ENVIRONMENTAL IMPACT ASSESSMENT ORDINANCE (CAP. 499)
SECTION 5(7)

ENVIRONMENTAL IMPACT ASSESSMENT STUDY BRIEF NO. ESB-272/2014

PROJECT TITLE: SUNNY BAY DEVELOPMENT
(hereinafter known as the "Project")

NAME OF APPLICANT: CIVIL ENGINEERING AND DEVELOPMENT DEPARTMENT
(hereinafter known as the "Applicant")

1. BACKGROUND

1.1 An application (No. ESB-272/2014) 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 29 April 2014 with a Project Profile (No. PP-507/2014) (hereinafter referred as the "Project Profile").

1.2 The Applicant proposes to conduct a planning and engineering feasibility study, "Sunny Bay Development" (the Project), to examine the future land uses and the potential of developing Sunny Bay for tourism, entertainment and leisure uses. The key objective is to formulate a Recommended Outline Development Plan (RODP) and layout plans of the development, including the phased implementation mechanism. The Potential Development Area (PDA) of this Project covers a total area of about 100 hectare, including about 80 hectare of reclamation. The PDA is shown in the figure attached in the Project Profile which is reproduced as shown in Appendix A of this EIA Study Brief. The Applicant indicates in the Project Profile that the extent of the PDA and the reclamation are tentative and subject to adjustment and revision during the course of the study.

1.3 To remove the constraints imposed by the existing Government Flying Services (GFS) helicopter flight path on the new town extension area in Tung Chung East and the future developments along the coastline of North Lantau, the Project will also explore the technical and engineering feasibility of re-provisioning the GFS helicopter base at Sunny Bay area.

1.4 The Project is a designated project under Item 1 of Schedule 3 of the EIAO, which specifies that an "*Engineering feasibility study of urban development projects with a study area covering more than 20 ha or involving a total population of more than 100,000*". The Project also includes individual work items that may fall under Schedule 2 of the EIAO to be identified during the course of the EIA study. Based on the information provided in the Project Profile, the works identified as Designated Projects in Part I, Schedule 2 of the EIAO, are listed as follows:

(i) Item A.1 – A road which is expressway, trunk road, primary distributor road or district distributor road including new roads, and major extensions or improvements to existing roads;
(ii) Item C.1 – Reclamation works (including associated dredging works) more than 5 ha in size;
(iii) Item C.12 – A dredging operation exceeding 500,000 m^3;
(iv) Item F.3 – A sewage pumping stations with an installed capacity of more than 2,000 m^3 per day and a boundary of which is less than 150m from an existing or planned seawater intake point;

(v) Item F.2 – Sewage treatment works with an installed capacity of more than 5,000 m^3 per day and a boundary of which is less than 200 m from an existing or planned seawater intake point; and

(vi) Item F.6 – A sewage submarine outfall.

1.5 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.

1.6 The purpose of this EIA study is to provide information on the environmental impacts arising from the construction and operation of the developments and associated activities that will take place concurrently. This information will contribute to decisions by the Director on:

(i) the acceptability of any adverse environmental consequences that are likely to arise as a result of the Project and its staged implementation;

(ii) the conditions and requirements for the design, construction and operation of the Project under the EIAO or other planning mechanisms to mitigate against adverse environmental consequences; and

(iii) the acceptability of residual impacts, if any, 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 potentially affected uses;

(iv) to identify and quantify any potential losses or damage to flora, fauna and natural habitats;

(v) to identify any negative impacts on sites of cultural heritage and to propose measures to mitigate these impacts;

(vi) to propose the provision of infrastructure or mitigation measures to minimize pollution, environmental disturbance and nuisance during construction and operation of the project(s);

(vii) to investigate the feasibility, effectiveness and implications of the proposed mitigation measures;

(viii) to identify, predict and evaluate the residual (i.e. after practicable mitigation) environmental impacts and the cumulative effects expected to arise during the construction and operation phases of the Project in relation to the sensitive receivers and potential affected uses;

(ix) to identify, assess and specify methods, measures and standards, to be included in the detailed design, construction and operation of the Project which are necessary to mitigate these residual environmental impacts and cumulative effects and reduce them to acceptable levels;

(x) to design and specify the environmental monitoring and audit requirements; and

(xi) 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

3.1.1 The purpose of this EIA Study Brief is to set out the purposes and objectives of the EIA study, the scope of environmental issues which shall be addressed, the requirements that the EIA study shall need to fulfil, and the necessary procedural and reporting requirements. The Applicant shall demonstrate in the EIA report that the criteria in the relevant sections of the Technical Memorandum on Environmental Impact Assessment Process of the EIAO (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 mentioned in sections 1.2 to 1.4 of this EIA Study Brief. For the purpose of assessing whether the environmental impacts shall comply with the criteria of TM, the EIA study shall address the key issues described below, together with any other key issues identified during the course of the EIA study:

(i) comparison of the environmental benefits and dis-benefits of different development options of the Project with a view to deriving preferred development option(s) for Sunny Bay Development that would avoid adverse environmental impact;

(ii) potential air quality impact on air sensitive receivers (ASRs) due to the construction and operation of the Project, including dust, gaseous emissions and odour (if applicable);

(iii) potential noise impact on noise sensitive receivers (NSRs) due to the construction and operation of the Project, including impact from construction equipment during construction phase and impacts from helicopters take-off, approach and ground base operation associated with the re-provisioned GFS helicopter base, road traffic and fixed noise sources;

(iv) potential water quality impact caused by the Project and associated works such as site formation, reclamation and dredging (if any) and other marine works during construction and sewerage provisions during operation of the Project;

(v) potential sewerage and sewage treatment implications to cope with discharges from population and any development from the Project, taking into account the capacity requirements for the existing, committed and planned developments within the same sewage catchment;

(vi) potential waste management issues and impacts arising from the construction and operation of the Project;

(vii) potential land contamination arising from construction and operation of the Project, in particular from the past shipyard operation and decontamination facility at To Kau Wan;

(viii) potential impact on recognized sites of conservation importance and other ecologically sensitive areas in the PDA and its vicinity, due to the construction and operation of the Project;

(ix) potential fisheries impacts, in particular on fishing grounds, spawning and nursery grounds, and fisheries activities, due to the construction and operation of the Project;

(x) potential landscape and visual impacts due to the construction and operation of the Project;

(xi) potential impacts on sites of cultural heritage due to construction and operation of the Project;

(xii) potential hazard to life impact in case there are any refuelling facilities for the re-provisioned GFS helicopter base;

(xiii) potential cumulative environmental impacts of the Project, through interaction or in combination with other existing, committed and planned projects, and that the impacts of these projects may have a bearing on the environmental acceptability of the Project. Consideration shall be given to account for impacts from potential concurrent projects, including the planned Tung Chung New Town Extension, Expansion of Hong Kong International Airport into 3-Runways system, Hong Kong Boundary Crossing Facilities, Hong Kong Link Road and Tuen Mun-Chek Lap Kok Link etc.; and

(xiv) identification of individual project(s) proposed under the Project that fall under Schedule 2 of the EIAO; to ascertain whether the findings of this EIA study have been adequately addressed the environmental impacts of those project(s); and where necessary to identify the outstanding issues that need to be addressed in any further detailed EIA study.

3.3 Consideration of Alternatives

3.3.1 Need of the Project

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

3.3.2 Consideration of Different Development Option(s) and Land Uses

The Applicant shall consider alternative development option(s) for the Project, provide justifications regarding how the proposed scheme 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 adverse environmental effects.

3.3.3 Consideration of Alternative Construction Methods

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 for the Project (if any). A comparison of the environmental benefits and dis-benefits of applying different construction methods shall be made.

3.3.4 Selection of Preferred Scenario

The Applicant shall, taking into consideration of the findings in sections 3.3.2 and 3.3.3 above, recommend and justify the adoption of the preferred scenario(s) and describe the part that environmental factors played in arriving at the final selection.

3.4 Technical Requirements

The Applicant shall conduct the EIA study to address the environmental aspects of the Project 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 EIA report shall include the construction and operational programme and methodologies for assessing environmental impacts of the Project. The EIA report shall provide the time frame, staged implementation programme, and works programmes of the Project and other concurrent projects, and for assessing the cumulative environmental impacts from the Project and the interacting projects as identified in the EIA study.

The EIA study shall follow the technical requirements specified below and in the Appendices of this EIA study brief.

3.4.1 Air Quality Impact

3.4.1.1 The Applicant shall follow the criteria and guidelines as stated in section 1 of Annexes 4 and 12 of the TM respectively, for evaluating and assessing air quality impact.

3.4.1.2 The assessment area for the air quality impact assessment shall be defined by a distance of 500 metres from the boundary of the PDA and the works of the Project within the Study Area as identified in the EIA, which shall be extended to include major existing, committed and planned air pollutant emission sources, including but not limited to helicopter and aircraft emissions, marine vessel emissions, traffic emissions, identified to have a bearing on the environmental acceptability of the Project. The assessment shall include the existing, committed and planned sensitive receivers within the assessment area as well as any proposed air sensitive receivers within the PDA as identified in the EIA. The assessment shall be based on the best available information at the time of the assessment. Odour

impact from the operation of new sewage treatment facility proposed under this Project (if any) shall also be assessed.

3.4.1.3 The assessment of the air quality impact arising from the construction and operation of the Project shall follow the detailed technical requirements given in Appendix B of this EIA Study Brief.

3.4.2 Noise Impact

3.4.2.1 The Applicant shall follow the criteria and guidelines for evaluating and assessing noise impact as stated in Annexes 5 and 13 of the TM respectively.

3.4.2.2 Assessment shall include construction noise, road traffic noise, fixed noise sources, helicopter noise impact assessment of the existing, committed and planned NSRs 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 the Lands Department and any land use and development applications approved by the Town Planning Board, in the vicinity of the project.

3.4.2.3 If noise sensitive uses are to be proposed inside the PDA, the applicant shall refer to the existing and new Noise Exposure Forecast (NEF) 25 contours established under the planned Expansion of Hong Kong International Airport into a Three-Runway System project when planning the land use options. In addition, impact from the existing railway lines upon the proposed noise sensitive uses within the PDA (if any) shall also be assessed.

3.4.2.4 The noise impact assessment of the Project shall follow the detailed technical requirements given in Appendix C of this EIA Study Brief.

3.4.3 Water Quality Impact

3.4.3.1 The Applicant shall follow the criteria and guidelines for evaluating and assessing water pollution as stated in Annexes 6 and 14 of the TM respectively.

3.4.3.2 The assessment area for the water quality impact assessment shall include the North Western Water Control Zone and Western Buffer Water Control Zone as designated under the Water Pollution Control Ordinance (Cap. 358) and the water sensitive receivers in the vicinity of the Project. The assessment area can be extended to include other areas such as stream courses, 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.

