

### 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)		
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<b>Air Quality Impact</b>							
<b>Construction Phase</b>							
<p>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 AERMOD model.</p>	<p>Based on the current tentative construction programme, Year 2023 – 2027 are taken as the assessment year for construction dust assessment. Both short-term and long-term impacts were assessed. Subject to the construction work at night-time, construction working period of 12 hours a day was assumed, including weekends and public holidays.</p> <p>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, 5<sup>th</sup> Edition.</p> <p>Construction dust assessment included material handling and stockpile area at barging facility. Construction working period of 12 hours a day was assumed, including weekends and public holidays.</p> <table border="1" data-bbox="510 1102 1041 1380"> <tr> <td>Heavy construction activities including reclamation (above water), land clearance, site formation, ground excavation, construction of</td> <td>E = 2.69 Mg/hectare/month of activities</td> </tr> </table>	Heavy construction activities including reclamation (above water), land clearance, site formation, ground excavation, construction of	E = 2.69 Mg/hectare/month of activities	<p>The construction programme is tentative and subject to contractor’s design and site circumstances.</p>	<p>Sections 3, 4 and 5 of Appendix B</p>	-	-
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	associated facilities etc.					
	Material handling at barging facility and stockpile area	$E = k(0.0016) \frac{\left(\frac{U}{2.2}\right)^{1.3}}{\left(\frac{M}{2}\right)^{1.4}}$ (kg/megagram)  k = Particle size multiplier, k = 0.74 as defined according to Table 2 of USEPA AP42 S13.2.4 U = Average wind speed M = Material moisture content  $E_{(RSP)} = E_{(TSP)} \times 0.473$ kg/megagram  $E_{(FSP)} = E_{(TSP)} \times 0.072$ kg/megagram				
	Wind erosion including entire stockpile area	E = 0.85 Mg/ hectare/ 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 layout and intake years of the TCNTE development are based on the latest information					

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	provided by CEDD and PlanD.				
<b>Noise Impact</b>					
<b>Construction Phase</b>					
The airborne 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.	SWL of the PME was based on Table 3 of GW-TM, the QPME system adopted by EPD and “SWL of other commonly used PME” on EPD’s website.	<p>The construction programme is tentative and subject to contractor’s design and site circumstances.</p> <p>The prediction of construction noise impacts is based on GW-TM. The SWL of PME was based on GW-TM and QPME system. The actual situation may be better than that of the prediction.</p>	Sections 2.1.1, 2.3 – 2.5 of Appendix C	-	-
	It is assumed that all PME items required for a particular construction activity will be located at the notional source position of the workfronts. 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 SPL 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.	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.			

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	<p>A positive 3dB(A) façade correction was added to the predicted noise levels in order to account for the façade effect at each receiver.</p> <p>On-time percentages of utilization rates for PME and the plant inventory were reasonably assumed by Engineer.</p> <p>The layout and intake years of the TCNTE development are based on the latest information provided by CEDD and PlanD.</p>				
<p>The groundborne construction noise impact assessment for the Project follows Annex 5 and Annex 13 of the EIAO-TM and IND-TM under NCO. The methodology of assessment is based on the U.S. Department of Transportation “High-Speed Ground Transportation Noise and Vibration Impact Assessment”, 2012 and “Transit Noise and Vibration Impact Assessment Manual”, 2018</p>	<p>A list of correction factors (e.g. coupling loss, conversion factor from vibration to noise levels etc.) have been included in the assessment.</p> <p>The in-situ measurements for TBM during the bored tunnelling of Kwai Tsing Tunnel of the West Rail project are adopted.</p>	<p>In carrying out the assessment, worst case assumptions have been assumed in order to provide conservative noise impact assessments such as using lower coupling loss across floors.</p>	<p>Sections 2.1.2, 2.3 – 2.5 of Appendix C</p>		-
<b>Operational Phase</b>					
<p>The rail noise impact assessment for the Project follows Annex 5 and Annex 13 of the TM-EIAO. The methodology of assessment is based on “Calculation of Railway Noise (CRN) (1995)” by the UK Department of Transport.</p>	<p>A list of correction factors from CRN (e.g. rail deterioration, train speed, deck reflection etc.) have been included in the assessment and the operational details are confirmed with the operator.</p> <p>The rail noise measurement near Ta Pang Po was conducted. Maximum corrected measured SEL (@25m, 135km/h, 1 car) of 81.9 dB(A) is adopted.</p> <p>The layout and intake years of the TCNTE development are based on the latest information</p>	<p>In carrying out the assessment, worst case assumptions have been assumed in order to provide conservative noise impact assessments such as using the maximum measured SEL.</p>	<p>Section 3 of the Appendix C</p>		-

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	provided by CEDD and PlanD.				
The groundborne rail noise impact assessment for the Project follows Annex 5 and Annex 13 of the EIAO-TM and IND-TM under NCO. The methodology of assessment is based on the U.S. Department of Transportation “High-Speed Ground Transportation Noise and Vibration Impact Assessment”, 2012 and “Transit Noise and Vibration Impact Assessment Manual”, 2018	A list of correction factors (e.g. building conversion factor, conversion factor from vibration to noise levels etc.) have been included in the assessment and the operational details are confirmed with MTR Corporation.	-	Section 3 of the Appendix C		-
The fixed noise source impact assessment for the Project follows Annex 5 and Annex 13 of the EIAO-TM and IND-TM under NCO. The assessment was carried out based on the assumed location of planned fixed noise sources and their associated maximum SWLs using standard acoustic principle for attenuation and predicted the fixed noise impacts with all other fixed noise sources in the vicinity at the representative NSRs to determine if relevant noise criteria could be met.	The assessment has been based on the best available information, which includes the location of existing and planned fixed noise sources and their associated maximum SWLs.	Location of the planned fixed noise sources and their associated maximum SWLs may vary and is subject to Contractor’s choice of equipment and the noise climate of future environment	Section 4 of the Appendix C	-	-
<b>Water Quality Impact</b>					
<b>Construction Phase</b>					
Assessment of water quality impact in construction phase refers to the methodology in Annex 6 and Annex 14 of the EIAO-TM.	The types of water pollution to be generated from the Project are based on the latest construction methodology.	-	Appendix D	-	-
The water quality impact during the					

