

Environmental Impact Assessment Ordinance (Cap. 499), Section 5 (7)**Environmental Impact Assessment Study Brief No. ESB-267/2014**

**Project Title: CHAI WAN GOVERNMENT COMPLEX AND VEHICLE DEPOT
(hereinafter known as the "Project")**

**Name of Applicant: Architectural Services Department
(hereafter known as the "Applicant")**

1. BACKGROUND

- 1.1 An application (No. ESB-267/2014) for an Environmental Impact Assessment (EIA) study brief under section 5(1)(a) of the Environmental Impact Assessment Ordinance (EIAO) was submitted by the Applicant on 23 Jan 2014 with a project profile (No. PP-499/2014) (the Project Profile).
- 1.2 The project is to construct and operate a vehicle depot-cum-office building comprising 6 stories (with a Mezzanine floor) and approximately 45m high. The building is proposed to be built on a reclaimed land of approximately 7,000 m² in Chai Wan as shown in Figure 1. It will be operated by the Hong Kong Police Force (HKPF), the Food and Environmental Hygiene Department (FEHD), the Electrical and Mechanical Services Department (EMSD) and the Government Laboratory (GL), mainly with the following facilities:
 - (i) The HKPF Hong Kong Island Police Vehicle Pound and Examination Centre (PVP &EC) of 5,200 m² on Level 1 & 2 with:
 - vehicle examination and brake testing areas;
 - office and staff facilities;
 - store and workshop; and
 - parking spaces.
 - (ii) The HKPF Centralised Case Property Store of about 1,942 m² on Level 3 & 3M;
 - (iii) The FEHD vehicle depot of 4,600 m² serving Hong Kong East on Level 3 & 4 with:
 - parking spaces for 70 vehicles including refuse collection vehicles;
 - vehicle washing facilities and drainage facilities;
 - office and staff facilities; and
 - fire services facilities.
 - (iv) The EMSD Hong Kong Vehicle Depot of 2,200m² on Level 5 with:
 - vehicle repair area and parking area;
 - battery charging room;
 - dangerous goods (DG) store;
 - lubricant storage/lubricant dosing equipment/ chemical waste storage;
 - air compressor room;
 - tyre charger and tyre balancer area;
 - waste oil tank;
 - office and staff facilities; and
 - wastewater sedimentation tank.

- (v) Specialist laboratory for GL of 2,160m² on Level 6 with:
- testing laboratory area;
- storage rooms;
- office and staff facilities;
- DG stores for Categories 2, 3, 4 and 5 DGs; and
- parking spaces.

- 1.3 The Project is a designated project by virtue of Item A.6, Part I, Schedule 2 of the EIAO:
“A transport depot located less than 200m from the nearest boundary of an existing or planned (a) residential area and (b) educational institution.
- 1.4 Pursuant to section 5(7)(a) of the EIAO, the Director of Environmental Protection (the Director) issues this EIA study brief to the Applicant to carry out an EIA study.
- 1.5 The purpose of this EIA study is to provide information on the nature and extent of environmental impacts arising from the construction and operation of the Project and associated works that will take place concurrently. This information will contribute to decisions by the Director on:
- (i) the overall acceptability of any adverse environmental consequences that are likely to arise as a result of the Project and associated works, and their staged implementation;
 - (ii) the conditions and requirements for the detailed design, construction and operation of the Project to mitigate against adverse environmental consequences; and
 - (iii) the acceptability of residual impacts after the proposed mitigation measures are implemented.

2. OBJECTIVES OF THE EIA STUDY

- 2.1 The objectives of the EIA study are as follows:
- (i) to describe the proposed project and associated works together with the requirements and environmental benefits for carrying out the proposed project;
 - (ii) to identify and describe the elements of the community and environment likely to be affected by the proposed project, and/or likely to cause adverse impacts to the proposed project, including both the natural and man-made environment and the associated environmental constraints;
 - (iii) to identify and quantify emission sources and determine the significance of impacts on sensitive receivers and potential affected uses;
 - (iv) to propose the provision of infrastructure or mitigation measures to minimize pollution, environmental disturbance and nuisance during construction, operation of the project;
 - (v) to investigate the feasibility, effectiveness and implications of the proposed mitigation measures;
 - (vi) to identify, predict and evaluate the residual (i.e. after practicable mitigation)

environmental impacts and the cumulative effects expected to arise during the construction, operation phases of the project in relation to the sensitive receivers and potential affected uses;

- (vii) to identify, assess and specify methods, measures and standards, to be included in the detailed design, construction, operation of the project which are necessary to mitigate these residual environmental impacts and cumulative effects and reduce them to acceptable levels;
- (viii) to design and specify the environmental monitoring and audit requirements; and
- (ix) to identify any additional studies necessary to implement the mitigation measures or monitoring and proposals recommended in the EIA report.

3. DETAILED REQUIREMENTS OF THE EIA STUDY

3.1 The Purpose

The purpose of this EIA study brief is to scope the key issues of the EIA study and to specify the environmental issues that are required to be reviewed and assessed in the EIA study. The Applicant has to demonstrate in the EIA report whether the criteria in the relevant sections of the Technical Memorandum on the Environmental Impact Assessment Process of the Environmental Impact Assessment Ordinance (hereinafter referred to as “the TM”) are complied with.

3.2 The Scope

3.2.1 The scope of this EIA study shall cover the Project and associated works mentioned in sub-section 1.2 above. The EIA study shall cover the combined impacts of the whole Project and the cumulative impacts of the existing, committed and planned developments in the vicinity of the Project in accordance with the requirements laid down in section 3.4 of the TM. The environmental impacts of on-site and off-site works and facilities associated with the Project shall be addressed. The EIA study shall address the likely key issues described below, together with any other key issues identified during the course of the EIA study:

- (i) potential air quality impacts on sensitive receivers due to the construction and operation of the Project, including the construction dust emissions, fixed plant engine emissions, vehicular emissions from road traffic induced by operation of the Project, odour emission from FEHD refuse collection vehicles (RCV), and vehicular and/or odour emission due to the arrangement of traffic route of RCV and other project induced vehicles during operation of the Project;
- (ii) the potential hazard to life due to the neighbouring dangerous goods (GD) processing and storage facilities (including but not limited to Sinopec HK (Ex-CRC) Oil Terminal Chai Wan, two petrol-cum-LPG filling stations operated by ExxonMobil at Sheung Mau Road and Sinopec at Chong Fu Road respectively, LPG wagon parking site at junction of Sheung On Street and Sheung Ping Street, as well as any nearby potentially hazardous sources) during construction and operation of the Project.
- (iii) potential noise impacts on sensitive receivers due to the construction and operation of the Project, including the noise generated by construction activities and operational

noise from fixed noise sources, addition traffic flow induced by operation of the Project; and traffic noise due to the arrangement of traffic route of RCV and other project induced vehicles during operation of the Project;

- (iv) potential water quality impact and sewerage impact from the construction and operation of the Project;
- (v) potential waste management and land contamination implications arising from the construction and operation of the Project;
- (vi) potential landscape and visual impacts during the construction and operation of the Project; and
- (vii) potential cumulative environmental impacts of the Project, through interaction or in combination with other existing, committed and planned projects in the vicinity of the Project, and that those impacts may have a bearing on the environmental acceptability of the Project.

3.3 Need of the Project and Consideration of Alternatives

3.3.1 Need of the Project

The Applicant shall provide information on the need of the Project, including the purpose, objectives and environmental benefits of the Project, and describe the scenarios with and without the Project.

3.3.2 Consideration of Alternative Development Options

The Applicant shall provide background information on the consideration of alternative development options including alternative design, scale, extent, layout, and mode of operation for the Project, provide justifications regarding how the proposed development option is arrived at, including the descriptions of the environmental factors considered in the option selection. A comparison of the environmental benefits and dis-benefits of alternative development options shall be made with a view to recommending the preferred option(s) to avoid and minimize adverse environmental effects.