3.4.3.3 The water quality impact assessment for the construction and operation of the Project shall follow the detailed technical requirements given in Appendix D of this EIA Study Brief.

3.4.4 Sewerage and Sewage Treatment Implications

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

3.4.4.2 The assessment of the sewerage and sewage treatment implications for the Project shall follow the detailed technical requirements given in Appendix E of this EIA Study Brief.

3.4.5 Waste Management Implications

3.4.5.1 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 respectively.

3.4.5.2 The assessment of the waste management implications arising from the construction and operation of the Project shall follow the detailed technical requirements given in Appendix F of this EIA Study Brief.

3.4.6 Land Contamination

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

3.4.6.2 The assessment of the potential land contamination issue(s) shall follow the detailed requirements given in Appendix G of this EIA Study Brief.

3.4.7 Ecological Impact (Terrestrial and Marine)

3.4.7.1 The Applicant shall follow the criteria and guidelines for evaluating and assessing ecological impact as stated in Annexes 8 and 16 of the TM respectively.

3.4.7.2 The assessment area for the terrestrial ecological impact assessment shall include areas within 500 metres from the boundary of the PDA and areas likely to be impacted by the Project. For marine ecological impact assessment, the assessment area shall be the same as the assessment area for Water Quality Impact Assessment described in section 3.4.3.2 of this EIA Study Brief or the areas likely to be impacted by the Project.

3.4.7.3 The assessment of the ecological impact for the construction and operation of the Project shall follow the detailed technical requirements given in Appendix H of this EIA Study Brief.

3.4.8 Fisheries Impact

3.4.8.1 The Applicant shall follow the criteria and guidelines for evaluating and assessing fisheries impact as stated in Annexes 9 and 17 of the TM respectively.

3.4.8.2 The assessment area shall be the same as that for the water quality impact assessment. This assessment area shall be extended to include other areas if they are found also being impacted by the construction or operation of the Project during the course of the EIA study. Special attention should be given to loss or disturbance of fishing ground, fisheries habitat, spawning and nursery grounds, water quality deterioration at sensitive receivers such as fish culture zones or artificial reefs.

3.4.8.3 The fisheries impact assessment for construction and operation of the Project shall follow the detailed technical requirements given in Appendix I of this EIA Study Brief.

3.4.9 Landscape and Visual Impacts

3.4.9.1 The Applicant shall follow the criteria and guidelines for evaluating and assessing landscape and visual impacts as stated in Annexes 10 and 18 of the TM respectively, and

the EIAO Guidance Note No. 8/2010 "Preparation of Landscape and Visual Impact Assessment under the EIAO" and the report of "Landscape Value Mapping in HK".

3.4.9.2 The assessment area for the landscape impact assessment shall include landscape character areas and landscape resources within 500 metres from the boundary of the PDA and the works of the Project within the Study Area as identified in the EIA, while the assessment area for the visual impact assessment shall be defined by the visual envelope of the Project. The extent of the defined visual envelope shall be shown on a plan and documented in the EIA report.

3.4.9.3 The landscape and visual impact assessment for the construction and operation of the Project shall follow the detailed technical requirements given in Appendix J of this EIA Study Brief.

3.4.10 Impact of Cultural Heritage

3.4.10.1 The Applicant shall follow the criteria and guideline for evaluating and assessing the cultural heritage impacts as stated in Annexes 10 and 19 of the TM respectively.

3.4.10.2 A marine archaeological investigation (MAI) shall be conducted. It shall include area to be affected by the marine works of the Project. The marine archaeological investigation shall follow the detailed technical requirements given in Appendix K.

3.4.11 Impact of Hazard to Life

3.4.11.1 If jet fuel refuelling facilities are to be established for the re-provisioned GFS helicopter base, the Applicant shall follow the criteria for evaluating hazard to life as stated in section 2 of Annex 4 of the TM.

3.4.11.2 The hazard to life assessment, if needed, shall follow the detailed technical requirements given in Appendix L.

3.4.12 Environmental Monitoring and Audit (EM&A) Requirements

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

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

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

3.5 Presentation of Summary Information

3.5.1 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, the environmental benefits of environmental protection measures recommended and the efforts deployed in the various stages of the Project to minimise the environmental impacts arising from the Project.

3.5.2 Summary of Environmental Impacts

To facilitate 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 exceedance 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.

3.5.3 Documentation of Key Assessment Assumptions and Limitations of Assessment Methodologies

To facilitate 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 methodologies/assumptions. 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). The supporting documents shall be provided in the EIA report.

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 this EIA Study Brief, the Applicant shall apply to the Director for a fresh EIA study brief before commencement of the EIA study.

5. REPORTING 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. The Applicant shall accompany with the submission of the EIA report a summary pointing out where in the EIA report the respective requirements of this EIA Study Brief and TM (in particular Annexes 11 and 20) have been addressed and fulfilled.

5.2 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 N 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 section 1.2 of this EIA Study Brief and in the Project Profile (No. PP-507/2014), 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 this EIA Study Brief, the Applicant shall apply to the Director for a fresh EIA study brief.

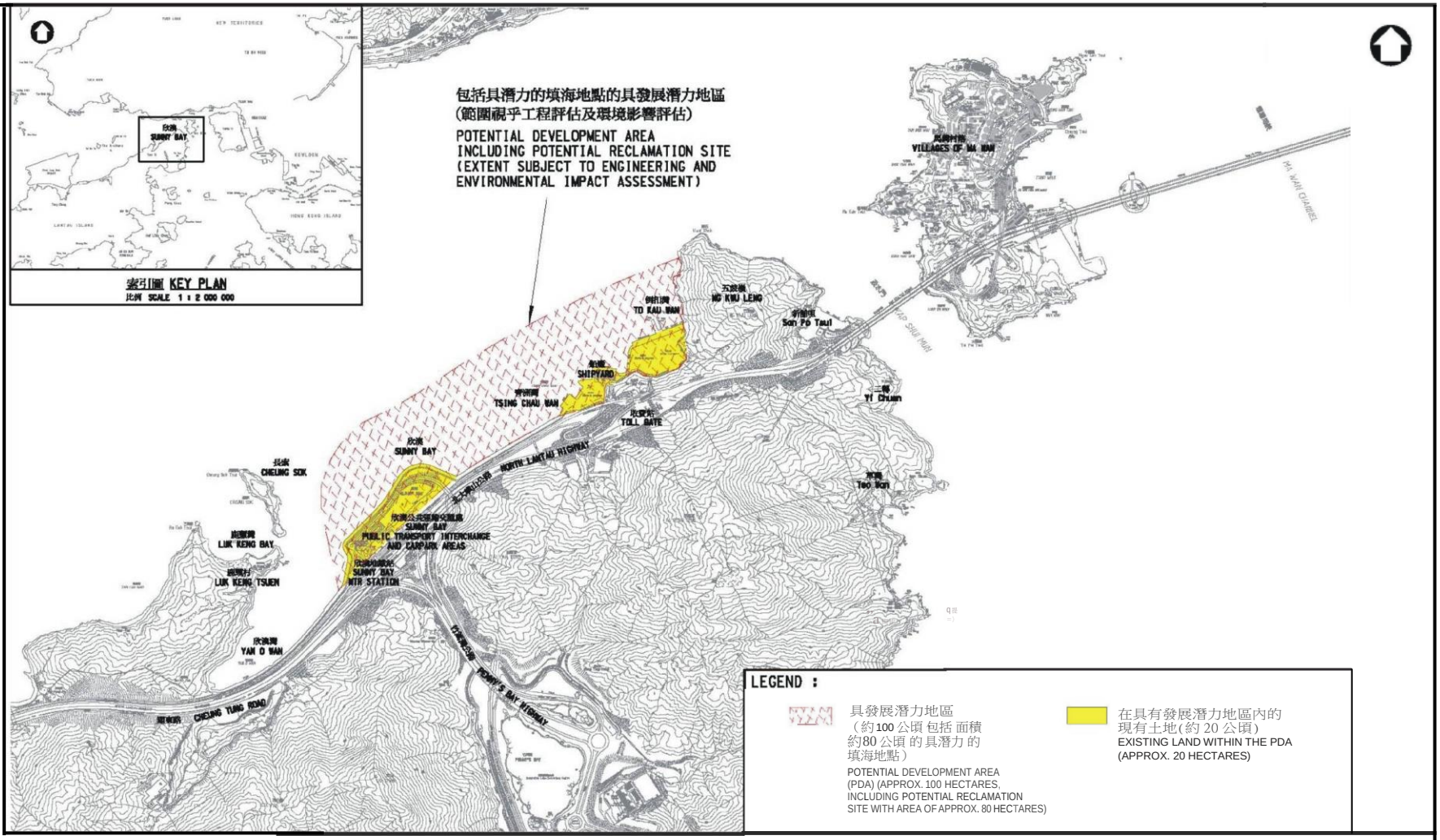
7. LIST OF APPENDICES

7.1 This EIA Study Brief includes the following appendices:

Appendix A	–	Project Location Plan
Appendix B	–	Requirements for Air Quality Impact Assessment
Appendix B-1	–	Air Quality Modelling Guidelines
Appendix C	–	Requirements for Noise Impact Assessment
Appendix D	–	Requirements for Water Quality Impact Assessment
Appendix D-1	–	Hydrodynamic and Water Quality Modelling Requirements
Appendix E	–	Requirements for Assessment of Sewerage and Sewage Treatment Implications
Appendix F	–	Requirements for Assessment of Waste Management Implications
Appendix G	–	Requirements for Land Contamination Assessment
Appendix H	–	Requirements for Ecological Impact Assessment (Terrestrial and Marine)
Appendix I	–	Requirements for Fisheries Impact Assessment
Appendix J	–	Requirements for Landscape and Visual Impact Assessment
Appendix K	–	Requirements for Cultural Heritage Impact Assessment
Appendix K-1	–	Guidelines for Marine Archaeological Investigation (MAI)
Appendix L	–	Requirements for Hazard-to-Life Assessment
Appendix M	–	Implementation Schedule of Recommended Mitigation Measures
Appendix N	–	Requirements for EIA Report Documents

--- END OF EIA STUDY BRIEF ---

June 2014
Environmental Assessment Division
Environmental Protection Department



Project Title : Sunny Bay Development
工程項目名稱：欣澳發展計劃

Location of Project
項目位置

(Plan originated from Figure I of Application for EIA Study Brief no.: ESB-272/ 2014)
（圖則源自於用以申請評環研究概要編號 ESB-272/2014 圖 1)

Environmental Protection Department **環境保護署**	EIA Study Brief No.: ESB-272/ 2014 環評研究概要編號：ESB-272 / 2014	**Appendix A** **附錄 A**

Appendix B

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 both construction and operational stages.

