

**Appendix 15.1 – Key Assessment Assumptions and Limitations of Assessment Methodologies**

Assessment Methodology	Key Assessment Assumptions	Limitations of Assessment Methodologies / Assumptions	Prior Agreements with EPD/Other Authorities		Proposed Alternative Assessment Tools / Assumptions (if applicable)
			EIA Study Brief Clause Reference	Relevant Documentation	
<b>General</b>					
-	<ul style="list-style-type: none"> <li>All recognised villages (i.e. total of 20 recognised villages) within the Project area would be retained (i.e. no development)</li> </ul>	N/A	N/A	N/A	N/A
-	<ul style="list-style-type: none"> <li>There will be no development in “Green Belt” (“GB”) or “Village Type Development” (“V”) zones of the Revised RODP</li> </ul>	N/A	N/A	N/A	N/A
<b>Air Quality Impact</b>					
<b>Construction Phase</b>					
The air quality impact assessment follows: Annex 4 and Annex 12 of the TM-EIAO. Dust emission will be the major air quality impact. Quantitative assessment was carried out by applying AERMOD model.	<ul style="list-style-type: none"> <li>Based on current tentative construction programme, two assessment scenarios, Year 2026-2030 and Year 2031-2036 are identified as the worst-case 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, construction working period of 30 days a month and 12 hours a day was assumed.</li> <li>The prediction of dust emissions is based on the typical values and emission factors obtained from United</li> </ul>	The construction programme is indicative and subject to contractors’ actual operation. A conservative approach was adopted in the model run. The actual situation may be better than that of the model prediction.	-	-	N/A

Assessment Methodology	Key Assessment Assumptions	Limitations of Assessment Methodologies / Assumptions	Prior Agreements with EPD/Other Authorities		Proposed Alternative Assessment Tools / Assumptions (if applicable)				
			EIA Study Brief Clause Reference	Relevant Documentation					
	<p>States Environmental Protection Agency (USEPA) Compilation of Air Pollution Emission Factors, AP-42, 5th Edition.</p> <table border="1"> <tr> <td>Heavy construction activities including reclamation (above water), land clearance, site formation, ground excavation, construction of associated facilities etc.</td> <td>E = 2.69 Mg/hecture/month of activities</td> </tr> <tr> <td>Wind erosion including surcharge activities</td> <td>E = 0.85 Mg/hecture/year</td> </tr> </table> <ul style="list-style-type: none"> <li>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).</li> </ul>	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				
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								
<b>Operational Phase</b>									
The air quality impact assessment follows: Annex 4 and Annex 12 of the TM-EIAO and requirement from the EIA	<p><u>Emission from Open Road Traffic</u></p> <ul style="list-style-type: none"> <li>Vehicular emissions from open road was based on modeling results of EMFAC and the air quality impact is predicted using</li> </ul>		-	-	N/A				

Assessment Methodology	Key Assessment Assumptions	Limitations of Assessment Methodologies / Assumptions	Prior Agreements with EPD/Other Authorities		Proposed Alternative Assessment Tools / Assumptions (if applicable)
			EIA Study Brief Clause Reference	Relevant Documentation	
Study Brief (ESB-291/2015)	<p>CALINE4 model</p> <p><u>Portal Emissions &amp; Chimney Emissions &amp; Port Backup and Logistic Facilities</u></p> <ul style="list-style-type: none"> <li>The predicted air quality impact is predicted using AERMOD model</li> </ul> <p><u>Cumulative Air Quality Impact</u></p> <ul style="list-style-type: none"> <li>The PATH-2016 model results are added to the sum of the CALINE4 and AERMOD model results sequentially on an hour-to-hour basis to derive the short-term and long-term cumulative impacts at the ASRs. The maximum hourly, daily and annual average results have been then calculated in accordance with the Title 40, Code of Federal Regulations, US Environmental Protection Agency (USEPA 40 CFR) Part 51 "Revision to the Guideline on Air Quality Models, Version 2005". The pollutant concentration predicted at an ASR amongst the 8760 hours (a year) have been ranked/averaged to assess the cumulative impact. The number of exceedances for each ASR have been counted and compared with the acceptance values in the new AQO criteria.</li> </ul>				
<b>Operational Phase (Odour Impact)</b>					
The air quality impact assessment follows: Annex 4	<ul style="list-style-type: none"> <li>The odour emission rates for the chicken farm is based on the data of the odour</li> </ul>		-	-	N/A

