Appendix 14.1 – Key Assessment Assumptions, Limitations of Assessment Methodologies and Prior Agreements with the Director

Assessment Methodology	Key Assessment Assumptions	Limitations of Assessment Methodologies / Assumptions	Prior Agreements with EPD / Other Authorities	
			EIA Study Brief (ESB-323/2019) Clause Reference	Relevant Documentation
Air Quality Impact				
Construction Phase				
The air quality impact assessment follows: Annexes 4 and 12 of the EIAO-TM and requirement from the EIA Study Brief (ESB-323/2019). Qualitative assessment was carried out for air quality impact during construction phase.	<u>Emission from Construction Activities</u> • The construction works areas were assumed to be working in full capacity occupying the whole active works areas and to be conducting simultaneously during the construction period. <u>Background Concentration</u> • PATH background concentration at year 2020 was adopted.	• The actual construction works would be of small-scale and confined within small work area, and that construction activities will not take place at the entire construction work site at the same time, but to be undertaken at multiple work fronts at different construction periods. • The construction activities at different work fronts would not take place concurrently.	N/A	N/A
Operational Phase				
The air quality impact assessment follows: Annexes 4 and 12 of the EIAO-TM and requirement from the EIA Study Brief (ESB-323/2019). Quantitative assessment was carried out by applying EMFAC-HK, AERMOD and CALINE4 model.	<u>Emission from Open Road Traffic</u> • Traffic flow and vehicle compositions in 24-hour profile reported in the Traffic Impact Assessment was adopted • Vehicular emissions from open road was based on modelling results of EMFAC-HK v4.2 and the air quality impact was predicted using CALINE4 model. <u>Emission from Portals and, Ventilation Building</u> • The split ratio of vehicular exhaust between portal to ventilation building refer to the latest engineering design. <u>Start Emission</u> • Start emission was estimated in broad-brush approach, i.e. all vehicle classes to have potential trip start on local road. • Start emission factor were extracted from EMFAC-HK v4.2. • Highest start emission factor was adopted for a vehicle class, irrelevant to its soak time. <u>Background Concentration</u> • PATH background concentration at year 2020 was adopted.	• A 24-hour profile of traffic data was assumed for the whole year. No daily variation was considered. • Start emission would be overestimated on local roads but underestimated in the area near to a bus terminal. • Background concentration at Year 2020 may overestimate air quality in the future Year 2034.	N/A	N/A
Noise Impact				
Construction Phase				
The noise impact assessment follows: Annexes 5 and 13 of the EIAO-TM and requirement from the EIA Study Brief (ESB-323/2019).	• The construction noise was predicted based on standard acoustic principles. • Sound Power Levels (SWLs) of powered mechanical equipment (PME) were taken from Table 3 of the GW-TM, "Sound power levels of other commonly used PME" (Other PME) published by EPD or the Quality Powered Mechanical Equipment (QPME) System available at EPD's website or previous approved EIA reports.	• The prediction of construction noise impact was based on the procedures in GW-TM under the NCO. The programme and plant inventory for proposed construction works adopted in the assessment might vary in future.	Clause 2.1.2 (a), 2.1.2(c), 2.2.1, 2.2.3 (d) and 2.2.3 (e) of Appendix C	Working Paper on Noise Impact Assessment agreed on 29 June 2021
Operational Phase				
The noise impact assessment follows: Annexes 5 and 13 of the EIAO-TM and requirement from the EIA Study Brief (ESB-323/2019).	• 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. having the peak traffic flow (i.e. $L_{10\ (1hour)}$, dB(A)). The assessment year of Without Project scenario, Project Scenario with unmitigated and mitigated measures	N/A	Clause 3.2.1(a), 3.2.1 (c), 3.2.2(a), 3.4.2(c), 4.2.1(a), 4.2.1(c) and 4.3.1(a)(ii) of Appendix C	Working Paper on Noise Impact Assessment agreed on 29 June 2021