(ii) Provision of an account, where appropriate, of the consideration/measures that have 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 modes of operation to minimise the air quality impact during construction and operational stages of the Project.

(iii) Presentation of background air quality levels in the assessment area for the purpose of evaluating cumulative air quality impacts during construction and operational stages of the Project. If PATH 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, committed and planned 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, Layout Plans and other relevant published land use plans, including plans and drawings published by the 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. For phased development, the Applicant shall review the development programme and, where appropriate, to include occupiers of earlier phases as ASRs of construction phase impact if they may be affected by works of later phases.

(ii) Provision of a list of air pollutant emission sources, including any nearby emission sources which are likely to have impact related to the Project based on the analysis of the construction and operation activities in section 1 above. Examples of construction stage emission sources include stock piling, blasting, concrete batching, material handling and vehicular movements on unpaved haul roads on site, etc. Examples of operational stage emission sources include exhaust emissions from vehicles; marine vessels, emissions of gaseous pollutants from the GFS helicopter base operation; odour emissions from the proposed sewage treatment/disposal facilities etc. Confirmation regarding the validity of assumptions and the magnitude of activities (e.g. volume of construction material to be handled, odour emission strength, etc.) shall be obtained from the relevant government

departments/authorities and documented in the EIA report.

(iii) Identification of chimneys and obtainment of relevant chimney emission data in the assessment area by carrying out a survey for assessing the cumulative air quality impact of air pollutants through chimneys. The Applicant shall ensure and confirm the validity of the emission data used in their assessment. Any errors found in their emission data used may render the submission 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 impacts at the existing, committed and planned ASRs within the assessment area as well as at the proposed air sensitive uses within the PDA 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 identified within the assessment area and the PDA as defined in section 3.4.1.2 of this Study Brief despite the incorporation of the dust control measures proposed, a quantitative assessment shall 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 proposed control measures so as to ensure proper control of fugitive dust emission.

4. Operational Phase Air Quality Impact

(i) The Applicant shall assess the expected air pollutant concentrations at the ASRs identified within the assessment area and the PDA as defined in section 3.4.1.2 of this Study Brief based on an assumed reasonable worst-case scenario under normal operation conditions of the Project. The evaluation shall be based on the strength of the emission sources identified in section 2 above. The Applicant shall follow the methodology set out in section 5 below when carrying out the assessment.

(ii) A monitoring and audit programme for the operational phase of the Project shall be devised to verify the effectiveness of the proposed control measures 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 in Appendix B-1 while making allowance for the specific characteristic of the Project. This specific methodology

must be documented in such level of details, preferably associated 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, prior agreement from the Director on the specific modelling details.

(ii) For the purpose of assessing the compliance with the criteria as stated in Annex 4 of the TM, the Applicant shall identify the key/representative air pollution parameters (types of pollutants and the averaging time concentrations) to be evaluated and provide explanation for selecting these parameters for assessing the impact of the Project.

(iii) Calculation of the relevant pollutant emission rates for input to the model and a map showing the emission sources shall be presented in the EIA report. A summary table of the emission rates shall be presented in the EIA report. The Applicant shall ensure consistency between the text description and the model files at every stage of submission for review.

(iv) The air pollution impacts of future road traffic shall be calculated based on the highest emission strength from the road within the next 15 years upon commencement of operation of the proposed road. 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 any Fleet Average Emission Factors used in the assessment. If necessary, the Fleet Average Emission Factors shall be determined by a motor vehicle emission model such as EMFAC-HK model and documented in the EIA report. 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).

(v) For estimating the future background air quality, the Applicant may use EPD's PATH model or results, taking into consideration the major air pollutant emission sources projected for Hong Kong and nearby regions, or other models as agreed by the Director. Details of the adopted emission sources should be presented.

(vi) Ozone Limiting Method (OLM) or Discrete Parcel Method (DPM) or other appropriate method shall be used to estimate the conversion ratio of NOx to NO_2 if NO_2 has been identified as a key/representative air pollutant.

(vii) The Applicant shall calculate the cumulative air quality impact at the identified ASRs 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 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 shall be used to present pollution contours to allow buffer distance requirements to be determined properly.

(viii) 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.

(ix) 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. If noise enclosure is proposed, then portal emissions of the enclosed road section and air quality inside the enclosed road section shall also be addressed. The Applicant shall highlight clearly the locations and types of agreed noise mitigating measures (where applicable), be they noise barriers, road enclosures and their portals, and affected ASR's, on contour maps for reference.

6. Mitigation Measures for Air Quality Impact

Consideration for Mitigation Measures

(i) When the predicted air quality impact exceeds the criteria set in section 1 of Annex 4 in the TM, the Applicant shall consider mitigation measures to reduce the air quality impact on the identified ASRs. The feasibility, practicability, programming and effectiveness of the recommended mitigation measures shall be assessed and documented in the EIA report. Specific reasons for not adopting certain workable mitigation measures to reduce the air quality to a level meeting the criteria in the TM or to maximise the protection of the ASRs as far as possible should be clearly substantiated and documented in the EIA report.

Evaluation of Residual Air Quality Impact

(ii) Upon consideration of mitigation measures, if the mitigated air quality impact still exceeds the relevant criteria in Annex 4 of the TM, the Applicant shall identify, predict, evaluate the residual air quality impact in accordance with Section 4.4.3 of the TM and estimate the total number of existing dwellings, classrooms and other air sensitive elements that will be exposed to residual air quality impacts exceeding the criteria set in 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 calculations work sheets shall be submitted to the Director in electronic format together with the submission of the EIA report.

Appendix B-1

Air Quality Modelling Guidelines

[The information contained in this Appendix is meant to assist the Applicant in performing the air quality assessment. The Applicant must exercise professional judgement in applying this general information.]

The air quality modelling guidelines shall include the following guidelines as published on the website of the Environmental Protection Department:

(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 Impact (Revised);

(iii) Guidelines on the Use of Alternative Computer Models in Air Quality Assessment (Revised);

(iv) Guidelines on the Estimation of PM2.5 for Air Quality Assessment in Hong Kong; and

(v) Guidelines on the Estimation of 10-minute Average SO2 Concentration for Air Quality Assessment in Hong Kong

Appendix C

Requirements for Noise Impact Assessment

The noise impact assessment shall include the following:

1. Description of the Noise Environment

1.1 The Applicant shall describe the prevailing noise environment in the EIA report.

1.2 The Applicant shall conduct prevailing background noise surveys to determine the standards for evaluating noise impact from fixed noise sources. The respective noise environment should be documented in the EIA report.

2. Construction Noise Impact Assessment

2.1 Construction Noise Impact Assessment Methodology

2.1.1 The Applicant shall carry out construction noise impact assessment (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.

2.1.2 For ground-borne construction noise impact, the Applicant shall propose assessment methodology and computational model which shall be confirmed with the Director, with reference to Section 4.4.2 of the TM, prior to the commencement of the assessment. Site measurements at appropriate locations may be required in order to obtain the empirical input parameters required in the computational model.

2.2 Identification of Construction Noise Impact

2.2.1 *Identification of Assessment Area and Noise Sensitive Receivers*

(a) The Applicant shall propose the assessment area for agreement of the Director before commencing the assessment. The assessment area for the construction noise impact assessment shall generally include areas within 300 metres from the boundary of the PDA and the works of the Project.

(b) The Applicant shall identify all existing NSRs in the assessment area and select assessment points to represent identified NSRs for carrying out quantitative construction noise impact assessment described below.

(c) The assessment points shall be confirmed with the Director prior to the commencement of the quantitative construction noise impact assessment and may be varied subject to the best and latest information available during the course of the EIA study.

(d) 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. Photographs of existing NSRs shall be appended to the EIA report.

2.2.2 *Inventory of Noise Sources*

The Applicant shall identify and quantify an inventory of noise sources for representative

construction equipment for the purpose of construction noise impact assessment.

2.3 Prediction and Evaluation of Construction Noise Impact

2.3.1 *Phases of Construction*

The Applicant shall identify representative phases of construction that would have noticeable varying construction noise emissions at existing NSRs at the assessment area for agreement of the Director before commencing the construction noise impact assessment.

2.3.2 *Scenarios*

The Applicant shall quantitatively assess the construction noise impact, with respect to criteria set in Annex 5 of the TM, of unmitigated scenario and mitigated scenario at different phases of construction of the Project.

2.3.3 *Prediction of Noise Impact*

(a) The Applicant shall present the predicted noise levels in Leq (30 min) dB(A) at the selected assessment points at various representative floor levels (in m P.D.) on tables and plans of suitable scale.

(b) The assessment shall cover the cumulative construction noise impact resulting from the construction works of the Project and other concurrent projects identified during the course of the EIA study on existing NSRs within the assessment area.

(c) The potential construction noise impact under different phases of construction shall be quantified by estimating the total number of dwellings, classrooms and other noise sensitive receivers that will be exposed to noise impact exceeding the criteria set in Annex 5 in the TM.

(d) 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.

2.4 Mitigation of Construction Noise Impact

Direct Mitigation Measures

Where the predicted construction noise impact exceeds the criteria set in Table 1B of Annex 5, TM, the Applicant shall consider and evaluate direct mitigation measures including but not limited to, movable barriers, enclosures, quieter alternative methods, re-scheduling, restricting hours of operation of noisy tasks, etc. The feasibility, practicability, programming and effectiveness of the recommended mitigation measures shall be assessed. Any direct mitigation measures recommended should be well documented in the report. Specific reasons for not adopting certain direct mitigation measures to reduce the 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 substantiated and documented in the EIA report.

2.5 Evaluation of Residual Construction Noise Impact

Upon exhaust of direct mitigation measures, if the mitigated noise impact still exceeds the relevant criteria in Annex 5 of TM, the Applicant shall identify, predict, evaluate the residual construction noise impact in accordance with Section 4.4.3 of the TM and estimate the total number of existing dwellings, classrooms and other noise sensitive elements that will be exposed to residual noise impact exceeding the criteria set in Annex 5 in the TM.

3. Road Traffic Noise Impact Assessment

3.1 Road Traffic Noise Impact Assessment Methodology

3.1.1 The Applicant shall carry out road traffic noise impact assessment in respect of each road section (within the meaning of Items A.1, A.7 and A.8 under Part I, Schedule 2 of the EIAO and other road sections) and the noise levels from combined road sections of the Project at the NSRs in accordance with methodology in paragraphs 5.1 of Annex 13 of the TM.