Assessment Methodology	Key Assessment Assumptions	Limitations of Assessment Methodologies / Assumptions	Prior Agreements with EPD/Other Authorities		Proposed Alternative Assessment Tools / Assumptions (if applicable)
			EIA Study Brief Clause Reference	Relevant Documentation	
and Annex 12 of the TM-EIAO and requirement from the EIA Study Brief (ESB-291/2015)	survey conducted in August 2015. <ul style="list-style-type: none"> <li>The design and odour emission rates of planned STW is made reference to the emission data of Shek Wu Hui STW adopted in the North East New Territories New Development Areas EIA Report.</li> <li>The design and odour emission rates of planned RTS is made reference to the average measured SOER at tipping face (for municipal solid waste) of NENT Landfill extracted from the approved NENT Landfill EXT EIA Report.</li> <li>The potential odour impact is predicted using AERMOD model</li> </ul>				
<b>Noise Impact</b>					
<b>Construction Phase</b>					
The noise impact assessment for the project follows Annex 5 and Annex 13 of the EIAO-TM and requirement set out under Clause 3.4.5 of the EIA Study Brief (ESD-291/2015). In accordance with the EIAO, the methodology outlined in the TM-GW was used for construction noise assessment.	Sound power level (SWL) of the Powered Mechanical Equipment (PME) was based in Table 3 of TM-GW and QPME system adopted by EPD.	The prediction of construction noise impacts are based on TM-GW. The SWL of PME was based in TM-GW and QPME system.	N/A	N/A	N/A
	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	In carrying out the assessment, worst case assumptions have been assumed in order to provide conservative noise impact assessments such as	-	-	-

Assessment Methodology	Key Assessment Assumptions	Limitations of Assessment Methodologies / Assumptions	Prior Agreements with EPD/Other Authorities		Proposed Alternative Assessment Tools / Assumptions (if applicable)
			EIA Study Brief Clause Reference	Relevant Documentation	
	<p>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 noise sensitive receivers (NSRs) were then predicted by the sum of SWLs of all concurrent construction activities with their respective distance correction.</p> <p>A positive 3dB(A) facade correction was added to the predicted noise levels in order to account for the facade effect at each NSR.</p> <p>On-time percentages of utilisation rates of the PMEs were reasonably assumed by Engineer.</p>	locating all the items of PME at the notional source			
<b>Operational Phase (Road Traffic Noise)</b>					
The noise impact assessment for the project follows Annex 5 and Annex 13 of the EIAO-TM and requirement set out under Clause 3.4.5 of the EIA Study Brief (ESD-291/2015)	Road traffic noise was predicted based on the traffic flows, following strictly the procedures stipulated in the "Calculation of Road Traffic Noise (CRTN)" (1988) published by Department of Transport, UK. Road traffic noise was presented in terms of noise levels exceeded for 10% of the one-hour period	The planned NSRs might subject to change and thus uncertainty due to reflection or actual view angle would not be reflected in the predicted noise levels	N/A	N/A	N/A