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	was determined on the basis of peak hour traffic flow projected within a period of 15 years following commissioning of six traffic lanes along LRT and LRT Road. • Fixed noise was predicted based on the sound power level provided by project engineer, standard acoustic principle and the procedures in the IND-TM under the NCO.			
Water Quality Impact				
The water quality impact assessment follows: Annexes 6 and 14 of the EIAO-TM and requirement from the EIA Study Brief (ESB-323/2019). Qualitative assessment was conducted for the water quality impact during both construction and operation phases. The water pollution to be generated during both construction and operation phases were identified. The amount of water pollution generated during operation phase was quantified. Mitigation measures are recommended for the identified source of water pollution to minimize the potential water quality impacts.	• 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
Waste Management Implications				
The waste management implication assessment for the Project follows: Annexes 7 and 15 of the EIAO-TM as well as the requirements given in EIA Study Brief (No. ESB-323/2019).	• The waste quantities to be generated from the Project were estimated based on engineering assessment.	N/A	N/A	N/A
Land Contamination				
The land contamination assessment for the Project follows: • Annex 19 of the EIAO-TM and the requirements given in EIA Study Brief (No. ESB-323/2019); • Guidance Note for Contaminated Land Assessment and Remediation (EPD, 2007) • Practice Guide for Investigation and Remediation of Contaminated Land (EPD, 2011); and • Guidance Manual for Use of Risk-based Remediation Goals for Contaminated Land Management (EPD, 2007) The methodology includes desktop study, site survey, formulation of soil and groundwater sampling and testing strategy and recommendation of further works.	• The assessment was undertaken based on historical land use and site reconnaissance.	As the concerned facilities of the LRT are still in operation and the demolition and construction works will not commence until 2026-2027, there could be change in site activities and land uses within the Project Area prior to development which may cause further contamination issues. Site re-appraisal should be carried out for the whole Project Area at a later stage of the Project in order to address any new contamination issues caused by the (i) changes in operation of the identified potentially contaminated site and (ii) changes in land use within the Project Area. The submission of supplementary Contamination Assessment Plan(s) (CAP(s)), associated site investigation (SI) works and any necessary remediation should be carried out at the concerned facilities and any new contaminated area identified in the site re-appraisal, prior to the commencement of construction at the potentially contaminated area(s).	N/A	N/A

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Ecological Impact				
The ecological impact assessment follows: Annexes 8 and 16 of the EIAO-TM, EIAO Guidance Note No. 3/2010, No. 6/2010, No. 7/2010 and No. 10/2010, as well as the requirements given in EIA Study Brief (No. ESB-323/2019)	• The assessment was undertaken based on the results of literature review and ecological field surveys.	• Some parts of the assessment area (e.g. hillside mixed woodland and shrubland) were inaccessible during the surveys. Survey at the these areas were conducted as far as practicable with the aid of binoculars and aerial photographs.	Clause 3.4.10 and Appendix H	Working Paper on Ecology Impact Assessment
Cultural Heritage Impact (Built Heritage)				
The built heritage assessment was conducted following the criteria and guidelines as stated in the requirements given in Annexes 10 and 19 of the EIAO-TM as well as Clause 3.4.12 and Appendix J of the EIA Study Brief (ESB-323/2019).	• The assessment was undertaken based on the assessment methodology covering built heritage resources within the assessment area.	N/A	N/A	N/A
Cultural Heritage Impact (Archaeology)				
The archaeology assessment was conducted following the criteria and guidelines as stated in the requirements given in Annexes 10 and 19 of the EIAO-TM as well as Clause 3.4.12 and Appendix J of the EIA Study Brief (ESB-323/2019).	• The assessment was undertaken based on the assessment methodology covering potential archaeological resources within the assessment area.	Archaeological Impact Assessment is not required as no Site of Archaeological Interest is within the 300m assessment area.	N/A	N/A
Landscape and Visual Impacts				
The Landscape Impact and Visual Impact of the Project follows: • Annexes 10 and 18 of the EIAO-TM as well as the requirements given in EIA Study Brief (No. ESB-323/2019). • EIAO Guidance Note No. 8/2010 for general guidelines for preparation of landscape and visual impact assessment	• Landscape and Visual Impact Assessment was carried out based on the project description provided in Section2 of the EIA Report • The broad brush tree and vegetation survey was undertaken in accordance with Clause 2 of Appendix I of the EIA Study Brief.	N/A	N/A	N/A
Hazard to Life				
The Hazard to Life assessment follows: Annex 4 of the EIAO-TM as well as the requirements given in EIA Study Brief (No. ESB-323/2019).	• No hazard to life assessment for the Sha Tin Water Treatment Works is required on the basis that all chlorine drums in Sha Tin WTW would be evacuated by Q4 2021, prior to the commencement of the Project (i.e. Q4 of 2028). • Hazard to life assessment was carried out to evaluate the risks associated with the LPG storage installation at Worldwide Gardens during both construction and operation phases of the Project. Three scenarios namely base case (population in Year 2033 without project), construction phase (population in Year 2033 with Project) and operation phase (population in Year 2041 upon completion of project) were considered. • The LPG quantities were estimated based on inputs from the operator of the LPG compound. • PhastRisk 6.7 was adopted for the quantitative assessment.	N/A	Appendix G	N/A