3.1.2 *Input Data of Computational Model*
The Applicant shall provide the input data set of the road traffic noise computational model adopted in the assessment for various scenarios. The data shall be in electronic text file (ASCII format) containing road segments, barriers and noise sensitive receivers information. CD-ROM(s) containing the above data shall be submitted together with the EIA report.

3.2 Identification of Road Traffic Noise Impact

3.2.1 *Identification of Assessment Area and Noise Sensitive Receivers*

(a) The Applicant shall propose the assessment area for agreement of the Director before commencing the assessment. The assessment area for the road traffic noise impact shall generally include areas within 300 metres from the boundary of the PDA and the works of the Project.

(b) The Applicant shall identify all existing, committed and planned NSRs in the assessment area as well as planned noise sensitive uses (if any) within the PDA and select assessment points to represent identified NSRs for carrying out quantitative road traffic noise impact assessment described below.

(c) The assessment points shall be confirmed with the Director prior to the commencement of the quantitative road traffic noise impact assessment and may be varied subject to the best and latest information available during the course of the EIA study.

(d) 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. Photographs of existing NSRs shall be appended to the EIA report.

(e) For planned noise sensitive land uses without committed site layouts, the Applicant should use the relevant landuse and planning parameters and conditions to work out representative site layouts for road traffic noise impact assessment purpose. However, such parameters and conditions together with any constraints identified shall be confirmed with the relevant responsible parties including Planning Department and Lands Department.

3.2.2 *Inventory of Noise Sources*

(a) The Applicant shall analyse the scope of the proposed road alignment(s) to identify road sections for the purpose of road traffic noise impact assessment. Road sections to be included in road traffic noise impact assessment shall be confirmed with the Director prior to the commencement of the assessment.

(b) Validity of the traffic flow prediction of road sections for the purpose of road traffic noise impact assessment shall be confirmed with Transport Department and documented in the EIA report.

3.3 Prediction and Evaluation of Road Traffic Noise Impact

3.3.1 *Scenarios*

(a) The Applicant shall quantitatively assess the road traffic noise impact of the Project, with respect to the criteria set in Annex 5, TM, of unmitigated scenario and mitigated scenario at assessment year. The assessment year shall be made reference to Section 5.1 in Annex 13 of the TM.

(b) The Applicant shall provide the input data sets of traffic noise model prediction model adopted in the EIA study as requested by the Director for the following scenarios:

(i) unmitigated scenario at assessment year;
(ii) mitigated scenario at assessment year; and
(iii) prevailing scenario for indirect mitigated measures eligibility assessment.

3.3.2 *Prediction of Noise Impact*

(a) The Applicant shall present the predicted noise levels in L10 (1 hour) dB(A) at the selected assessment points at various representative floor levels (in m P.D.) on tables and plans of suitable scale.

(b) The assessment shall cover the cumulative road traffic noise impact resulting from the road traffic noise due to the Project and existing road network on existing, committed and planned NSRs within the assessment area and within PDA as identified in the EIA.

(c) The potential road traffic noise impact under different scenarios shall be quantified by estimating the total number of dwellings, classrooms and other noise sensitive receivers that will be exposed to noise impact exceeding the criteria set in Annex 5 in the TM.

3.4 Mitigation of Road Traffic Noise Impact

3.4.1 *Direct Mitigation Measures*

(a) Where the predicted road traffic noise impact exceeds the criteria set in Annex 5, TM, the Applicant shall consider and evaluate direct mitigation measures including but not limited to noise barrier/enclosure, screening by noise tolerant buildings etc. The feasibility, practicability, programming and effectiveness of the recommended mitigation measures shall be assessed. Any direct mitigation measures recommended should be well documented in the report. Specific reasons for not adopting certain direct mitigation measures to reduce the 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 documented in the EIA report.

(b) The total number of noise sensitive receivers that will be benefited from and be protected by the provision of direct mitigation measures should be provided. The total number of other noise sensitive receivers that will still be exposed to noise above the criteria with the implementation of all recommended direct mitigation measures shall be quantified.

(c) For planned noise sensitive uses which will still be affected even with practicable direct mitigation measures in place, the Applicant shall propose, evaluate and confirm the practicability of additional direct mitigation 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.

(d) 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.

3.4.2 *Indirect Mitigation Measures*

(a) Upon exhaust of direct mitigation measures, where the predicted road traffic noise impact still exceeds the criteria set in Table 1A of Annex 5, TM, the Applicant shall consider indirect mitigation measures in the form of window insulation and air-conditioning and evaluate in accordance with Section 6.2 in Annex 13 of TM.

(b) The Applicant shall identify and estimate the total number of existing dwellings, classrooms and other noise sensitive elements which may qualify for indirect mitigation measures, the associated costs and any implications for such implementation.

(c) For the purpose of determining eligibility of the affected premises for indirect mitigation measures, reference shall be made to methodology accepted by the recognized national/international organization or methodologies adopted for Hong Kong projects having similar issues on proposing an assessment methodology for determining eligibility of the indirect mitigation measures which shall be confirmed with the Director with reference to Section 4.4.2 of the TM, prior to the commencement of the assessment.

3.5 Evaluation of Residual Road Traffic Noise Impact

Upon exhaust of direct and indirect mitigation measures, if the mitigated noise impact still exceeds the relevant criteria in Annex 5 of TM, the Applicant shall identify, predict and evaluate the residual road traffic noise impact in accordance with Section 4.4.3 of the TM and Section 6.2 in Annex 13 of the TM.

4. Fixed Noise Sources Impact Assessment

4.1 Fixed Noise Sources Impact Assessment Methodology

The Applicant shall carry out fixed noise sources impact assessment from the Project in accordance with methodology in paragraph 5.2 of Annex 13 of the TM.

4.2 Identification of Fixed Noise Sources Impact

4.2.1 *Identification of Assessment Area and Noise Sensitive Receivers*

(a) The Applicant shall propose the assessment area for agreement of the Director before commencing the assessment. The assessment area for the fixed noise impact shall generally include areas within 300 metres from the boundary of the PDA and the works of the Project.

(b) The Applicant shall identify all existing, committed and planned NSRs in the assessment area as well as planned noise sensitive uses (if any) within the PDA and select assessment points to represent identified NSRs for carrying out fixed noise sources impact assessment described below.

(c) The assessment points shall be confirmed with the Director prior to the commencement of the quantitative fixed noise sources impact assessment and may be varied subject to the best and latest information available during the course of the EIA study.

(d) 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. Photographs of existing NSRs shall be appended to the EIA report.

(e) For planned noise sensitive land uses without committed site layouts, the Applicant should use the relevant landuse and planning parameters and conditions to work out representative site layouts for fixed noise sources assessment purpose. However, such parameters and conditions together with any constraints identified shall be confirmed with the relevant responsible parties including Planning Department and Lands Department.

4.2.2 *Inventory of Noise Sources*

(a) The Applicant shall identify and quantify an inventory of noise sources for fixed noise sources impact assessment. The inventory of noise sources shall include, but not limited to noise associated with the possible recreation, leisure and entertainment uses, any permanent and temporary industrial noise sources including ventilation system(s) of building(s) and/or tunnel(s), ventilation shafts of railway, sewage pumping station(s), seawater pumping station(s), helicopter base and electricity substation(s), etc.

(b) The Applicant shall provide document or certificate, accepted by recognized national/international organization, for the sound power level of each type of fixed noise sources.

(c) Validity of the inventory shall be confirmed with the relevant government departments/authorities and documented in the EIA report.

4.3 Prediction and Evaluation of Fixed Noise Sources Impact

4.3.1 *Scenarios*

(a) The Applicant shall quantitatively assess the fixed noise sources impact with respect to criteria set in Annex 5 of the TM, of unmitigated scenario and mitigated scenario at assessment years of various operation modes including, but not limited to,

(i) the worst operation mode which represents the maximum noise emission in

connection of identified noise sources of the Project; and
(ii) any other operation modes as confirmed with the Director.

(b) Validity of the above operational modes shall be confirmed with relevant departments/authorities and documented in the EIA report.

4.3.2 *Prediction of Noise Impact*

(a) The Applicant shall present the predicted noise levels in Leq (30 min) at the selected assessment points at various representative floor levels (in m P.D.) on tables and plans of suitable scale.

(b) The assessment shall cover the cumulative fixed noise sources impact associated with the operation of the proposed project on existing, committed and planned NSRs within the assessment area and within PDA as identified in the EIA.

(c) The potential fixed noise sources impact under different scenarios shall be quantified by estimating the total number of dwellings, classrooms and other noise sensitive receivers that will be exposed to noise impact exceeding the criteria set in Annex 5 in the TM.

4.4 Mitigation of Fixed Noise Sources Impact

Direct Mitigation Measures

Where the predicted fixed noise sources impact exceeds the criteria set in Table 1A of Annex 5, TM, the Applicant shall consider and evaluate direct mitigation measures including but not limited to noise barrier/enclosure, screening by noise tolerant buildings, etc. The feasibility, practicability, programming and effectiveness of the recommended mitigation measures shall be assessed. Any direct mitigation measures recommended should be well documented in the report. Specific reasons for not adopting certain direct mitigation measures to reduce the 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 substantiated and documented in the EIA report.

4.5 Evaluation of Residual Fixed Noise Sources Impact

Upon exhaust of direct mitigation measures, if the mitigated noise impact still exceeds the relevant criteria in Annex 5 of TM, the Applicant shall identify, predict, evaluate the residual fixed noise sources impact in accordance with Section 4.4.3 of the TM and estimate the total number of existing dwellings, classrooms and other noise sensitive elements that will be exposed to residual noise impact exceeding the criteria set in Annex 5 in the TM.

5. Helicopter Noise Assessment

5.1 Helicopter Noise Impact Assessment Methodology

The Applicant shall propose methodology and computational model for agreement of the Director, with reference to Section 4.4.2 of the TM, prior to the commencement of the assessment.

5.2 Identification of Helicopter Noise Impact

5.2.1 Identification of Assessment Area and Noise Sensitive Receivers

(a) The Applicant shall propose the assessment area for agreement of the Director before commencing the assessment. The assessment area for helicopter noise impact shall include area of existing, committed and planned NSRs under or near to the helicopter flight tracks in vicinity of the proposed helicopter base, particularly Ma Wan residents.

(b) The Applicant shall identify all existing, committed and planned NSRs in the vicinity and on the proposed Project in the assessment area.

(c) 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 helicopter noise assessment purpose. However, such assumptions together with any constraints identified shall be agreed by the relevant responsible parties including Planning Department and Lands Department.

5.2.2 Inventory of Noise Sources

(a) The Applicant shall identify and quantify an inventory of noise sources for helicopter noise impact assessment. The inventory of noise sources shall include, but not limited to, helicopter noise characteristics (such as data representing noise emission and performance etc.) for all potential helicopter operating at the existing and planned helicopter pad(s). The information of the helicopter noise characteristics shall be referred to a database accepted by recognized national/international organization, as agreed by the Director.