3.3.3 Consideration of Alternative Construction Methods and Sequences of Works

Taking into consideration the combined effect with respect to the severity and duration of the construction impacts to the affected sensitive receivers, the EIA study shall explore alternative construction methods and sequences of works for the Project, with a view to avoiding or minimizing prolonged adverse environmental impacts. A comparison of the environmental benefits and dis-benefits of applying different construction methods and sequence of works shall be made.

3.3.4 Selection of Preferred Scenario(s)

Taking into consideration of the findings in sub-sections 3.3.2 and 3.3.3 above, the Applicant shall recommend/justify the adoption of the preferred scenario(s) that will maximize environmental benefits and avoid or minimize adverse environmental effects arising from the Project, and adequately describe the part that environmental factors played in arriving at the final selection(s).

3.4 Technical Requirements

- 3.4.1 The Applicant shall conduct the EIA study to address the environmental aspects of the activities as described in section 3.2 above. The assessment shall be based on the best and latest information available during the course of the EIA study. The Applicant shall include in the EIA report details of the construction and operational programme and methodologies for the Project. The Applicant shall clearly state in the EIA report the time frame and works programme of the Project and other concurrent projects, and assess the cumulative environmental impacts from the Project and interacting projects as identified in the EIA study.
- 3.4.2 The EIA study shall follow the technical requirements specified below and in the Appendices of this EIA study brief.

3.4.3 Air Quality Impact

- 3.4.3.1 The Applicant shall follow the criteria and guidelines for evaluating and assessing air quality impact as stated in section 1 of Annex 4 and Annex 12 of the TM.
- 3.4.3.2 The study area for the air quality impact assessment shall be defined by a distance of 500 metres from the boundary of the Project site, with consideration to be extended to include major existing, planned and committed air pollutant emission sources that may have a bearing on the environmental acceptability of the Project. The assessment shall include the existing, committed and planned sensitive receivers within the study area as well as areas where air quality may be potentially affected by the Project. The sensitive receivers shall include those at Knight Court, Hang Fa Tsuen, Tsui Wan Estate, the Hong Kong Institute of Vocational Education (Chai Wan) (CWIVE) and Pamela Youde Nethersole Eastern Hospital as well as areas where air quality may be potentially affected by the Project, but exclude the proposed Project itself. The assessment shall also take into account the impacts of emission sources from nearby concurrent projects, if any. The assessment shall be based on the best available information at the time of the assessment.
- 3.4.3.3 The air quality impact assessment shall follow the detailed technical requirements given in Appendix A. The Applicant shall assess the air pollutant concentrations with reference to the relevant sections of the guidelines in Appendix A, or other methodology as agreed by the Director. The Applicant shall also note that the PATH model may be used for estimating the future background concentrations by taking into account the major air pollutant emission sources in Hong Kong and nearby regions.

3.4.4 Hazard to Life

- 3.4.4.1 The Applicant shall follow the criteria for evaluating hazard to life as stated in section 2 of Annex 4 of the TM.
- 3.4.4.2 The assessment shall include the hazards due to Sinopec HK (Ex-CRC) Oil Terminal Chai Wan, two petrol-cum-LPG filling stations operated by ExxonMobil at Sheung Mau Road and Sinopec at Chong Fu Road respectively, LPG wagon parking site at junction of Sheung On Street and Sheung Ping Street, as well as any nearby potentially hazardous sources.
- 3.4.4.3 The hazard to life assessment shall follow the detailed technical requirements given in Appendix B.

3.4.5 Noise Impact

- 3.4.5.1 The Applicant shall follow the criteria and guidelines for evaluating and assessing noise impact as stated in Annexes 5 and 13 of the TM.
- 3.4.5.2 The study area for the noise impact assessment shall generally include areas within 300 metres from the boundary of the Project site. Subject to the agreement of the Director, the study area can be reduced accordingly if the first layer of noise sensitive receivers (NSRs), closer than metres from the outer Project limit, provides acoustic shielding to those receivers at distances further away from the Project. The study area shall be expanded to include NSRs at distances over 300 metres from the Project if those NSRs are also affected by the construction and operation of the Project. The assessment shall include the NSRs at Knight Court, Tsui Wan Estate, Hang Fa Tsuen, CWIVE, etc.
- 3.4.5.3 The noise impact assessment shall follow the detailed technical requirements given in Appendix C.

3.4.6 Water Quality Impact

- 3.4.6.1 The Applicant shall follow the criteria and guidelines for evaluating and assessing water quality impact as stated in Annexes 6 and 14 of the TM.
- 3.4.6.2 The study area for the water quality impact assessment shall include areas within 500 metres from the boundary of the Project site and Eastern Buffer Water Control Zone as designated under Water Pollution Control Ordinance. The study area can be extended to include other areas such as existing and new drainage system, and the associated water system(s) in the vicinity if they are found also being affected by the Project during the EIA study and have a bearing on the environmental acceptability of the Project. The assessment shall cover:
- (i) Construction site runoff;
 - (ii) Effluent and surface runoff from
 - (a) Vehicle washing bays;
 - (b) Vehicle examination and brake testing areas;
 - (c) Vehicle repair area, parking area and parking spaces;
 - (d) Store and workshop, battery charging room, dangerous goods stores, lubricant storage area;
 - (e) Fire services facilities;
 - (f) Air compressor room;
 - (g) Waste oil tank; and
 - (h) Wastewater sedimentation tank.
- whether the aforesaid items (a) to (h) are covered, partially covered, or not provided with covers; and
- (iii) sewage generated from workforce and the office staff during the construction and operation phase;
- 3.4.6.3 The water quality impact assessment shall follow the detailed technical requirements given in Appendix D1.

3.4.7 Sewerage and Sewage Treatment Implication

3.4.7.1 The Applicant shall follow the criteria and guidelines for evaluating and assessing impacts on the public sewerage, sewage treatment and disposal facilities as stated in section 6.5 in Annex 14 of the TM.

3.4.7.2 The assessment of the sewerage and sewage treatment implication arising from the operation of the Project shall follow the detailed technical requirements given in Appendix D2.

3.4.8 **Waste Management Implication**

3.4.8.1 The Applicant shall follow the criteria and guidelines for evaluating and assessing waste management implications as stated in Annexes 7 and 15 of the TM.

3.4.8.2 The assessment of the waste management implication shall follow the detailed technical requirements given in Appendix E1.

3.4.9 **Land Contamination**

3.4.9.1 The Applicant shall follow the guidelines for evaluating and assessing potential land contamination issue as stated in sections 3.1 and 3.2 of Annex 19 of the TM.

3.4.9.2 The assessment of the potential land contamination issue of the Project shall follow the detailed requirements given in Appendix E2.

3.4.10 **Landscape and Visual Impacts**

3.4.10.1 The Applicant shall follow the criteria and guidelines as stated in Annexes 10 and 18 of the TM, the EIAO Guidance Note No. 8/2010 on “Preparation of Landscape and Visual Impact Assessment under the Environmental Impact Assessment Ordinance” and the report of “Landscape Value Mapping of Hong Kong” for evaluating and assessing the landscape and visual impacts.

3.4.10.2 The study area for the landscape impact assessment shall include areas within 500 metres distance from the boundary of the Project site. The study area for the visual impact assessment shall be defined by the visual envelope of the Project.

3.4.10.3 The landscape and visual impact assessments shall follow the detailed technical requirements given in Appendix F.

3.4.11 **Environmental Monitoring and Audit (EM&A) Requirements**

3.4.11.1 The Applicant shall identify and justify in the EIA study whether there is any need for EM&A activities during the construction and operation phases of the Project and, if affirmative, to define the scope of EM&A requirements for the Project in the EIA study.

3.4.11.2 Subject to the confirmation of the EIA study findings, the Applicant shall comply with the requirements as stipulated in Annex 21 of the TM.

