data Sheet of Airbus Helicopter H175, which is the maximum limit level for Airbus Helicopter H175. The actual situation may be better than that of the prediction.	Section 7.1, 7.2.1(a), 7.2.2(a) and 7.3.1(a) of Appendix C	Working Paper on Noise Assessment Methodology	N/A
Operational Phase (Marine Traffic Noise)					
The construction of the Project would not require any marine works and hence construction vessels for marine works are not anticipated. Besides, there are neither existing nor planned marine routes within the 300m assessment area. Hence, marine traffic noise impacts are not anticipated during both construction and operational phases.	N/A	N/A	N/A	N/A	N/A
Water Quality Impact					
Construction Phase					
Assessment of water quality impact in construction phase refers the methodology in Annex 6 and Annex 14 of the EIAO-TM.	The types and quantities of water pollution to be generated from the Project are based on the Project design and / or engineering assessments.	-	Section 3 of Appendix D	N/A	N/A
The water quality impact					

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during the construction phase were identified. Mitigation measures are recommended for the identified source of water pollution to minimise the potential water quality impacts.					
Operational Phase					
Assessment of water quality impact in operational phase refers the methodology in Annex 6 and Annex 14 of the EIAO-TM.	The types and quantities of water pollution to be generated from the Project are based on the Project design and / or engineering assessments.	-	Section 3 of Appendix D	N/A	N/A
The water quality impact during the operational phase were identified. Mitigation measures are recommended for the identified source of water pollution to minimise the potential water quality impacts.					
Sewerage and Sewage Treatment Implications					
The sewerage and sewage treatment implications assessment for the Project follows Section 6.5 in Annex 6 and Annex 14 of the EIAO-TM. Guidelines for Estimating Sewage Flows for Sewerage Infrastructure Planning, Sewerage Manual Part 1 from DSD.	Estimation of sewage arising from the residential and non-residential discharges, with flow build-up, within the catchment up to an ultimate development year. 13,400m ³ /day of available capacity in SHWSTW as identified by the Government. 3-hours ADWF would be sufficient for emergency storage as the proposed pumping station would be manned and under 24-hour attendance.	-	Section 1 of Appendix E	Working Paper on Sewerage and Sewage Treatment Implications	N/A

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Waste Management Implication					
The waste assessment for the Project follows <ul style="list-style-type: none"> EIAO-TM Annex 7 and Annex 15 Waste Disposal Ordinance (Cap. 354); Waste Disposal (Chemical Waste) (General) Regulation (Cap. 354C); Land (Miscellaneous Provisions) Ordinance (Cap. 28); Public Health and Municipal Services Ordinance (Cap. 132) - Public Cleansing and Prevention of Nuisances Regulation; Dumping at Sea Ordinance (DASO) (Cap. 466); and Waste Disposal (Charges for Disposal of Construction Waste) Regulation (Cap. 354N). 	Waste generated in the construction phases are determined based on the design of the project and are advised by the engineer. Waste generated in the operational phase is determined based on population parameters and land use of the proposed project.	-	Appendix F	-	N/A
Land Contamination Impact					
The land contamination assessment for the Project follows <ul style="list-style-type: none"> Annex 19 of the 	Potential land contamination within SHD would be assessed and adequately remediated under the Railway EIA, if necessary, before commencement of any construction works.	-	Appendix H	Railway CAP prepared under EIA	N/A

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Technical Memorandum on Environmental Impact Assessment Process (EIAO-TM), Guidelines for Assessment of Impact On Sites of Cultural Heritage and Other Impacts (Section 3 - Potential Contaminated Land Issues), EPD, 1997; <ul style="list-style-type: none"> Guidance Manual for Use of Risk-Based Remediation Goals (RBRGs) for Contaminated Land Management, EPD, 2007; Guidance Notes for Contaminated Land Assessment and Remediation, EPD, 2007; Practice Guide for Investigation and Remediation of Contaminated Land, EPD, 2011 					
Ecological Impact					
The ecological impact assessment follows Annexes 8 and 16 of the EIAO-TM.		Assessment of ecological baseline is based on ecological surveys and literature review. Surveys were taken at representative locations and transect routes in and near the vicinity of the assessment area. Baseline descriptions considered	-	-	N/A

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		sufficiently representative to allow subsequent assessments to be made.			
Fisheries Impact					
The fisheries impact assessment follows Annexes 9 and 17 of the EIAO-TM.	-	Assessment of fisheries baseline is based on literature review. Baseline descriptions are considered sufficiently representative to allow subsequent assessments to be made.	-	-	N/A
Landscape and Visual Impact					
The landscape and visual impact assessment follows Annexes 10 and 18 of the EIAO-TM and the EIAO Guidance Note No.8/2010.	<p>The assessment is based on the latest development scheme with the relevant OZPs and the best available information.</p> <p>The maximum building heights are assumed from about +86mPD to +106mPD in the proposed development scheme.</p> <p>The tree survey findings have taken reference to the Broad Brush Tree Survey section in the EIA report 'Railway EIA'.</p> <p>An additional broad-brush tree survey has been carried out within the extent of proposed utilities, western access via Tai Ho Interchange, SPS and eastern access on SSK Drive to review the numbers of existing trees or tree groups, dominant species, DBH, health condition and any plant species of conservation interest (including Old and Valuable Trees (OVTs), Potentially Registrable OVT (POVT) and rare/protected species).</p> <p>The future management/ maintenance of the newly planted trees will be handed over to the project proponent/ relevant government departments in accordance with LAO PN</p>	Assessment of sensitivity of receivers and the magnitude of changes of project works are inherently subjective. No detailed data exists for future planned projects other than described in the report. Changes to these may affect the evaluated impacts of the Project.	Section 3.4.13	N/A	N/A

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	No.7/2007 and DEVB TCW No.7/2015, as appropriate.				
Hazard to Life					
The risk assessment for the Project follows Annex 4 of the EIAO-TM. Siu Ho Wan Water Treatment Works (SHWWTW) and Sham Shui Kok (SSK) Chlorine Transhipment Dock will be the potential hazardous sources. Quantitative risk assessment was carried out on SHWWTW.	<p>The hazard scenarios, operational parameters and mitigation measure implemented in SHWWTW are based on Siu Ho Wan and Silver Mine Bay Water Treatment Works (AEIAR-158/2011) and Organic Waste Treatment Facilities Phase 1 (AEIAR-149/2010).</p> <p>Latest meteorological data from Siu Ho Wan Anemometer Station of the Hong Kong Observatory has been collected and adopted in the consequence model.</p> <p>The off-site population data are based on desktop review while on-site population data are based on the information from the project proponent.</p> <p>The methodology used in the QRA is consistent with the approved Organic Waste Treatment Facilities Phase 1 (OWTF-P1) Environmental Impact Assessment (EIA) Report (AEIAR-149/2010)</p>	Generic frequencies are based on literature review. They have been reviewed and updated, wherever necessary.	Section 3.4.9(a), and Appendix G	-	N/A