(b) Validity of the above data shall be confirmed with relevant government departments/authorities and documented in the EIA report.

5.3 Prediction and Evaluation of Helicopter Noise Impact

5.3.1 Scenarios

(a) The Applicant shall quantitatively assess the helicopter noise impact from the operation of the re-provisioned GFS helicopter base and related off site facilities (if any) during helicopters approaching and departure from the helicopter base, with respect to the criteria set in Annex 5 of the TM, of unmitigated scenario and mitigated scenario at assessment years of various operation modes including, but not limited to,
   (i) the worst operation mode which represents the maximum noise emission in connection of helicopter types, flight paths, flight frequency and flight hours, and;
   (ii) any other operation modes as agreed by the Director.

(b) Validity of the above operation modes shall be confirmed with relevant government departments/authorities and documented in the EIA report.

5.3.2 Prediction of Noise Impact

(a) The Applicant shall present the predicted helicopter noise impact in contours, with reference to criteria set in Annex 5 of the TM, including contours for each scenario assessed under various operation modes, on plans of suitable scale and documented in the EIA report. To determine the extent of the impact, the Applicant shall provide maps at an adequately detailed scale (not less than 1:5000) to show the contours.

(b) The assessment shall cover the cumulative helicopter noise impact associated with the operation of the existing and planned helicopter pad(s) and related off site facilities on existing, committed and planned NSRs within assessment area.

(c) The potential helicopter noise impact under different scenarios and operation modes shall be quantified by estimating the total number of dwellings, classrooms and other noise sensitive receivers that will be exposed to noise impact exceeding the criteria set in Annex 5 in the TM.

5.4 Mitigation of Helicopter Noise Impact

5.4.1 Direct Mitigation Measures

Where the predicted helicopter noise impact exceeds the criteria set in Annex 5, TM, the Applicant shall consider and evaluate direct mitigation measures including but not limited to noise barrier/enclosure, screening by noise tolerant buildings, etc. The feasibility, practicability, programming and effectiveness of the recommended mitigation measures shall be assessed. Any direct mitigation measures recommended should be well documented in the report. Specific reasons for not adopting certain direct mitigation measures to reduce the 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 substantiated and documented in the EIA report.

5.5 Evaluation of Residual Helicopter Noise Impact

Upon exhaust of direct mitigation measures, if the mitigated noise impact still exceeds the relevant criteria in Annex 5 of TM, the Applicant shall identify, predict and evaluate the residual helicopter noise impact in accordance with Section 4.4.3 of the TM and estimate the total number of existing dwellings, classrooms and other noise sensitive elements that will be exposed to residual noise impact exceeding the criteria set in Annex 5 of the TM.

6. Aircraft Noise Impact Assessment

6.1 Aircraft Noise Impact Assessment Methodology

The Applicant shall propose methodology for agreement of the Director, with reference to Section 4.4.2 of the TM, prior to the commencement of the assessment.

6.2 Identification of Aircraft Noise Impact

Identification of Assessment Area and Noise Sensitive Receivers

(a) The Applicant shall propose the assessment area for agreement of the Director before commencing the assessment.

(b) The Applicant shall identify all existing, committed and planned NSRs on the proposed Project in the assessment area for carrying out aircraft noise impact assessment described below.

(c) The Applicant shall consider and evaluate the constraints imposed by aircraft noise impact from operation of the HKIA and the planned Expansion of HKIA into a Three-Runway System in deriving land uses within the proposed Project.

(d) For planned noise sensitive land uses without committed site layouts, the Applicant should use the relevant land use and planning parameters and conditions to work out representative site layouts for aircraft noise assessment purpose. However, such

parameters and conditions together with any constraints identified shall be confirmed with the relevant responsible parties including Planning Department and Lands Department.

6.3 Prediction and Evaluation of Aircraft Noise Impact

6.3.1 The Applicant shall assess the potential aircraft noise impact arising from operation of the Hong Kong International Airport (HKIA) including the planned expansion of the HKIA into a three-runway system on the proposed Project with respect to the criteria set in Annex 5 of the TM. The assessment shall be based on the best available Noise Exposure Forecast (NEF) contours of the HKIA at the time of the assessment. The Applicant shall consult Civil Aviation Department for the information regarding Noise Exposure Forecast contours of the HKIA. Validity of the information shall be confirmed with Civil Aviation Department and documented in the EIA report.

6.3.2 *Prediction of Noise Impact*
Where the predicted aircraft noise impact exceeds the criteria set in Annex 5 in the TM, the Applicant shall quantify the aircraft noise impact by estimating the total number of dwellings, classrooms and other noise sensitive receivers that will be exposed to noise impact exceeding the criteria and shall made an evaluation of the anticipated changes and effects of aircraft noise impact in accordance with Section 4.3.1 (c) of TM.

6.3.3 To determine the extent of the impact, the Applicant shall provide maps at an adequately detailed scale (not less than 1:5000) to show the NEF contours and the relevant NSRs.

6.4 Mitigation of Aircraft Noise Impact

6.4.1 *Direct Mitigation Measures*

(a) The Applicant shall propose direct mitigation measures in all situations where the noise level exceedance are identified following the principle of section 6 of Annex 13 of the TM including but not limited to alternative land use arrangement. The feasibility, practicability, programming and effectiveness of the recommended mitigation measures shall be assessed. Any direct mitigation measures recommended should be well documented in the report. Specific reasons for not adopting certain direct mitigation measures to reduce the 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 substantiated and documented in the EIA report.

(b) The total number of noise sensitive receivers that will be benefited from and be protected by the provision of direct mitigation measures should be provided. The total number of other noise sensitive receivers that will still be exposed to noise above the criteria with the implementation of all recommended direct mitigation measures shall be quantified.

6.4.2 *Indirect Mitigation Measures*

(a) Upon exhaust of direct mitigation measures, where the predicted aircraft noise impact still exceeds the criteria set in Annex 5 of the TM, the Applicant shall consider indirect mitigation measures in the form of window insulation and air-conditioning and evaluate in accordance with Section 6.2 in Annex 13 of the TM.

(b) The Applicant shall identify and estimate the total number of existing dwellings, classrooms and other noise sensitive elements which may qualify for indirect

mitigation measures, the associated costs and any implications for such implementation.

6.5 Evaluation of Residual Aircraft Noise Impact

Upon exhaust of direct and indirect mitigation measures, if the mitigated noise impact still exceeds the relevant criteria in Annex 5 of TM, the Applicant shall identify, predict and evaluate the residual aircraft noise impact in accordance with Section 4.4.3 of the TM.

7. Rail Noise Assessment

7.1 Rail Noise Impact Assessment Methodology

If noise sensitive uses are planned within the PDA, the Applicant shall address the railway noise impact arising from the existing and planned railway lines including, but not limited to, Airport Express Line and Tung Chung Line on the planned NSRs within PDA. The Applicant shall propose methodology and computational model for agreement of the Director, with reference to Section 4.4.2 of the TM, prior to the commencement of the assessment.

7.2 Identification of Rail Noise Impact

7.2.1 Identification of Assessment Area and Noise Sensitive Receivers

(a) The Applicant shall propose the assessment area for agreement of the Director before commencing the assessment. The assessment area for the rail noise impact shall generally include areas within 300 metres from the boundary of the PDA and the works of the Project.

(b) The Applicant shall identify the NSRs within the PDA and select assessment points to represent identified NSRs for carrying out rail noise impact assessment described below.

(c) The assessment points shall be confirmed with the Director prior to the commencement of the quantitative rail noise impact assessment and may be varied subject to the best and latest information available during the course of the EIA study.

(d) A map showing the location and description such as building use and floor of each and every selected assessment point shall be given.

(e) For planned noise sensitive land uses without committed site layouts, the Applicant should use the relevant landuse and planning parameters and conditions to work out representative site layouts for rail noise assessment purpose. However, such parameters and conditions together with any constraints identified shall be confirmed with the relevant responsible parties including Planning Department and Lands Department.

7.2.2 Inventory of Noise Sources

(a) The Applicant shall identify and quantify an inventory of noise sources for rail noise impact assessment. The inventory of noise sources shall include, but not limited to, the existing and planned railways within assessment area.

(b) The Applicant shall allow for deterioration in rail and rolling stock condition from

brand new to an operating level in the prediction of noise impact.

(c) Validity of the inventory shall be confirmed with the railway operator and documented in the EIA report.

7.3 Prediction and Evaluation of Rail Noise Impact

7.3.1 Scenarios

(a) The Applicant shall quantitatively assess the rail noise impact, with respect to the criteria set in Annex 5 of the TM, of unmitigated scenario and mitigated scenario at assessment years of various operation modes including, but not limited to,
   (i) the worst operation mode which represents the maximum noise emission in connection of identified railways taking into account any other planned noise sources; and
   (ii) any other operation modes as confirmed with the Director.

(b) Validity of the above operational modes shall be confirmed with the rail operator and documented in the EIA report.

7.3.2 Prediction of Noise Impact

(a) The Applicant shall present the noise levels in Leq(30min) and Lmax during the day and at night at the NSRs at various representative floor levels (in mPD) on tables and plans of suitable scale.

(b) The assessment shall cover the cumulative rail noise impact associated with the existing and planned railways on the planned NSRs within the PDA.

(c) The potential rail noise impact under different scenarios and operation modes shall be quantified by estimating the total number of dwellings, classrooms and other noise sensitive receivers that will be exposed to noise impact exceeding the criteria set in Annex 5 in the TM.

7.4 Mitigation of Rail Noise Impact

Direct Mitigation Measures

Where the predicted rail noise impact exceeds the criteria set in Annex 5, TM, the Applicant shall consider and evaluate direct mitigation measures including but not limited to noise barrier/enclosure, screening by noise tolerant buildings, etc. The feasibility, practicability, programming and effectiveness of the recommended mitigation measures shall be assessed. Any direct mitigation measures recommended should be well documented in the report. Specific reasons for not adopting certain direct mitigation measures to reduce the 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 substantiated and documented in the EIA report.

7.5 Evaluation of Residual Rail Noise Impact

Upon exhaust of direct mitigation measures, if the mitigated noise impact still exceeds the relevant criteria in Annex 5 of TM, the Applicant shall identify, predict, evaluate the residual rail noise impact in accordance with Section 4.4.3 of the TM and estimate the total number of existing dwellings, classrooms and other noise sensitive elements that will be exposed to residual noise impact exceeding the criteria set in Annex 5 in the TM.