3.4.11.3 The Applicant shall prepare a Project Implementation Schedule (in the form of a checklist as shown in Appendix G) containing the EIA study recommendations and mitigation measures with reference to the implementation programme.

4. DURATION OF VALIDITY

- 4.1 The Applicant shall notify the Director of the commencement of the EIA study. If the EIA study does not commence within 36 months after the date of issue of the EIA study brief, the Applicant shall apply to the Director for a fresh EIA study brief before commencement of the EIA study.

5. REPORT REQUIREMENTS

- 5.1 In preparing the EIA report, the Applicant shall refer to Annex 11 of the TM for the contents of an EIA report. The Applicant shall also refer to Annex 20 of the TM, which stipulates the guidelines for the review of an EIA report.
- 5.2 The Applicant shall provide the following summary information in the EIA report :

(i) Summary of Environmental Outcomes

The EIA report shall contain a summary of key environmental outcomes arising from the EIA study, including estimated population protected from various environmental impacts, environmentally sensitive areas protected, environmentally friendly options considered and incorporated in the preferred option, environmental designs recommended, key environmental problems avoided, compensation areas included and the environmental benefits of environmental protection measures recommended.

(ii) Summary of Environmental Impacts

To facilitate effective retrieval of pertinent key information, the EIA report shall contain a summary table of environmental impacts showing the assessment points, results of impact predictions, relevant standards or criteria, extents of exceedances predicted, impact avoidance measures considered, mitigation measures proposed and residual impacts (after mitigation). This summary shall cover each individual impact and shall also form an essential part of the executive summary of the EIA report.

(iii) Documentation of Key Assessment Assumptions, Limitation of Assessment Methodologies and related Prior Agreement(s) with the Director

To facilitate efficient retrieval, the EIA report shall contain a summary including the assessment methodologies and key assessment assumptions adopted in the EIA study, the limitations of these assessment(s) methodologies/assumptions, if any, plus all relevant prior agreement(s) with the Director or other Authorities on individual environmental media assessment components. The proposed use of any alternative assessment tool(s) or assumption(s) have to be justified by the Applicant, with supporting documents based on cogent, scientific and objectively derived reason(s) before seeking the Director's agreement. The supporting documents shall be provided in the EIA report.

- 5.3 The Applicant shall supply the Director with hard and electronic copies of the EIA report and the executive summary in accordance with the requirements given in Appendix H of this EIA study brief. The Applicant shall, upon request, make additional copies of the above documents available to the public, subject to payment by the interested parties of

full costs of printing.

6. OTHER PROCEDURAL REQUIREMENTS

- 6.1 If there is any change in the name of Applicant for this EIA study brief during the course of the EIA study, the Applicant must notify the Director immediately.
- 6.2 If there is any key change in the scope of the Project mentioned in sub-section 1.2 of this EIA study brief and in Project Profile (No. PP-499/2014), the Applicant must seek confirmation from the Director in writing on whether or not the scope of issues covered by this EIA study brief can still cover the key changes, and the additional issues, if any, that the EIA study must also address. If the changes to the Project fundamentally alter the key scope of the EIA study brief, the Applicant shall apply to the Director for a fresh EIA study brief.

7. LIST OF FIGURE AND APPENDICES

- 7.1 This EIA study brief includes the following figure and appendices:

Figure 1 – Project Location Plan

Appendix [A] – Requirements for Air Quality Impact Assessment

Appendix [B] – Requirements for Hazard to Life Assessment

Appendix [C] – Requirements for Noise Impact Assessment

Appendix [D1] – Requirements for Water Quality Impact Assessment

Appendix[D2] – Requirements for Assessment of Sewerage and Sewage Treatment Implication

Appendix [E1] – Requirements for Assessment of Waste Management Implication

Appendix [E2] – Requirements for Land Contamination Assessment

Appendix [F] – Requirements for Landscape and Visual Impact Assessment

Appendix [G] – Implementation Schedule

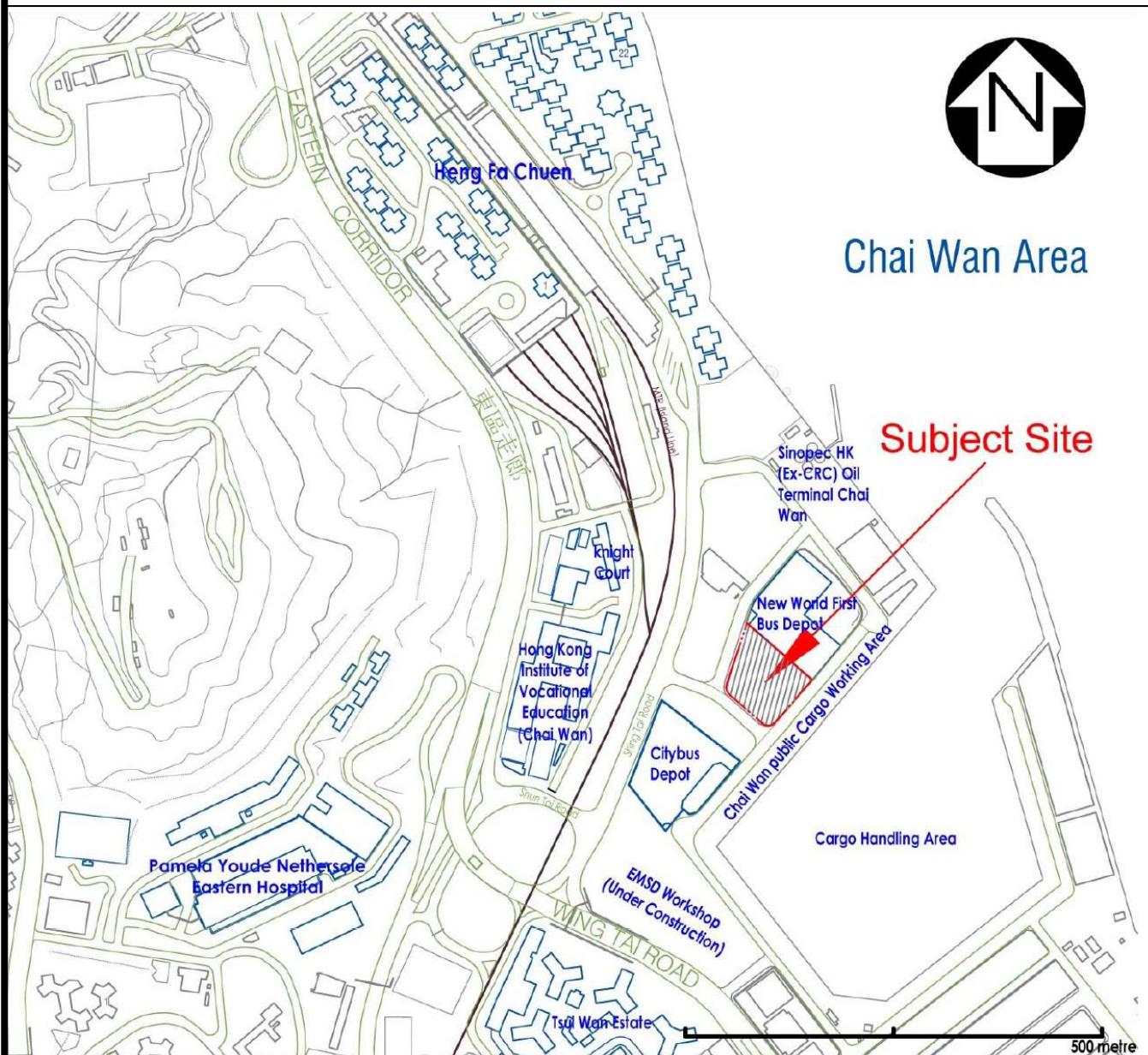
Appendix [H] – Requirements for EIA Report Documents