Assessment Methodology	Key Assessment Assumptions	Limitations of Assessment Methodologies / Assumptions	Prior Agreements with EPD/Other Authorities		Proposed Alternative Assessment Tools / Assumptions (if applicable)
			EIA Study Brief Clause Reference	Relevant Documentation	
	having the peak traffic flow (i.e. L10, 1hour, dB(A)).  The assessment year of unmitigated and mitigated scenarios was determined on the basis of peak hour traffic flow projected within a period of 15 years following commencement of operation of the Project.				
<b>Operational Phase (Fixed Noise Sources)</b>					
The noise impact assessment for the project follows Annex 5 and Annex 13 of the EIAO-TM and requirement set out under Clause 3.4.5 of the EIA Study Brief (ESD-291/2015)	The fixed plant noise assessment was been carried out by determining the maximum allowable sound power level based on backward calculation of separation distance between the noise source and the nearest NSR regardless on the percentage usage.	For determining the distance correction factors, the horizontal distances between the noise source positions and the NSRs were used for representing the worst level of the representative NSRs. The distance between NSRs and the noise sources (slant distance) could be larger and the maximum allowable sound power level could be lower than the prediction.	N/A	N/A	N/A
<b>Operational Phase (Rail Noise)</b>					
The noise impact assessment for the project follows Annex 5 and Annex 13 of the EIAO-TM and requirement set out under	Rail noise was predicted based on the reference / measured noise source term and rail information provided by MTRC, following strictly the procedures stipulated in the “The	The planned NSRs might subject to change and thus uncertainty due to reflection or actual view angle would	N/A	N/A	N/A

Assessment Methodology	Key Assessment Assumptions	Limitations of Assessment Methodologies / Assumptions	Prior Agreements with EPD/Other Authorities		Proposed Alternative Assessment Tools / Assumptions (if applicable)
			EIA Study Brief Clause Reference	Relevant Documentation	
Clause 3.4.5 of the EIA Study Brief (ESD-291/2015)	Calculation of Railway Noise (CRN)" published by Department of Transport in 1995	not be reflected in the predicted noise levels			
<b>Operational Phase (Helicopter Noise)</b>					
The noise impact assessment for the project follows Annex 5 and Annex 13 of the EIAO-TM and requirement set out under Clause 3.4.5 of the EIA Study Brief (ESD-291/2015)	Helicopter noise was predicted based on the reference noise source term and calculated the maximum instantaneous sound pressure level at the noise sensitive receiver.	For determining the maximum instantaneous sound pressure level, the horizontal distances between the noise source positions and the NSRs were used for representing the worst level of the representative NSRs. The distance between NSRs and the noise sources (slant distance) could be changed. Thus the predicted maximum instantaneous sound pressure level might subject to be changed due to the change of separation distance between the NSRs and the noise sources.	N/A	N/A	N/A
<b>Water Quality Impact</b>					
The water quality impact assessment followed: Annexes 6 and 14 of the EIAO-TM The wastewater / water	The types and quantities of water pollution to be generated from the Project are based on the Project design and / or engineering assessments.	N/A	N/A	N/A	N/A

Assessment Methodology	Key Assessment Assumptions	Limitations of Assessment Methodologies / Assumptions	Prior Agreements with EPD/Other Authorities		Proposed Alternative Assessment Tools / Assumptions (if applicable)
			EIA Study Brief Clause Reference	Relevant Documentation	
pollution to be generated during both construction and operational phase were identified. Where possible, the amount of water pollution generated during both construction and operational phase were also quantified. Mitigation measures are recommended for the identified source of water pollution to minimise the potential water quality impacts.					
<b>Sewage and Sewerage Treatment Implication</b>					
The sewerage and sewage Treatment assessment followed: Section 6.5 in Annex 14 of the EIAO-TM, Guidelines for Estimating Sewage Flows for Sewage Infrastructure Planning, Sewerage Manual Part 1 from DSD	<ul style="list-style-type: none"> <li>Sewage flow estimation are based upon EPD Report No. EPD/TP 1/05 Guidelines for Estimating Sewage Flows (GESF).</li> <li>Unit Flow Factors – the factor for different land uses in accordance with EPD's GESF.</li> </ul>	<ul style="list-style-type: none"> <li>Actual sewage flows may be marginally different than estimated sewage flows due to lack of calibration of unit flow factors.</li> </ul>	N/A	N/A	N/A
<b>Waste Management Implication</b>					
The waste management assessment followed: <ul style="list-style-type: none"> <li>Annex 7 and Annex 15 of the EIAO-TM</li> </ul>	<ul style="list-style-type: none"> <li>The waste quantities to be generated from the Project were estimated based on the engineering assessment.</li> </ul>	N/A	3.4.8	N/A	N/A
<b>Land Contamination</b>					