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construction phase were identified. Mitigation measures are recommended for the identified source of water pollution to minimise the potential water quality impacts.					
<b>Operational Phase</b>					
Assessment of water quality impact in operational phase refers the methodology in Annex 6 and Annex 14 of the EIAO-TM.  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.	Assumptions made in the assessment are based on the latest design.	-	Appendix D	-	-
<b>Waste Management Implication</b>					
The assessment of waste management implications from handling, storage, collection, transportation and disposal of solid waste materials generated by the Project follows: <ul style="list-style-type: none"> <li>EIAO-TM Annex 7 and Annex 15;</li> <li>WDO (Cap 354) and subsidiary regulations;</li> <li>Land (Miscellaneous Provisions) Ordinance (Cap. 28);</li> <li>Public Health and Municipal Services Ordinance (Cap. 132) – Public Cleansing and</li> </ul>	Waste generated in the construction phase are determined based on the latest construction methodology.	-	Appendix E	Sediment Sampling and Testing Plan  Preliminary Sediment Quality Report	-

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Prevention of Nuisances Regulation; <ul style="list-style-type: none"> <li>• DASO (Cap. 466);</li> <li>• PNAP ADV-21;</li> <li>• WBTC No. 12/2000 Fill Management; and</li> <li>• SSTP</li> </ul> Site investigation has been conducted for the estimation of sediment quality and quantity.					
<b>Land Contamination Impact</b>					
The land contamination assessment for the Project follows <ul style="list-style-type: none"> <li>• EIAO-TM Annex 19, Guidelines for Assessment of Impact On Sites of Cultural Heritage and Other Impacts (Section 3 : Potential Contaminated Land Issues), EPD, 1997;</li> <li>• Guidance Manual for Use of Risk-Based Remediation Goals (RBRGs) for Contaminated Land Management, EPD, 2007;</li> <li>• Guidance Notes for Contaminated Land Assessment and Remediation, EPD, 2007;</li> <li>• Practice Guide for Investigation and Remediation of Contaminated Land, EPD, 2011</li> <li>• Land Contamination Review Report</li> </ul>	Assumptions made in the assessment are based on latest boundary of the Project and the works of the Project, as well as current and historical land uses.	-	Appendix F	-	-

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Site re-appraisal would be required to assess the latest site situation prior to the commencement of the construction including excavation works, if any, beyond the works sites and works areas due to minor works.					
<b>Ecological Impact</b>					
The ecological impact assessment follows Annex 8 and Annex 16 of the EIAO-TM.	Assumptions made in the assessment are based on the latest design.	Ecological baseline is established based on literature review as well as habitat, flora and fauna surveys. Surveys were taken in representative locations and transect routes inside and in the vicinity of the Project as well as the assessment area. Baseline descriptions are considered sufficiently representative to allow subsequent assessments to be made.	Section 3.4.9 and Appendix G	Ecological and fisheries survey proposal	-
<b>Fisheries Impact</b>					
The fisheries impact assessment follows Annex 9 and Annex 17 of the TM-EIAO.	Assumptions made in the assessment are based on the latest layout.	Fisheries baseline is established based on literature review. Baseline descriptions are considered sufficiently representative to allow subsequent assessments to be made.	Section 3.4.10 and Appendix H		-
<b>Landscape and Visual Impact</b>					
The landscape and visual impact assessment follows Annexes 10 and 18 of the EIAO-TM and the EIAO Guidance Note No.8/2010.	Assessment assumptions are listed in the methodology stated in <b>Section 10</b> Landscape and Visual Impact Assessment of this EIA report.  Selected viewpoints for the preparation of photomontages to demonstrate the landscape and visual changes as a result of the Project are located at public accessible area and agreed with EPD and PlanD Urban Design and Landscape	Assessment of landscape and visual baseline is based on literature review, government survey maps and aerial photographs and site visits. There is limitation on review of the baseline conditions in private properties and inaccessible areas.  Photographic record of LRs, LCAs and VSRs are taken at the accessible location	Section 3.4.11 and Appendix I		-



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	Unit.	<p>to the nearest and representative of the above.</p> <p>A board tree survey is undertaken for this EIA according to the Study Brief. It is sufficiently representing the potential tree impact as a result of the Project and impact on landscape resources. Detailed tree preservation and removal application is required for government approval.</p> <p>Assessment on VSRs of planned development and potential cumulative impact with concurrent project is based on information available through public channels. Impact significance will change following the development of these planned or on-going projects.</p>			
<b>Cultural Heritage Impact</b>					
<p>The cultural heritage impact assessment follows Annex 10 and Annex 19 of the EIAO-TM.</p> <p>Terrestrial Archaeological Investigation including archaeological test pits and auger holes has been conducted.</p>	Assumptions made in the assessment are based on the latest design.	Limitation to carry out archaeological investigation works at the private land to the north of the TCW Station	Section 3.4.12 and Appendix J	Archaeological Action Plan agreed with AMO	-
<b>Hazard to Life</b>					
The hazard to life assessment follows Section 3.4.13 in the EIA Study Brief.	Assumptions made in the assessment are based on the latest design. No overnight storage of explosive on site is assumed.		Section 3.4.13		