--- END OF EIA STUDY BRIEF ---

March 2014

Environmental Assessment Division

Environmental Protection Department



Chai Wan Government Complex and Vehicle Depot
(柴灣政府綜合大樓及車廠)

Location Plan of the Project – 工程項目的位置圖

This figure was prepared based on Figure 1 of the Project Profile (No.: PP-499/2014)

本圖是根據工程項目簡介(編號：PP-499/2014) 圖 1 編制

Figure 1 附圖 1

EIA Study Brief No.
ESB-267/2014

環評研究概要編號
ESB-267/2014



Appendix A**Requirements for Air Quality Impact Assessment**

The air quality impact assessment shall include the following:

1. Background and Analysis of Activities

- (i) Provision of background information relating to air quality issues relevant to the Project, e.g. description of the types of activities of the Project that may affect air quality during construction and operation stages of the Project.
- (ii) Giving an account, where appropriate, of the consideration/measures that had been taken into consideration in the planning of the Project to abate the air pollution impact. The Applicant shall consider alternative construction methods/phasing programmes, and alternative operation modes to minimize the air quality impact during construction and operation stages of the Project.
- (iii) Presentation of background air quality levels in the study area for the purpose of evaluating cumulative air quality impacts during construction and operation stages of the Project. If PATH (Pollutants in the Atmosphere and their Transport over Hong Kong) model is used to estimate the background air quality, details for the estimation of the emission sources to be adopted in the model runs should be clearly presented.

2. Identification of Air Sensitive Receivers (ASRs) and Examination of Emission / Dispersion Characteristics

- (i) Identification and description of existing, planned and committed ASRs that would likely be affected by the Project, including those earmarked on the relevant Outline Zoning Plans, Development Permission Area Plans, Outline Development Plans and Layout Plans and other relevant published land use plans, including plans and drawings published by Lands Department and any land use and development applications approved by the Town Planning Board. The Applicant shall select the assessment points of the identified ASRs that represent the worst impact point of these ASRs. A map clearly showing the location and description such as name of buildings, their uses and height of the selected assessment points shall be given. The separation distances of these ASRs from the nearest emission sources shall also be given.
- (ii) Provision of a list of air pollution emission sources, including any nearby emission sources which are likely to have impact on the Project based on the analysis of the constructional and operational activities in section 1 above. Examples of constructional stage emission sources include stock piling, vehicular movements on unpaved haul roads on site, etc. Examples of operational stage emission sources include exhaust emissions from vehicles, odour emissions from refuse collection vehicles (RCV) and volatile chemicals emissions from laboratory, etc. Confirmation regarding the validity of the assumptions adopted and the magnitude of the activities (e.g. volume of construction material handled, etc.) shall be obtained from the relevant government departments / authorities and documented.
- (iii) Identification of chimneys and obtainment of relevant chimney emission data in the study area by carrying out a survey for assessing the cumulative air quality impact of

air pollutants through chimneys. The Applicant shall ensure and confirm that the chimney emission data used in their assessment have been validated and updated by their own survey. If there are any errors subsequently found in their chimney emission data used, the Applicant shall be fully responsible and the submission may be invalidated.

- (iv) The emissions from any concurrent projects identified as relevant during the course of the EIA study shall be taken into account as contributing towards the overall cumulative air quality impact. The impact as affecting the existing, committed and planned ASRs within the study area shall be assessed, based on the best information available at the time of assessment.

3. Construction Phase Air Quality Impact

- (i) The Applicant shall follow the requirements stipulated under the Air Pollution Control (Construction Dust) Regulation to ensure that construction dust impacts are controlled within the relevant standards as stipulated in Section 1 of Annex 4 of the TM.
- (ii) If the Applicant anticipates that the Project will give rise to significant construction dust impacts likely to exceed recommended limits in the TM at the ASRs despite the incorporation of the dust control measures proposed, a quantitative assessment should be carried out to evaluate the construction dust impact at the identified ASRs. The Applicant shall follow the methodology set out in section 5 below when carrying out the quantitative assessment.
- (iii) A monitoring and audit programme for the construction phase of the Project shall be devised to verify the effectiveness of the control measures proposed so as to ensure proper construction dust control.

4. Operational Phase Air Quality Impact

- (i) The Applicant shall assess the expected air pollutant impacts at the identified ASRs based on an assumed reasonably worst-case scenario under normal operating conditions. If the assessment indicates likely exceedances of the recommended limits in the TM at the development and the nearby ASRs, a quantitative assessment should be carried out to evaluate the operational phase air quality impacts at the identified ASRs. The Applicant shall follow the methodology set out in section 5 below when carrying out the quantitative assessment.
- (ii) The air pollution impacts of future road traffic induced by the operation of the Project shall be calculated based on the highest emission strength from the road within the next 15 years upon commissioning of the proposed development. The Applicant shall demonstrate that the selected year of assessment represents the highest emission scenario given the combination of vehicular emission factors and traffic flow for the selected year. The Applicant shall propose Fleet Average Emission Factors for assessing vehicle emissions. If necessary, the Fleet Average Emission Factors shall be derived by a motor vehicle emission model such as EMFAC-HK model and documented in the EIA report. The Fleet Average Emission Factors used in the assessment shall be agreed with the Director. The traffic flow data and assumptions, such as the exhaust technology fractions, vehicle age/population distribution, traffic forecast and speed fractions, that are used in the assessment shall be presented in the

form of both summary table(s) and graph(s).

- (iii) If vehicle tunnels and/or full enclosures are proposed in the Project, it is the responsibility of the Applicant to ensure that the air quality inside these proposed structures shall comply with EPD's "Practice Note on Control of Air Pollution in Vehicle Tunnels". When assessing air quality impact due to emissions from tunnels/full enclosures, the Applicant shall ensure prior agreement with the relevant ventilation design engineer over the amount and the types/kinds of pollutants emitted from these full enclosures; and such assumptions shall be clearly and properly documented in the EIA report.
- (iv) The Applicant shall assess the potential vehicular emission and/or odour impact arising from the arrangement of traffic route and parking of RCV and other vehicles induced by the operation of the Project during the operation phase based on assumed reasonably worst-case scenario under normal operating conditions.
- (v) A monitoring and audit programme for the operational phase of the Project shall be devised to verify the effectiveness of the control measures proposed so as to ensure proper control of operational air quality impacts.

5. Quantitative Assessment Methodology

- (i) The Applicant shall conduct the quantitative assessment by applying the general principles enunciated in the modelling guidelines, which are available in EPD website¹, while making allowance for the specific characteristic of the Project. This specific methodology must be documented in such level of details, preferably assisted with tables and diagrams, to allow the readers of the EIA report to grasp how the model has been set up to simulate the situation under study without referring to the model input files. Detailed calculations of air pollutants emission rates for input to the modelling shall be presented in the EIA report. The Applicant must ensure consistency between the text description and the model files at every stage of submissions for review. In case of doubt, the Applicant shall seek prior agreement from the Director on the specific modelling details.
- (ii) The Applicant shall identify the key/representative air pollution parameters (types of pollutants and averaging time concentrations) to be evaluated and provide explanation for selecting such parameters for assessing the impact of the Project. Ozone Limiting Method (OLM) or Discrete Parcel Method (DPM) or other method to be agreed with the Director shall be used to estimate the conversion ratio of NO_x to NO₂ if NO₂ has been identified as a key air pollutant.
- (iii) The Applicant shall calculate the overall cumulative air quality impact at the ASRs identified under section 2 above and compare these results against the criteria set out in Section 1 of Annex 4 in the TM. The predicted air quality impacts (both unmitigated and mitigated) shall be presented in the form of summary table(s) and pollution

¹ http://www.epd.gov.hk/epd/english/environmentinhk/air/guide_ref/guide_aqa_model.html

- (i) Guidelines on Choice of Models and Model Parameters
- (ii) Guidelines on Assessing the "Total" Air Quality Impacts (Revised)
- (iii) Guidelines on the Use of Alternative Computer Models in Air Quality Assessment (Revised)

contours, to be evaluated against the relevant air quality standards and on any effect they may have on the land use implications. Plans of a suitable scale should be used to present pollution contours to allow buffer distance requirements to be determined properly.