Assessment Methodology	Key Assessment Assumptions	Limitations of Assessment Methodologies / Assumptions	Prior Agreements with EPD/Other Authorities		Proposed Alternative Assessment Tools / Assumptions (if applicable)
			EIA Study Brief Clause Reference	Relevant Documentation	
<p>The land contamination assessment followed:</p> <ul style="list-style-type: none"> <li>Annex 19 of the EIAO-TM</li> <li>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> </ul> <p>The methodology includes desktop study, site survey, formulation of soil and groundwater sampling and</p>	N/A	<ul style="list-style-type: none"> <li>As there will not be any development and/or redevelopment works in the existing recognised villages within the Project area, the land contamination assessment will exclude these recognised village areas.</li> <li>The identified potentially contaminated sites are still in operation and the majority of these sites were inaccessible for site walkover at the time of reporting to assess the site conditions. Helicopter reconnaissance with peripheral observations was carried out to identify the land use of the inaccessible sites during site visits. Furthermore, permission could not</li> </ul>	3.4.9.1	N/A	N/A

Assessment Methodology	Key Assessment Assumptions	Limitations of Assessment Methodologies / Assumptions	Prior Agreements with EPD/Other Authorities		Proposed Alternative Assessment Tools / Assumptions (if applicable)
			EIA Study Brief Clause Reference	Relevant Documentation	
testing strategy and recommendation of further works.		be obtained from the site operators to carry out site investigation (SI) works in the sites which were accessible for site walkover.			
<b>Ecological Impact</b>					
The ecological impact assessment followed: <ul style="list-style-type: none"> <li>Annexes 8 and 16 of the EIAO-TM for the criteria, general approach and methodology for assessment of ecological impacts</li> <li>EIAO Guidance Note No. 3/2010, No. 6/2010, No. 7/2010 and No. 10/2010 for general guidelines for conducting ecological baseline surveys and environmental mitigation measure recommendations</li> </ul>	N/A	<ul style="list-style-type: none"> <li>Some parts of the assessment area (e.g. privately owned land, active construction sites) and natural habitats in the west of the assessment area (e.g. woodland, shrubland, grassland and uphill natural watercourse) were inaccessible during the surveys.</li> </ul> In order to survey the inaccessible areas, flora and fauna species in these habitats were recorded with the use of binoculars where possible.	N/A	N/A	N/A

Assessment Methodology	Key Assessment Assumptions	Limitations of Assessment Methodologies / Assumptions	Prior Agreements with EPD/Other Authorities		Proposed Alternative Assessment Tools / Assumptions (if applicable)
			EIA Study Brief Clause Reference	Relevant Documentation	
		<ul style="list-style-type: none"> <li>Intertidal survey location P4a was not accessible during the wet season in January 2012, intertidal survey was conducted at a new survey location P4b.</li> </ul>			
<b>Fisheries Impact</b>					
The fisheries impact assessment followed: Annexes 9 and 17 of the TM-EIAO	N/A	<ul style="list-style-type: none"> <li>A number of ponds were inaccessible during the surveys (especially those outside of the Project Boundary along the coast of Deep Bay). The statuses of the ponds were assessed with the aid of recent aerial photos, as well as the use of binoculars for observation of the ponds from afar.</li> </ul>	N/A	N/A	N/A
<b>Landscape and Visual Impact</b>					
The landscape and visual impact assessment followed: Annexes 10 and 18 of the	<ul style="list-style-type: none"> <li>The assessment is based on the Revised RODP, footprints and preliminary design scheme with the latest relevant OZPs and</li> </ul>	<ul style="list-style-type: none"> <li>Assessment of sensitivity of receivers and the magnitude of</li> </ul>	-	Viewpoints agreed by PlanD in emails dated:	N/A