Appendix D

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 by appropriate mathematical modelling and/or other techniques proposed by the Applicant and approved by the Director. The mathematical modelling requirements are set out in Appendix D-1. Possible impacts due to the reclamation, dredging, fill extraction, backfilling, transportation and disposal of dredged materials, other marine works activities, effluent discharge, thermal/cooling water and biocide discharge, discharge including emergency overflow from the sewage pumping stations and sewage treatment plant (if any), and site runoff shall include changes in hydrology, flow regime, sediment erosion and deposition patterns, morphological change of seabed profile, shoreline change, water and sediment quality, marine and freshwater organisms/community. The prediction shall include possible different construction stages or sequences of the Project. Affected sensitive receivers shall be identified by the assessment tool with indications of degree of severity.

3. The assessment shall include, but not limited to the following:

   (i) the water quality impacts of the site run-off generated and marine works including but not limited to impacts on suspended solid level, dissolved oxygen and contaminant release, during the construction stage;

   (ii) the water quality impacts of road runoff containing oil/grease and suspended solids during the operational stage; and

   (iii) the water quality impacts on fish culture zones, corals, mangroves, seagrasses, horseshoe crab habitats, beaches, seawater intake points, river courses, drainages and other water sensitive receivers around the project sites.

   (iv) the water quality impacts of emergency discharge from the proposed sewage pumping station, emergency discharge and discharge under normal operation from the proposed sewage treatment plant during operation stage of the Project, which shall include the impact on the receiving water bodies and water sensitive receivers due to the normal and emergency discharge;

   (v) the water quality impacts of chemical spillage during construction and operation stages of the Project in particular the accidental spillage associated with transfer and storage of chemicals during re-provision and operation of the GFS helicopter base; and

   (vi) the water quality impacts due to construction and operation of the new submarine sewage outfall including the need for any maintenance works of the outfall.

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, 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 any alteration of any water courses, natural streams, ponds, change of water holding/flow regimes, change of catchment types or areas and any other hydrological changes in the study area;

(vii) 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 future occupants, cooling water discharge subject to future land use and other polluted discharge generated from the Project;

(viii) 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;

(ix) assess 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 3.4.4. The water quality impacts should be assessed if any upgrading or expansion of the existing system or any new system is found necessary;

(x) identify and quantify the water quality impacts based on the findings and recommendations from the Sewerage and Sewage Treatment Implications Assessment under section 3.4.4. 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;

(xi) predict and quantify the impacts on the water system(s) and their sensitive receivers due to the alterations, changes and the pollution sources identified above. Possible impacts include change in hydrology, flow regime, water quality and release of contaminants during dredging and other marine works, etc. Water quality impacts due to periodical maintenance dredging of navigation channels (if any) in the vicinity of the Project should also be assessed. The prediction shall take into

account and include possible different construction and operation stages of the Project;

(xii) 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;

(xiii) analyze the provision and adequacy of existing and planned future facilities to reduce pollution arising from the point and non-point sources identified in (vii) above;

(xiv) 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, so as to reduce the water quality impacts to within standards. Requirements to be incorporated in the project contract document shall also be proposed;

(xv) investigate and develop best management practices to reduce storm water and non-point source pollution as appropriate;

(xvi) 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. If the mitigated water quality impact still exceeds the relevant criteria in Annex 6 of TM, the Applicant shall identify, predict and evaluate the residual water quality impact in accordance with Section 4.4.3 of the TM and estimate the significance of the residual impact to the water system(s) and the water sensitive receivers;

(xvii) identification of fuel spillage scenario associated with re-provision and operation of the GFS helicopter base;

(xviii) prediction of the impacts on the water sensitive receivers due to fuel spillage scenario identified during re-provision and operation of the GFS helicopter base;

(xix) develop effective preventive measures to avoid accidental fuel spillage during re-provision and operation phase of the GFS helicopter base; and

(xx) deviation of emergency contingency plan for the re-provision and operation phase of the GFS helicopter base with an aim to avoid and contain the spread and to remove any accidental spillage in short notice and to prevent and/or minimise the amount of contaminants from reaching the water sensitive receivers.

Appendix D-1

Hydrodynamic and Water Quality Modelling Requirements

Modelling Software General

1. The modelling software shall be fully 3-dimensional capable of accurately simulating the stratified condition, salinity transport, and effects of wind and tide on the water body within the model area.

2. The modelling software shall consist of hydrodynamic, water quality, sediment transport, thermal and particle dispersion modules. All modules shall have been proven with successful applications locally and overseas.

3. The hydrodynamic, water quality, sediment transport and thermal modules shall be strictly mass conserved at all levels.

4. An initial dilution model shall be used to characterize the initial mixing of the effluent discharge, and to feed the terminal level and size of the plume into the far field water quality modules where necessary. The initial dilution model shall have been proven with successful applications locally and overseas.

Model Details – Calibration and Validation

1. The models shall be properly calibrated and validated against applicable existing and/or newly collected field data before their use in this study in the Hong Kong waters, the Pearl Estuary and the Dangan (Lema) Channel. The field data set for calibration and validation shall be agreed with EPD.

2. Tidal data shall be calibrated and validated in both frequency and time domain manner.

3. For the purpose of calibration and validation, the model shall run for not less than 15 days of real sequence of tide (excluding model spin up) in both dry and wet seasons with due consideration of the time required to establish initial conditions.

4. In general the hydrodynamic models shall be calibrated to the following criteria:

Criteria	Level of fitness with field data
• tidal elevation (@)	< 8 %
• maximum phase error at high water and low water	< 20 minutes
• maximum current speed deviation	< 30 %
• maximum phase error at peak speed	< 20 minutes
• maximum direction error at peak speed	< 15 degrees
• maximum salinity deviation	< 2.5 ppt

@ Root mean square of the error including the mean and fluctuating components shall meet the criteria at no less than 80% of the monitoring stations in the model domain

5. The consultants shall be responsible for acquiring/developing and calibration of the models for use in this study themselves. They may make reference to the models developed under the Update on Cumulative Water Quality and Hydrological Effect of Coastal Developments and Upgrading of Assessment Tool (Agreement No. CE 42/97). They may also propose to use other models subject to agreement with EPD.

Model Details – Simulation

1. The water quality modelling results shall be qualitatively explainable and any identifiable trend and variations in water quality shall be reproduced by the model. The water quality model shall be able to simulate and take account of the interaction of dissolved oxygen, phytoplankton, organic and inorganic nitrogen, phosphorus, silicate, BOD, temperature, suspended solids, contaminants release of dredged and disposed material, air-water exchange, *E. coli* and benthic processes. It shall also simulate salinity. Salinity results simulated by hydrodynamic models and water quality models shall be demonstrated to be consistent.

2. The sediment transport module for assessing impacts of sediment loss due to marine works shall include the processes of settling, deposition and re-erosion. The values of the modelling parameters shall be agreed with EPD. Contaminants release and DO depletion during dredging and dumping shall be simulated by the model.

3. The thermal model shall be based on the flow field produced by the hydrodynamic model. It shall incorporate the physical processes of thermal / cooled water discharge and abstraction flow, buoyancy effect of the thermal plume, and surface heat exchange. Dispersion of biocides in the discharge shall also be simulated with appropriate decay rates.

4. The models shall at least cover the Hong Kong waters, the Pearl Estuary and the Dangan Channel to incorporate all major influences on hydrodynamic and water quality. A fine grid model may be used for detailed assessment of this study. It shall either be linked to a far field model or form part of a larger model by gradual grid refinement. The coverage of the fine grid model shall be properly designed such that it is remote enough so that the boundary conditions will not be affected by the project. The model coverage area shall be agreed with EPD.

5. In general, grid size at the area affected by the project shall be less than 400 m in open waters and less than 75 m around sensitive receivers. The grid shall also be able to reasonably represent coastal features existing and proposed in the project. The grid schematization shall be agreed with EPD.

Modelling Assessment

1. The assessment shall include the construction and operational phase of the project. Where appropriate, the assessment shall also include maintenance dredging. Scenarios to be assessed shall cover the baseline condition and scenarios with various different options proposed by the Applicant in order to quantify the environmental impacts and improvements that will be brought about by these options. Corresponding pollution load, bathymetry and coastline shall be adopted in the model set up.

2. Hydrodynamic, sediment transport and thermal modules, where appropriate, shall be run for (with proper model spin up) at least a real sequence of 15 days spring-neap tidal cycle in both the dry season and the wet season.

3. Water quality module shall run for (with proper model spin up) a complete year incorporating monthly variations in Pearl River discharges, solar radiation, water temperature and wind velocity in the operational stage. Construction stage impacts, cooling water discharge and floating refuse and debris entrapment may be assessed by simulating typical spring-neap cycles in the dry and wet seasons.

4. For assessing temporary discharges via the emergency outfall, the Applicant shall estimate discharge loading, pattern and duration. The worst case scenario shall include discharge near slack water of neap tide. A period of at least 15 days spring-neap cycle in wet season, but long enough for recovery of the receiving water, shall be simulated. Detailed methodology shall be agreed with EPD.

5. The results shall be assessed for compliance of Water Quality Objectives. Any changes in hydrodynamic regime shall be accessed. Daily erosion / sedimentation rate shall be computed and its ecological impact shall be assessed.

6. The impact on all sensitive receivers shall be assessed.

7. Cumulative impacts due to other projects, activities or pollution sources within a boundary to the agreement of EPD shall also be predicted and quantified.

Appendix E

Requirements for Assessment of Sewerage and Sewage Treatment Implications

1. The Applicant shall estimate the wastewater arising from the Project in the short, medium and long terms, assess the impacts of discharging wastewater to the receiving water and environment, propose measures to mitigate the impacts and demonstrate the acceptability of the residual impacts with timely implementation of the mitigation measures. The assessment shall include, inter alia, the followings:

   (i) delineation of the wastewater catchment;

   (ii) estimate the peak wastewater arising from the residential and non-residential discharges, with flow build-up, within the catchment up to an ultimate development year agreed by the Authority;

   (iii) the proposed development falls on an unsewered area. The Applicant needs to provide proper treatment and disposal of the sewage arising associated with the development;

   (iv) identify and quantify the water quality and ecological impacts due to the emergency discharge from on-site sewage treatment plant/pumping stations, if any, and sewer bursting discharge, and to propose measures to mitigate these impacts;

   (v) estimate the quantity of screenings and sludge arising from the operation of the sewage treatment works, propose the disposal arrangement which shall be agreed by the Waste Disposal Authority.

   (vi) demonstrate the acceptability of the residual impacts with the timely commissioning of the mitigation measures.

Appendix F

Requirements for Assessment of Waste Management Implications

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 wastes 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 (C&D) materials, floating refuse 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 minimise the generation of public fill/inert C&D materials and maximise the use of public fill/inert C&D materials 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 that can be taken in the planning and design stages e.g. by modifying the design approach and in the construction stage for maximising waste reduction shall be separately considered.