- (iv) If there are any direct technical noise remedies recommended in the study, the air quality implication due to these technical remedies shall be assessed. For instance, if barriers that may affect dispersion of air pollutants are proposed, then the implications of such remedies on air quality impact shall be assessed. The Applicant shall highlight clearly the locations and types of agreed noise mitigating measures (where applicable), be they noise barriers and affected ASRs, on contour maps for easy reference.

6. Mitigation Measures for Non-compliance

The Applicant shall propose remedies and mitigating measures where the predicted air quality impact exceeds the criteria set in Section 1 of Annex 4 in the TM. These measures and any constraints on future land use planning shall be agreed with the relevant government departments/authorities and documented. The Applicant shall demonstrate quantitatively that the residual impacts after incorporation of the proposed mitigating measures will comply with the criteria stipulated in Section 1 of Annex 4 in the TM.

7. Submission of Model Files

Input and output file(s) of model run(s) including those files for generating the pollution contours and emission calculation work sheets shall be submitted to the Director in electronic format together with the submission of the EIA report.

Appendix B**Requirements for Hazard to Life Assessment****1. Construction Phase**

The Applicant shall carry out hazard assessment to evaluate the risk to construction workers of the Project due to the neighbouring dangerous goods (DG) processing and storage facilities (including but not limited to Sinopec HK (Ex-CRC) Oil Terminal Chai Wan, two petrol-cum-LPG filling stations operated by ExxonMobil at Sheung Mau Road and Sinopec at Chong Fu Road respectively, LPG wagon parking site at junction of Sheung On Street and Sheung Ping Street, as well as any nearby potentially hazardous sources). The hazard assessment shall include the following:

- (i) identify hazardous scenarios associated with the neighbouring DG processing and storage facilities with a view to determining a set of relevant scenarios to be included in a Quantitative Risk Assessment (QRA);
- (ii) execute a QRA of the set of hazardous scenarios determined in item 1(i), expressing population risks in both individual and societal terms;
- (iii) compare individual and societal risks with the criteria for evaluating hazard to life stipulated in Annex 4 of the TM; and
- (iv) identify and assess practicable and cost-effective risk mitigation measures.

2. Operational Phase

The Applicant shall carry out hazard assessment to evaluate the off-site population risk due to the operation of the Project, and the on-site risk to project workers from neighbouring DG processing and storage facilities (including but not limited to Sinopec HK (Ex-CRC) Oil Terminal Chai Wan, two petrol-cum-LPG filling stations operated by ExxonMobil at Sheung Mau Road and Sinopec at Chong Fu Road respectively, LPG wagon parking site at junction of Sheung On Street and Sheung Ping Street, as well as any nearby potentially hazardous source). The hazard assessment shall include the following :

- (i) identify hazardous scenarios associated with the operation of the project, and the neighbouring DG processing and storage facilities (including but not limited to Sinopec HK (Ex-CRC) Oil Terminal Chai Wan, two petrol-cum-LPG filling stations operated by ExxonMobil at Sheung Mau Road and Sinopec at Chong Fu Road respectively, LPG wagon parking site at junction of Sheung On Street and Sheung Ping Street, as well as any nearby potentially hazardous source), with a view to determining a set of relevant scenarios to be included in a QRA;
- (ii) execute a QRA of the set of hazardous scenarios determined in item 2(i), expressing population risks in both individual and societal terms;
- (iii) compare individual and societal risks with the criteria for evaluating hazard to life stipulated in Annex 4 of the TM; and
- (iv) identify and assess practicable and cost-effective risk mitigation measures.

3. The Applicant shall conduct cumulative risk assessment of DG to evaluate the risk due to operation of the Project and the neighbouring DG processing and storage facilities (including but not limited to Sinopec HK (Ex-CRC) Oil Terminal Chai Wan, two petrol-cum-LPG filling stations operated by ExxonMobil at Sheung Mau Road and Sinopec at Chong Fu Road respectively, LPG wagon parking site at junction of Sheung On Street and Sheung Ping Street, as well as any nearby potentially hazardous source).
4. The methodology to be used in the hazard assessment shall be consistent with previous studies having similar issues. (e.g. New World First Bus Permanent Depot at Chai Wan, ESB-034/1999 and Proposed Headquarters and Bus Maintenance Depot in Chai Wan ESB-065-2001).

Appendix C**Requirements for Noise Impact Assessment**

The noise impact assessment shall include the following:

1. Provision of Background Information and Existing Noise Levels

The Applicant shall provide background information relevant to the Project, e.g. relevant previous or current studies. Unless required for determining the planning standards, e.g. those for planning of fixed noise sources, no existing noise levels are particularly required.

2. Identification of Noise Sensitive Receivers

- (i) The Applicant shall refer to Annex 13 of the TM when identifying the NSRs. The NSRs shall include existing NSRs and planned/committed noise sensitive developments and uses earmarked on the relevant Outline Zoning Plans, Development Permission Area Plans, Outline Development Plans, Layout Plans and other relevant published land use plans, including plans and drawings published by Lands Department and any land use and development applications approved by the Town Planning Board. Photographs of existing NSRs shall be appended to the EIA report.
- (ii) The Applicant shall select assessment points to represent identified NSRs for carrying out quantitative noise assessment described below. The assessment points shall be agreed by the Director prior to the quantitative noise assessment and may be varied subject to the best and latest information available during the course of the EIA study. A map showing the location and description such as name of building, use, and floor of each and every selected assessment point shall be given. For planned noise sensitive land uses without committed site layouts, the Applicant should use the relevant planning parameters to work out representative site layouts for operational noise assessment purpose. However, such assumptions together with any constraints identified, such as setback of building, building orientation, extended podium, shall be agreed by the relevant responsible parties including Planning Department and Lands Department in accordance with section 6.3 of Annex 13 of the TM.

3. Provision of an Emission Inventory of the Noise Sources

The Applicant shall provide an inventory of noise sources including representative construction equipment for construction noise assessment, and traffic flow/fixed plant equipment, as appropriate, for operational noise assessment. Confirmation of the validity of the inventory shall be obtained from the relevant government departments/authorities and documented in the EIA report.

4. Construction Noise Assessment

- (i) The assessment shall cover the cumulative noise impacts due to the construction works of the Project and other concurrent projects identified during the course of the EIA study.
- (ii) The Applicant shall carry out assessment of noise impact from construction (excluding percussive piling) of the Project during daytime, i.e. 7am to 7pm, on weekdays other than general holidays in accordance with methodology in paragraphs 5.3 and 5.4 of Annex 13 of the TM. The criteria in Table 1B of Annex 5 of TM shall be adopted in

the assessment.

- (iii) N.A.
- (iv) To minimize the construction noise impact, alternative construction methods to replace percussive piling and blasting shall be proposed as far as practicable.
- (v) If the unmitigated construction noise levels are found exceeding the relevant criteria, the Applicant shall propose practicable direct mitigation measures (including movable barriers, enclosures, quieter alternative methods, re-scheduling and restricting hours of operation of noisy tasks) to minimize the impact. If the mitigated noise levels still exceed the relevant criteria, the duration of the noise exceedance shall be given.
- (vi) The Applicant shall, as far as practicable, formulate a reasonable construction programme so that no work will be required in restricted hours as defined under the Noise Control Ordinance (NCO). In case the Applicant needs to evaluate whether construction works in restricted hours as defined under the NCO are feasible or not in the context of programming construction works, reference should be made to relevant technical memoranda issued under the NCO. Regardless of the results of construction noise impact assessment for restricted hours, the Noise Control Authority will process Construction Noise Permit (CNP) application, if necessary, based on the NCO, the relevant technical memoranda issued under the NCO, and the contemporary conditions/situations. This aspect should be explicitly stated in the noise chapter and the conclusions and recommendations chapter in EIA report.