Assessment Methodology	Key Assessment Assumptions	Limitations of Assessment Methodologies / Assumptions	Prior Agreements with EPD/Other Authorities		Proposed Alternative Assessment Tools / Assumptions (if applicable)
			EIA Study Brief Clause Reference	Relevant Documentation	
EIAO-TM and the EIAO Guidance Note No.8/2010	<p>the best available information.</p> <ul style="list-style-type: none"> <li>Building heights are assumed to be the maximum permissible height in each site as stipulated in the Revised RODP parameters.</li> <li>The Broad Brush Tree Survey is in aid of the aerial photos and the Ecology Impact Assessment of the Project, and based on the topographical survey conducted prior to the tree survey, and site visit to accessible areas of the Project.</li> <li>The future management / maintenance of the proposed new trees will be handed over to the project proposer in accordance to Development Bureau Technical Circular (Works) (DEVB TCW) No. 10/2013 – Tree Preservation</li> </ul>	<p>changes of Project works are inherently subjective. No detailed data exists other than described in the report.</p> <ul style="list-style-type: none"> <li>Not all sites are accessible to capture baseline photographs for the visual impact assessment. This is mainly due to access not being granted to private property and higher levels of buildings, meaning descriptions of views from these locations have been extrapolated from visiting the surrounding areas and from aids such as illustrations, to help predict impacts.</li> <li>Not all the survey sites are accessible to capture tree survey information. For those inaccessible areas, e.g. private lands and fenced off orchards or</li> </ul>		2016.02.11 & 2016.01.29	

Assessment Methodology	Key Assessment Assumptions	Limitations of Assessment Methodologies / Assumptions	Prior Agreements with EPD/Other Authorities		Proposed Alternative Assessment Tools / Assumptions (if applicable)
			EIA Study Brief Clause Reference	Relevant Documentation	
		<p>farmland, no site visits were conducted in these village areas and in its immediate vicinity as the tree surveyors were precluded from access to these areas by local villagers/parties. For the inaccessible areas without topographical survey data, the Broad Brush Tree Survey information is described based on the review of aerial photos and the Ecology Impact Assessment of the Project.</p> <ul style="list-style-type: none"> <li>Individual tree impact as a result of the proposed developments is subject to further review at detailed design phase of the project in accordance with Development Bureau Technical</li> </ul>			

Assessment Methodology	Key Assessment Assumptions	Limitations of Assessment Methodologies / Assumptions	Prior Agreements with EPD/Other Authorities		Proposed Alternative Assessment Tools / Assumptions (if applicable)
			EIA Study Brief Clause Reference	Relevant Documentation	
		Circular (Works) (DEVB TCW) No. 10/2013 – Tree Preservation.			
<b>Impact on Cultural Heritage (Built Heritage)</b>					
The built heritage assessment followed: Annexes 10 and 19 of the TM-EIAO	The assessment is based on the conditions of built heritage, which covers the whole of the Project area, including the recognised villages within the Project area.	Nil.			
<b>Impact on Cultural Heritage (Archaeology)</b>					
The archaeology assessment followed: Annexes 10 and 19 of the TM-EIAO	Desktop review considered the whole of the assessment area, while field evaluation is based on all accessible areas that have not been disturbed by modern development in recent years known from desktop review.	Access issue has limited the areas that can be field evaluated. Inaccessible areas need to be surveyed after land resumption in the future, subjected to development nature.			