The Applicant shall consider alternative project designs/measures to avoid/minimize floating refuse accumulation/entrapment and measures/proposals for the potential floating refuse problem, e.g. streamlining the shoreline design; measures to improve the tidal flushing capacity; alternative seawall design to facilitate floating refuse collection; and regular collection of the floating refuse along the shoreline. Regarding the potential trapping of floating refuse along the shoreline of the Project, the Applicant shall estimate as far as practicable the amount of floating refuse to be found/trapped along the shoreline of the Project in construction stage and after the completion of the Project. The Applicant shall develop an effective plan/design to avoid/minimize the trapping of floating refuse. If floating refuse is identified and needs to be dealt with, the Applicant shall propose appropriate measures to deal with this floating refuse in a proper and acceptable manner e.g. to collect, recycle, reuse, store, transport and dispose of.

(ii) After considering the opportunities for reducing waste generation and maximising re-use, the types and quantities of 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 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 wastes identified; and

(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. <u>Excavation/Dredging, Filling and Dumping</u>

(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 characterise the sediment/mud concerned shall be conducted. The ranges of parameters to be analysed; 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 documents, 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 practicable excavation/dredging methods to minimise excavation/dredging 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 G

Requirements for Land Contamination Assessment

1. If any contaminated land uses as stated in sections 3.1 and 3.2 of Annex 19 of the TM is identified, the Applicant shall carry out the land contamination assessment as detailed below and propose measures to avoid disposal:

   (i) The Applicant shall identify the potential land contamination site(s) within the entire Potential Development Area (Appendix A refers) and, if any, within the boundaries of all associated areas (e.g. work areas) of the Project.

   (ii) The Applicant shall provide a clear and detailed account of the present land uses (including description of the activities, chemicals and hazardous substances handled, with clear indication of their storage and location, by reference to a site layout plan) and a complete past land uses history, in chronological order, in relation to possible land contamination (including accident records and change of land use(s) and the like).

   (iii) During the course of the EIA study, the Applicant shall submit a Contamination Assessment Plan (CAP) to the Director for endorsement prior to conducting an actual contamination impact assessment of the land or site(s). The CAP shall include proposal with details on representative sampling and analysis required to determine the nature and the extent of the contamination of the land or site(s). Alternatively, the Applicant may refer to other previously agreed and still relevant and valid CAP(s) for the concerned site(s).

   (iv) Based on the endorsed CAP, the Applicant shall conduct a land contamination impact assessment and submit a Contamination Assessment Report (CAR) to the Director for endorsement. If land contamination is confirmed, a Remediation Action Plan (RAP) to formulate viable remedial measures with supporting documents, such as agreement by the relevant facilities management authorities, shall be submitted to the Director for approval. The Applicant shall then clean up the contaminated land or site(s) according to the approved RAP, and a Remediation Report (RR) to demonstrate adequate clean-up should be prepared and submitted to the Director for endorsement prior to the commencement of any development or redevelopment works within the PDA. The CAP, CAR and RAP shall be documented in the EIA report.

   (v) If there are potential contaminated site which are inaccessible for conducting sampling and analysis during the course of the EIA study, e.g. due to site access problem, the Applicant's CAP shall include:

      (a) a review of the available information;

      (b) an initial contamination evaluation of these sites and possible remediation methods;

      (c) a confirmation of whether the contamination problem at these sites would be surmountable;

      (d) a sampling and analysis proposal which shall aim at determining the nature

and the extent of the contamination of these sites; and

(e) where appropriate, a schedule of submission of revised or supplementary CAP, CAR, RAP and RR upon these sites become accessible.

Appendix H

Requirements for Ecological Impact Assessment (Terrestrial and Marine)

The ecological impact assessment shall include the following:

1. The Applicant shall examine the flora, fauna and other components of the ecological habitats within the assessment area. The aim shall be to protect, maintain or rehabilitate the natural environment. In particular, the Project shall avoid or minimise impacts on recognised sites of conservation importance [including but not limited to existing Sha Chau and Lung Kwu Chau Marine Park and the potential Marine Park at the Brothers Islands] and other ecologically sensitive areas (including but not limited to mudflats, mangroves, seagrass beds, coral communities). The assessment shall identify and quantify as far as possible the potential ecological impacts associated with the Project, both directly by physical disturbance and indirectly by change of water quality and hydrodynamic regime to important habitats and the associated wildlife groups/species.

2. The assessment shall include the following major tasks:

   (i) review the findings of relevant studies/surveys, including but not limited to the Increasing Land Supply by Reclamation and Rock Cavern Development cum Public Engagement – Feasibility Study, the EM&A for (i) Hong Kong-Zhuhai-Macao Bridge (HZMB) – Hong Kong Boundary Crossing Facilities, (ii) HZMB Hong Kong Link Road, and (iii) Tuen Mun – Chek Lap Kok Link, and collate the available information regarding the ecological characters of the assessment area, in particular the intertidal habitats at Yan O Wan, corals along the coastline in the vicinity and information on Chinese White Dolphins such as their occurrence, distribution, abundance, acoustic behaviour (including night-time) and the detected declining trends in dolphin abundance in the past decade;

   (ii) evaluate the information collected, identify any information gap relating to the assessment of potential ecological impact, and determine the ecological field surveys and investigations that are needed for an impact assessment as required in the following sections;

   (iii) carry out necessary ecological field surveys with a duration of at least six months and cover the wet season, and investigation to verify the information collected, fill the information gaps as identified in (ii) above, and to fulfil the objectives of the EIA study. The field surveys shall cover but not be limited to flora, fauna and any other habitats/species of conservation importance, and shall include marine mammal survey (e.g. passive acoustic monitoring), subtidal and intertidal survey, benthic community survey, and underwater dive survey for coral communities;

   (iv) establish the ecological profile of the assessment area based on information collected in the tasks mentioned in sub-section (i) to (iii) above, and describe the characteristics of each habitat found, the data set should be comprehensive and representative, and is up to date and valid for the purpose of this assessment. Major information to be provided shall include:

      (a) description of the physical environment, including all recognized sites of conservation importance and ecologically sensitive areas;

(b) habitats maps of suitable scale (1:1000 to 1:5000) showing the types and locations of habitats and species of conservation interest in the assessment area;

(c) ecological characteristics of each habitat type such as size, vegetation and/or substrate type, species present, dominant species found, species richness and abundance of major taxa groups, community structure, seasonal patterns, ecological value, inter-dependence of the habitats and species, and presence of any features of ecological importance;

(d) representative colour photographs of each habitat type and any important ecological features identified;

(e) species found that are rare, endangered and/or listed under local legislation, international conventions for conservation of wildlife/habitats or Red Data Books;

(v) investigate and describe the existing wildlife uses of various habitats with special attention to those wildlife groups and habitats with conservation interest, including but not limited to the following:

- woodlands;
- coastal/marine waters;
- intertidal shores including rocky shores / subtidal shores / coral communities;
- mudflats / mangroves, seagrass beds at Yan O Wan
- pipefish/horseshoe crab;
- benthic communities;
- Chinese White Dolphins;
- vertebrates, including avifauna, mammals and herpetofauna;
- stream/estuarine fauna;
- macroinvertebrates, including butterflies and odonates; and
- any other habitats and wildlife groups identified as having special conservation interest by the EIA study.

(vi) describe recognised sites of conservation importance within and in the vicinity of the assessment area, including the existing Sha Chau and Lung Kwu Chau Marine Park and the potential Marine Park at the Brothers Islands, and assess whether they will be affected by the Project;

(vii) using suitable methodologies (including but not limited to those adopted in other relevant EIA studies in Hong Kong), and considering also any works activities from other projects reasonably likely to occur at the time, identify and quantify as far as possible any direct (e.g. loss of habitats due to various elements such as reclamation and other associated works of the Project), indirect (e.g. changes in water qualities, hydrodynamics properties, hydrology, noise and other disturbance generated by the construction and operational activities etc.), on-site, off-site, primary, secondary and cumulative ecological impacts on the wildlife groups and habitats identified such as direct loss of habitats, potential diversion or modification of stream courses, disturbance to wildlife, destruction of habitats, reduction of species abundance/diversity, loss of feeding and breeding grounds, reduction of ecological carrying capacity and habitat fragmentation, in particular the following:

(a) habitat loss and disturbance to the benthic communities, subtidal and intertidal habitats especially the mudflats, mangroves and seagrass beds, at Yan O Wan

due to reclamation, possible dredging operation, construction of seawall, sewage facilities and associated outfalls, and possible emergency sewage discharge etc.;

(b) impacts to subtidal and intertidal organisms especially horseshoe crabs, seagrasses, corals and stream/estuarine fauna of conservation interest during construction and operation phases due to potential changes in water quality (e.g. changes in suspended solid level, dissolved oxygen and nutrients), hydrodynamics properties and sedimentation rates;

(c) risk of bioaccumulation of toxic contaminants released from the disturbed or dredged sediment, oil and chemical spillage from vessel/vehicle/ helicopter accidents to marine organisms especially Chinese White Dolphins;

(d) impacts to Chinese White Dolphins and their prey resources due to reclamation, in particular the direct and permanent loss of habitats, change in water quality/ hydrodynamic properties, and reduction in ecological carrying capacity for dolphins;

(e) impacts to Chinese White Dolphins associated with possible changes in marine traffic volume during construction and operation phases, in particular behavioral changes and increased risk of vessel collision to dolphins inhabiting the existing Sha Chau and Lung Kwu Chau Marine Park and the potential Marine Park at the Brother Islands;

(f) disturbance to Chinese White Dolphins associated with underwater noise, including pilling, noise generated from additional work barges and vessels during the construction phase, and any long term increase in underwater noise disturbance caused by the possible changes in marine traffic volume during the operation phase;

(g) impacts to the existing Sha Chau and Lung Kwu Chau Marine Park and the potential Marine Park at Brothers Islands which are regarded as core areas for Chinese White Dolphins in Hong Kong during construction and operation phases; and

(h) impacts of additional marine traffic, reclamation and changes in water quality/ hydrodynamic properties resulted from the Project on the functionality of the existing Sha Chau and Lung Kwu Chau Marine Park and the potential Marine Parks at Brothers Islands; and

(i) cumulative impacts due to other planned and committed concurrent developments projects (e.g. Expansion of Hong Kong International Airport into a Three-Runway System, Hong Kong-Zhuhai-Macao Bridge – Hong Kong Boundary Crossing Facilities & Hong Kong Link Road, Tuen Mun – Chek Lap Kok Link, Lantau Logistic Park, Sediment Disposal Facility in South of Brothers, Tung Chung New Town Development Extension, Increasing Land Supply by Reclamation and Rock Cavern Development cum Public Engagement – Feasibility Study with particular reference to the Identified Potential Near Shore Reclamation Sites in Western Waters of Hong Kong) at or near the Project area.