5. Operational Noise Assessment

(i) Road Traffic Noise

The Applicant shall assess any adverse traffic noise impact induced by the operation of the Project. The following assessment requirements shall be followed.

(a) Calculation of Noise Levels

The Applicant shall analyse the scope of the proposed traffic route to identify road sections for the purpose of traffic noise impact assessment. The traffic noise impact shall be considered significant if the traffic noise level with the project is greater than that without the project at the design year by 1.0 dB(A) or more. Figures showing extents of the relevant road sections shall be provided in the EIA report.

The Applicant shall calculate the expected road traffic noise using methods described in the U.K. Department of Transport's "Calculation of Road Traffic Noise" (1988). Calculations of future road traffic noise shall be based on the peak hour traffic flow in respect of the maximum traffic projection within a 15 years period upon commencement of operation of the proposed roadwork.

The Applicant shall calculate traffic noise levels in respect of each road section and the overall noise levels from combined road sections at the NSRs.

The EIA shall contain sample calculations and input parameters as

considered necessary and requested by the Director, and drawings (i.e. road-plots of the traffic noise model) of appropriate scale to show the road segments, topographic barriers (if any), and assessment points input into the traffic noise model. The Applicant shall provide the input data sets of traffic noise prediction model in the format of electronic files adopted in the EIA study as requested by the Director for the following scenarios:

- (1) scenario without the projects at the design year;
- (2) unmitigated scenario at assessment year;
- (3) mitigated scenario at assessment year; and
- (4) prevailing scenario for indirect technical remedies eligibility assessment, if applicable.

The data shall be in electronic text, file (ASCII format) containing road segments, barriers (if any) and NSRs' information. The data structure of the above file shall be agreed with the Director. CD-ROM(s) containing the above data shall be attached in the EIA report.

(b) Presentation of Noise Levels

The Applicant shall present the noise levels in L₁₀ (1 hour) at the NSRs at various representative floor levels (in m.P.D.) on tables and plans of suitable scale.

A quantitative assessment at the NSRs shall be carried out and compared against the criteria set out in Table 1A of Annex 5 of the TM. The potential noise impact of the Project shall be quantified by estimating the total number of dwellings, classrooms and other noise sensitive elements that will be exposed to noise levels exceeding the criteria set in Table 1A of Annex 5 of the TM.

(c) Proposals for Noise Mitigation Measures

After rounding of the predicted noise levels according to the U.K. Department of Transport's "Calculation of Road Traffic Noise" (1988), the Applicant shall propose in accordance with section 6 of Annex 13 of the TM direct technical remedies in all situations where the predicted traffic noise level exceeds the criteria set in Table 1A of Annex 5 of the TM by 1.0 dB(A) or more and at the same time is greater than that without the project at the design year by 1.0 dB(A) or more. The direct mitigation measures listed under section 6.1 of Annex 13 of the TM, including the option of alternative land use arrangement, shall be thoroughly explored and evaluated with a view to reducing the noise level at the NSRs concerned to the level meeting the relevant noise criteria. The feasibility, practicability, programming and effectiveness of the recommended mitigation measures shall be assessed in accordance with section 4.4.2(k) of the TM. Specific reasons for not adopting certain direct technical remedies in the design to reduce the traffic noise to a level meeting the criteria in the TM or to maximize the protection for the NSRs as far as possible should be clearly quantified and laid down. Sections of barriers proposed to protect existing NSRs shall be differentiated clearly from those proposed for the protection of future or planned NSRs as the latter is only required to be constructed before the occupation of the

planned NSRs. To facilitate the phased implementation of barriers under this principle, a barrier inventory showing intended NSRs (ie. existing NSRs as distinct from planned NSRs) to be protected by different barrier sections to achieve different extent of noise reduction (to be quantified in terms of how many dB(A)) should be provided.

The total number of dwellings, classrooms and other noise sensitive elements that will be benefited from, and be protected by the provision noise mitigation measures should be provided. In order to clearly present the extents/locations of the recommended noise mitigation measures, plans prepared from 1:1000 or 1:2000 survey maps showing the mitigation measures (e.g., enclosures/barriers, low noise road surfacing, etc.) should be included in the EIA report.

The Applicant shall provide, in the EIA report information of recommended noise mitigation measures (such as barrier types, nominal dimensions at different cross-sections, extents/locations, lengths and mPD levels of barriers) in an appropriate format (including electronic format).

The total number of dwellings, classrooms and other noise sensitive elements that will still be exposed to noise above the criteria with the implementation of all recommended direct technical remedies shall be quantified.

In case where a number of NSRs cannot be protected by the recommended direct mitigation measures, the Applicant shall identify and estimate the total number of existing dwellings, classrooms and other noise sensitive elements which may qualify for indirect technical remedies, the associated costs and any implications for such implementation. For the purpose of determining eligibility of the affected premises for indirect technical remedies, reference shall be made to the following set of three criteria:

- (1) the predicted overall noise level at the NSR from the road sections and other traffic noise in the vicinity must be above a specified noise level (e.g. 70 dB(A) for domestic premises and 65 dB(A) for educational institutions and places of public worship, all in L_{10} (1hour));
- (2) the predicted overall noise level at the NSR is at least 1.0 dB(A) more than the prevailing traffic noise level, i.e. the total traffic noise level existing before the commencement of works to construct the road; and
- (3) the contribution from the road sections to the increase in predicted overall noise level from the new road at the NSR must be at least 1.0dB(A).

(ii) Fixed Noise Sources

(a) Assessment of Fixed Source Noise Levels

The Applicant shall identify any fixed noise sources including but not limited to any permanent and temporary industrial noise source(s), ventilation system(s) of building(s) and vehicle repair workshop(s), etc. that may have a bearing on the environmental acceptability of the Project and those caused by the Project. The Applicant shall calculate expected noise using standard acoustics principles. Calculations for expected noise shall be

based on assumed plant inventories and utilization schedule for worst-case scenario. The Applicant shall calculate noise levels taking into account correction of tonality, impulsiveness and intermittency in accordance with Technical Memorandum for Assessment of Noise from Places other than Domestic Premises, Public Places or Construction Sites issued under NCO.

(b) **Presentation of Noise Levels**

The Applicant shall present the existing and future noise levels in L_{eq} (30 min) at the NSRs at various representative floor levels (in m P.D.) on tables and plans of suitable scale. A quantitative assessment at the NSRs for the proposed fixed noise source(s) shall be carried out and compared against the criteria set out in Table 1A of Annex 5 of the TM.

(c) **Proposals for Noise Mitigation Measures**

The Applicant shall propose direct technical remedies within the Project limits in all situations where the predicted noise level exceeds the criteria set out in Table 1A of Annex 5 of the TM to protect the affected NSRs.

6. Assessment of Side Effects and Constraints

The Applicant shall identify, assess and propose means to minimize any side effects and to resolve any potential constraints due to the inclusion of any recommended direct technical remedies.

7. Evaluation of Constraints on Planned Noise Sensitive Developments/Land uses

For planned noise sensitive uses which will still be affected even with practicable direct technical remedies in place, the Applicant shall propose, evaluate and confirm the practicability of additional measures within the planned noise sensitive uses and shall make recommendations on how these noise sensitive uses will be designed for the information of relevant parties. The Applicant shall take into account agreed environmental requirements / constraints identified in the EIA study to assess the development potential of concerned sites which shall be made known to the relevant parties.

Appendix D1**Requirements for Water Quality Impact Assessment**

1. The Applicant shall identify and analyse physical, chemical and biological disruptions of the water system(s) arising from the construction and operation of the Project.
2. The Applicant shall predict, quantify and assess any water quality impacts arising from the construction and operation of the Project, but not limited to, site runoff, effluent, oil and grease, and wastewater on the water system(s) and the sensitive receivers within the study area.
3. The assessment shall include, but not be limited to the following:
 - (i) the water quality impacts of the site run-off generated during the construction stage such as the effluents generated from dewatering associated with piling activities, grouting and concrete washing and those specified in the ProPECC Practice Note 1/94;
 - (ii) the water quality impacts of the runoff containing oil/grease and suspended solids and other pollutants pertaining to, or generating from the Project during the operational stage;
 - (iii) the water quality impacts on drainages around the work site(s);
 - (iv) the water quality impacts of wastewater generated including *inter alia* wastewater discharge from treated vehicle washwater, effluent from maintenance and repairing activities, sewage arising from workforce during construction and the staff office during operation; and
 - (v) the water quality impacts of fuel, oil and disinfectant fluid spillage, in particular the accidental spillage associated with storage, transfer and trans-shipment of fuel, oil and disinfectant fluid during the operation of the Project.
4. The Applicant shall address water quality impacts due to the construction phase and operational phase of the Project. Essentially, the assessment shall address the following :
 - (i) collect and review background information on affected existing and planned water systems, their respective catchments and sensitive receivers which might be affected by the Project;
 - (ii) characterize water quality of the water systems and sensitive receivers including Chai Wan Cargo Handling Basin, which might be affected by the Project based on existing best available information or through appropriate site survey and tests;
 - (iii) identify and analyse relevant existing and planned future activities, beneficial uses and water sensitive receivers related to the affected water system(s). The Applicant should refer to, *inter alia*, those developments and uses earmarked on the relevant Outline Zoning Plans, Development Permission Area Plans, Outline Development Plans and Layout Plans, and any other relevant published landuse plans;

- (iv) identify pertinent water quality objectives and establish other appropriate water quality criteria or standards for the water system(s) and the sensitive receivers identified in (i), (ii) & (iii) above;
- (v) review the specific construction methods and configurations, and operation of the Project to identify and predict the likely water quality impacts arising from the Project;
- (vi) identify and quantify existing and likely future water pollution sources, including point discharges and non-point sources to surface water runoff, sewage from workforce and polluted discharge generated from the Project;
- (vii) provide an emission inventory on the quantities and characteristics of those existing and future pollution sources in the study area. Field investigation and laboratory test, shall be conducted as appropriate to fill relevant information gaps;
- (viii) report the adequacy of the existing sewerage and sewage treatment facilities for the handling, treatment and disposal of wastewater arising from the Project as required in section 3.4.7;
- (ix) identify and quantify the water quality impacts based on the findings and recommendations from the Sewerage and Sewage Treatment Implications Assessment under section 3.4.7. The water quality concerns shall include, but not limited to, possible sewage overflow or emergency discharge due to capacity constraints of the sewerage system, and emergencies arising from the Project;
- (x) predict and quantify the impacts on the water system(s) include water quality and the effects on the sensitive receivers brought about by those alternations and changes identified in (v) to (ix) above. The prediction shall take into account and include possible different construction and operation stages of the Project;
- (xi) assess the cumulative impacts due to other related concurrent and planned projects, activities or pollution sources within the study area that may have a bearing on the environmental acceptability of the Project;
- (xii) analyze the provision and adequacy of existing and planned future facilities to reduce pollution arising from the point and non-point sources identified in (vi) above;
- (xiii) develop effective infrastructure upgrading or provision, contingency plan, water pollution prevention and mitigation measures to be implemented during construction and operation stages, including emergency sewage discharge in the case of sewage treatment works and sewage pumping stations, so as to reduce the water quality impacts to within standards. Requirements to be incorporated in the Project contract document shall also be proposed;
- (xiv) investigate and develop best management practices to reduce storm water and non-point source pollution as appropriate; and
- (xv) evaluate and quantify residual impacts on water system(s) and the sensitive receivers with regard to the appropriate water quality objectives, criteria, standards or guidelines.

Appendix D2**Requirements for Assessment of Sewerage and Sewage Treatment Implication**

1. The Applicant shall study and assess the need and impacts of discharging sewage to the existing/planning sewerage systems in Chai Wan. The assessment shall include the following:
 - (i) investigation and review of the existing, committed and planned sewerage networks, sewage treatment and disposal facilities;
 - (ii) assessment of the sewerage system of the Project, including sewage and wastewater treatment and disposal facilities, taking into account the projected flows of the Project;
 - (iii) assessment of the impact of the Project on the existing, committed and planned sewerage networks, sewage treatment and disposal facilities;
 - (iv) identification of mitigating works required for the sewerage networks, sewage treatment and disposal facilities, and assessment of the resultant impacts after incorporation of proposed mitigating works; and;
 - (v) arrangement for the provision, and obtaining the agreement of the relevant government departments/authorities, to the mitigating works in a timely manner, as appropriate, development of the implementation programme and preparation of the cost estimates.

Appendix E1**Requirements for Assessment of Waste Management Implication**

The assessment of waste management implications shall cover the following:

1. Analysis of Activities and Waste Generation

- (i) The Applicant shall identify the quantity, quality and timing of the waste arising as a result of the construction and operation activities of the Project based on the sequence and duration of these activities, e.g. any dredged/excavated sediment/mud, construction and demolition materials (C&DM), chemical wastes and other wastes which will be generated during construction and operational stages.
- (ii) The Applicant shall adopt appropriate design, general layout, construction methods and programme to minimize the generation of public fill/inert C&DM and maximize the use of public fill/inert C&DM for other construction works.

2. Proposal for Waste Management

- (i) Prior to considering the disposal options for various types of wastes, opportunities for reducing waste generation, on-site or off-site re-use and recycling shall be fully evaluated. Measures which can be taken in planning and design stages e.g. by modifying the design approach and in the construction stage for maximizing waste reduction shall be separately considered.
- (ii) After considering the opportunities for reducing waste generation and maximizing re-use, the types and quantities of the wastes required to be disposed of as a consequence shall be estimated and the disposal methods/options for each type of wastes shall be described in detail. The disposal methods/options recommended for each type of wastes shall take into account of the result of the assessment in (iv) below.
- (iii) The EIA report shall also state clearly the transportation routings and the frequency of the trucks/vessels involved, any barging point or conveyor system to be used, the stockpiling areas and the disposal outlets for the waste identified.
- (iv) The impact caused by handling (including stockpiling, labelling, packaging and storage), collection, transportation and re-use/disposal of wastes shall be addressed in detail and appropriate mitigation measures shall be proposed. This assessment shall cover the following areas :
 - potential hazard;
 - air and odour emissions;
 - noise;
 - wastewater discharge; and
 - public transport.

3. Excavation/Dredging and Dumping

- (i) The Applicant shall identify and quantify all excavation/dredging, excavated/dredged sediment/mud transportation and disposal activities and requirements. Potential dumping ground to be involved shall also be identified.

Appropriate field investigation, sampling and chemical and biological laboratory tests to characterize the sediment/mud concerned shall be conducted. The ranges of parameters to be analyzed; the number, type and methods of sampling; sample preservation; chemical and biological laboratory test methods to be used shall be agreed with the Director (with reference to Section 4.4.2(c) of the TM) prior to the commencement of the tests and document in the EIA report for consideration. The categories of sediment/mud which are to be disposed of in accordance with a permit granted under the Dumping at Sea Ordinance (DASO) shall be identified by both chemical and biological tests and their quantities shall be estimated. If the presence of any serious contamination of sediment/mud which requires special treatment/disposal is confirmed, the Applicant shall identify the most appropriate treatment and/or disposal arrangement and demonstrate its feasibility. The Applicant shall provide supporting document, such as agreement by the relevant facilities management authorities, to demonstrate the viability of any treatment/disposal plan.

- (ii) The Applicant shall identify and evaluate the best practical excavation/dredging methods to minimize dredging/excavation and dumping requirements based on the criterion that existing sediment/mud shall be left in place and not to be disturbed as far as possible.

Appendix E2**Requirements for Land Contamination Assessment**

1. The Applicant shall identify all land lots and sites within the Project boundary, which, due to their past or present land uses, are potential contaminated sites. A detailed account of the present activities and past land use history in relation to possible land contamination shall be provided.
2. If any potential contaminated land lots/sites are identified, the Applicant shall carry out the land contamination assessment in accordance with sections 3.1 and 3.2 of Annex 19 of the TM accordingly.
3. The list of potential contaminants which are anticipated to be found in these potential contaminated sites shall be provided and the relevant remediation options shall be discussed.

Appendix F**Requirements for Landscape and Visual Impact Assessments**

1. The Applicant shall review relevant outline development plan(s), outline zoning plan(s), layout plan(s) or planning briefs and studies which may identify areas of high landscape value, e.g. green belt and woodland areas with sensitive landscape designations and visually sensitive areas/receivers. Any guidelines on landscape strategy, landscape framework, urban design concept, building height profiles, designed view corridors, open space network and landscape link that may affect the appreciation of the Project shall also be reviewed. The aim is to gain an insight to the future outlook of the area affected so as to assess whether the Project can fit into the surrounding setting. Any conflict with statutory town plan(s) shall be highlighted and appropriate follow-up action shall be recommended.
2. The Applicant shall describe, appraise, analyze and evaluate the existing and planned landscape resources and character of the study area. e.g. vegetation, woodland, streams and topography, etc. A system shall be derived for judging landscape impact significance as required under the TM. Annotated oblique aerial photographs and plans of suitable scale showing the baseline landscape resources and landscape character areas and mapping of impact assessment shall be extensively used to present the findings of impact assessment. Descriptive text shall provide a concise and reasoned judgment from a landscape and visual point of view. The assessment shall be particularly focused on the sensitivity of the landscape framework and its ability to accommodate change. The Applicant shall identify the degree of compatibility of the Project with the existing and planned landscape settings. The landscape impact assessment shall quantify potential landscape impact as far as possible, so as to illustrate the significance of such impact arising from the Project. Clear mapping of the landscape impact is required. A broad brush tree survey to identify dominant tree species, maturity, rarity and any plant species of conservation interest, etc. should be conducted within the study area to provide baseline information on the landscape resources and landscape character areas and the impacts on existing trees shall be summarized. Cumulative landscape and visual impacts of the Project with other existing, committed and planned developments in the study area shall be assessed.
3. The Applicant shall assess the visual impacts of the proposed Project. Clear illustration including mapping of visual impact is required. The assessment shall adopt a systematic methodology and include the following:
 - (i) identification and plotting of visual envelope of the Project;
 - (ii) identification of the key groups of existing and planned sensitive receivers within the visual envelope and their views at both ground level and elevated vantage points. Among other receivers, sensitive receivers shall include, but not limited to, nearby residents and villagers. Both long distance view and short distance view shall be covered in the assessment;
 - (iii) assessment for evaluating visual impacts, by taking into account the factors affecting the sensitivity of receivers (including value and quality of existing views, availability and amenity alternative views, type and estimated number of receiver population, duration of view and degree of visibility) and the magnitude of change of view (including compatibility of the project with the surrounding landscape and planned setting, duration of impacts under construction and operation phases, scale of development, reversibility of change, viewing distance and potential blockage of view).

The visual impacts of the Project with and without mitigation measures shall also be included so as to demonstrate the effectiveness of the proposed mitigation measures; and

- (iv) clear evaluations and explanation with supportive arguments of all relevant factors considered in arriving the significance thresholds of visual impacts.
4. The Applicant shall evaluate the merit and demerit of preservation in totality, in parts or total destruction of existing landscape and the establishment of a new landscape character area. Alternative location, site layout, development options, design and construction method that would avoid or reduce the identified landscape and visuals impacts shall first be considered and be evaluated for comparison before adopting other mitigation or compensatory measures to alleviate the impacts. The mitigation measures proposed shall not only be concerned with damage reduction but shall also include consideration of potential enhancement of the existing landscape and visual quality. The Applicant shall recommend mitigation measures to minimize the adverse effects identified above, including provision of a master landscape design.
 5. The mitigation measures shall also include the preservation of vegetation, transplanting of trees of good amenity value, provision of screen planting, re-vegetation of disturbed lands, compensatory planting, re-provisioning of amenity areas and open spaces, design of structure, provision of finishes to structure, colour scheme and texture of material used and any measures to mitigate the disturbance of the existing land use. Parties shall be identified for the on-going management and maintenance of the proposed mitigation works to ensure their effectiveness throughout the operation phase of the Project. A practical programme and funding proposal for the implementation of the recommended measures shall be provided.
 6. Annotated illustration such as coloured perspective drawings, plans and section/elevation diagrams, oblique aerial photographs, photographs taken at vantage points and computer-generated photomontage, particularly from but not limited to the most severely affected vantage points shall be adopted to illustrate the significance of the landscape and visual impacts of the Project in four stages i.e. existing conditions, unmitigated impacts at Day 1, mitigated impacts at Day 1 and residual impact at Year 10. Options of design schemes should be illustrated with photomontages to show the visual impact on the surrounding areas. True colour samples may be requested if found necessary and appropriate. Technical details in preparing the illustration, which may need to be submitted for verification of accuracy of the illustration shall be recorded. Computer graphics shall be compatible with Microstation DGN file format.

Appendix G

Implementation Schedule

EIA Ref.	EM&A Log Ref.	Environmental Protection Measures	Location/Duration of measures/ Timing of completion of measures	Implementation Agent	Implementation Stage **				Relevant Legislation & Guidelines
					Des	C	O	Dec	

** Des=Design; C=Construction; O=Operation; Dec=Decommissioning

Appendix H**Requirements for EIA Report Documents**

1. The Applicant shall supply the Director with the following number of copies of the EIA report and the executive summary:
 - (i) 30 copies of the EIA report and 50 copies of the executive summary (each bilingual in both English and Chinese) as required under section 6(2) of the EIAO to be supplied at the time of application for approval of the EIA report.
 - (ii) When necessary, addendum to the EIA report and the executive summary submitted in item (i) above as required under section 7(1) of the EIAO, to be supplied upon advice by the Director for public inspection.
 - (iii) 20 copies of the EIA report and 50 copies of the executive summary (each bilingual in both English and Chinese) with or without Addendum as required under section 7(5) of the EIAO, to be supplied upon advice by the Director for consultation with the Advisory Council on the Environment.
2. In addition, to facilitate public inspection of EIA report via EIAO Internet Website, the Applicant shall provide electronic copies of both the EIA report and executive summary prepared in Hyper Text Markup Language (HTML) (version 4.0 or later) and in Portable Document Format (PDF version 1.3 or later), unless otherwise agreed by the Director. For the HTML version, a content page capable of providing hyperlink to each section and sub-section of the EIA report and executive summary shall be included in the beginning of the document. Hyperlinks to figures, drawings and tables in the EIA report and executive summary shall be provided in the main text from where respective references are made. Graphics in the report shall be in interlaced GIF format unless otherwise agreed by the Director.
3. The electronic copies of the EIA report and the executive summary shall be submitted to the Director at the time of application for approval of the EIA report.
4. When the EIA report and the executive summary are made available for public inspection under section 7(1) of the EIAO, the content of the electronic copies of the EIA report and the executive summary must be the same as the hard copies and the Director shall be provided with the most updated electronic copies.
5. To promote environmentally friendly and efficient dissemination of information, both hardcopies and electronic copies of future EM&A reports recommended by the EIA study shall be required and their format shall be agreed by the Director.