(viii) evaluate ecological impact based on the best and latest information available during the course of the EIA study, using quantitative approach as far as practicable and covering construction and operational phases of the Project;

(ix) recommend possible and practicable mitigation measures such as alternative design and configuration of the Project and modification/change of construction methods to avoid, minimise and/or compensate for the adverse ecological impacts identified during construction and operation of the Project, including but not limited to:

(a) adopting a development option that minimizes the scale of reclamation;

(b) adopting construction methods that minimize ecological impacts such as non-dredged reclamation and avoiding percussive piling;

(c) programming of construction activities to minimize impacts to marine organisms especially Chinese White Dolphins (e.g. avoid overlapping with other planned and committed concurrent development projects in the vicinity such as those specified in Section 2 (vii) (i) above); and

(d) measures aim at enhancing recolonization of marine species.

(x) evaluate the feasibility and effectiveness of the recommended mitigation measures and define the scope, type, location, implementation arrangement, resource requirement, subsequent management and maintenance of such measures. For instance, if reprovision of seawall is proposed as a mitigation measure for recolonization of marine species affected, supporting information should be provided to demonstrate its effectiveness;

(xi) determine and quantify as far as possible the residual ecological impacts after implementation of the proposed mitigation measures;

(xii) evaluate the significance and acceptability of the residual ecological impacts using well-defined criteria in Annex 8 of the TM and determine if off-site mitigation measures are necessary to mitigate the residual impacts and if affirmative, guidelines and requirements laid down in Annex 16 of the TM should be followed; and

(xiii) review the need for and recommend any ecological monitoring programme required.

Appendix I

Requirements for Fisheries Impact Assessment

1. Existing information regarding the assessment area shall be reviewed. Based on the review results, the assessment shall identify data gap and determine if there is any need for field surveys to collect adequate baseline information. If field surveys are considered necessary, the assessment shall recommend appropriate methodology, duration and timing for such surveys.

2. The fisheries impact assessment shall cover any potential short-term and long-term impacts on capture and culture fisheries during the construction and operation phases of the Project.

3. The fisheries impact assessment shall provide the following information:-

   (i) description of the physical environmental background;

   (ii) description and quantification of the existing fisheries activities;

   (iii) description and quantification of the existing fisheries resources;

   (iv) identification of parameters (e.g. water quality parameters) and areas of fisheries importance;

   (v) prediction and evaluation of any direct/indirect, onsite/offsite impacts on fisheries (such as potential loss or disturbance of fishing grounds, fisheries habitats, spawning or nursery grounds; water quality deterioration at sensitive receivers such as fish culture zones or artificial reefs) caused by the project;

   (vi) evaluation of cumulative impacts on fisheries;

   (vii) proposals of practicable mitigation measures with details on justification, description of and programme feasibility as well as staff and financial implications including those related to subsequent management and maintenance requirements of the measures; and

   (viii) review for the need of monitoring during the construction and operation phases of the Project and, if necessary, proposal for a monitoring and audit programme.

Appendix J

Requirements for Landscape and Visual Impact Assessment

1. The Applicant shall review relevant outline development plan(s), outline zoning plan(s), layout plan(s) and/or studies which may identify areas of high landscape value, open space, amenity area, conservation area and green belt designations. Any guidelines on landscape and urban design strategies and frameworks 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 based on a comparison of the scenarios with and without the Project. Any conflict with the statutory town plan(s) and any published land use plan(s) shall be highlighted and appropriate follow-up action shall be recommended. A system shall be derived for judging the landscape and visual impact significance as required under the Annexes 10 and 18 of the EIAO-TM and the EIAO Guidance Note No. 8/2010 "Preparation of Landscape and Visual Impact Assessment under the EIAO". Cumulative landscape and visual impacts of the Project with other existing, committed and planned developments in the assessment area shall be assessed.

2. The Applicant shall assess the landscape impact of the Project. The Applicant shall describe, appraise, analyse and evaluate the existing and planned landscape resources and characters of the assessment area. 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 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 setting and scenic spot. 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. Where applicable, broad brush tree survey shall be carried out and the impacts on existing trees shall be addressed.

3. The Applicant shall assess the visual impact of the Project. Clear illustrations including mapping of visual impact is required. Descriptive text shall provide a concise and reasoned judgment from a visual point of view. Cumulative visual impact of the Project with other existing, committed and planned developments in the assessment area shall be assessed. The assessment shall 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 with regard to views from sea level, ground level and elevated vantage points;

   (iii) description of the visual compatibility of the Project with the surrounding and the existing and planned setting, and its obstruction and interference with the key views within the visual envelope; and

   (iv) identification and description of the severity of visual impact in terms of nature, distance and number of sensitive receivers. The visual impact of the Project with

and without mitigation measures shall be included and illustrated so as to demonstrate the effectiveness of the proposed mitigation measures across time.

(v) evaluations and explanations of factors considered in arriving the significance thresholds of visual impact.

4. The Applicant shall evaluate the merits of preservation in totality, in parts or total destruction of existing landscape and the establishment of a new landscape character area. In addition, alternative location, site layout, development options, design and construction methods that would avoid or reduce the identified landscape and visual impacts shall 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 existing landscape and visual quality. The Applicant shall recommend mitigation measures to minimise adverse effects identified above, including provision of a landscape design and a landscape/visual impact mitigation measure plan.

5. The mitigation measures shall include preservation of vegetation, and natural landscape resources, transplanting of mature trees, provision of screen planting, re-vegetation of disturbed land, woodland restoration, compensatory planting using native trees, provisioning/reprovisioning of amenity areas and open spaces, design and layout of structures, provision of finishes to structures, colour scheme and texture of material used and any measures to mitigate the impact on existing and planned land uses and sensitive receivers. Parties shall be identified for the ongoing management and maintenance of the proposed mitigation works to ensure their effectiveness throughout the construction phase and operational phase of the Project. A practical programme for the implementation of the recommended measures shall be provided.

6. Annotated illustrations such as coloured perspective drawings, plans and section/elevation diagrams, oblique aerial photographs, photographs taken at vantage points, and computer-generated photomontage shall be adopted to fully illustrate the landscape and visual impacts of the Project. The landscape and visual impacts of the Project with and without mitigation measures from representative viewpoints, particularly from views of the most severely affected visually sensitive receivers (i.e. worst-case scenario), shall be properly illustrated in existing and planned setting at at least four stages (existing condition, Day 1 with no mitigation measures, Day 1 with mitigation measures and Year 10 with mitigation measures) by computer-generated photomontage so as to demonstrate the comparison of scenarios with and without the Project and the effectiveness of the proposed mitigation measures. Computer graphics shall be compatible with Microstation DGN file format. The Applicant shall record the technical details in preparing the illustrations, which may need to be submitted for verification of the accuracy of the illustrations.

Appendix K

Requirements for Cultural Heritage Impact Assessment

1. Marine Archaeological Investigation (MAI)

   (a) The Applicant shall engage a qualified marine archaeologist to conduct a marine archaeological review based on the best available information to identify whether there is any potential existence of sites or objects of cultural heritage within the seabed that will be affected by the marine works of the Project, whether the identified issues can be mitigated and whether there is a need for more detailed investigation. The review can take into account the scope and nature of proposed marine works, the results of previous marine archaeological investigations, the dredging history and other diving records, etc. The assessment area shall include all areas to be affected by the marine works of the Project.

   (b) If marine archaeological potential is identified and the need for further investigation is confirmed, a MAI shall be carried out to ascertain the archaeological value of the affected seabed area. The Applicant shall propose a programme of investigation, including the scope of works, methodology and time schedule, etc. for agreement with the Director. The MAI shall be carried out by a qualified marine archaeologist who shall obtain a licence from the Antiquities Authority under the provision of the Antiquities and Monuments Ordinance, Cap. 53. If significant archaeological remains are identified, mitigation measures shall be designed and implemented in consultation with the Antiquities and Monuments Office.

2. The Applicant shall draw necessary reference to relevant sections of the "Guidelines for Marine Archaeological Investigation" at Appendix K-1 for detailed requirement.

Appendix K-1

Guidelines for Marine Archaeological Investigation (MAI)
(As at October 2010)

The standard practice for MAI should consist of four separate tasks, i.e. (1) Baseline Review, (2) Geophysical Survey, (3) Establishing Archaeological Potential and (4) Remote Operated Vehicle (ROV)/Visual Diver Survey/Watching Brief. Marine archaeologists should make reference to the standard and guidance of the Institute for Archaeologists and English Heritage to carry out MAI.

1. Baseline Review

1.1 A baseline review should be conducted to collate the existing information in order to identify the potential for archaeological resources and, if identified, their likely character, extent, quality and value.

1.2 The baseline review will focus on known sources of archive data. It will include:

(a) Geotechnical Engineering Office (GEO) – the Department holds extensive seabed survey data collected from previous geological research.

(b) Marine Department, Hydrographic Office - the Department holds a substantial archive of hydrographic data and charts.

(c) The Royal Naval Hydrographic Department in the UK - the Department maintains an archive of all survey data collected by naval hydrographers.

(d) Relevant government departments should be consulted in order to obtain the information of dredging history (if any) on the proposed project area. Area for sand dredging, mud disposal and allocated marine borrow area within Hong Kong should also be considered during the review.

1.3 The above data sources will provide historical records and more detailed geological analysis of submarine features which may have been subsequently masked by more recent sediment deposits and accumulated debris.

2. Geophysical Survey

2.1 Extensive geophysical survey of the study area should deploy high resolution boomer, side scan sonar, an echo sounder and high resolution multi beam sonar. The multi beam data must be presented as processed digital terrain models to facilitate the archaeological analysis. The data received from the survey would be analysed in detail to provide:

(a) Exact definition of the areas of greatest archaeological potential.

(b) Assessment of the depth and nature of the seabed sediments to define which areas consist of suitable material to bury and preserve archaeological material.

(c) Detailed examination of the boomer and side scan sonar records to map anomalies in and on the seabed which may be archaeological material.

(d) Detailed examination of the multi beam sonar data to assess the archaeological potential of the sonar contacts.

3. Establishing Archaeological Potential

3.1 The data examined during Task 1 and 2 will be analysed to provide an indication of the likely character and extent of archaeological resources within the study area. This would facilitate formulation of a strategy for investigation.

3.2 The results would be presented as a written report and charts. If there is no indication of archaeological material there would be no need for further work.

3.3 Charts should be presented at the most appropriate scale and show each survey contact. Its dimensions and exact location should also be shown.

4. Remote Operated Vehicle (ROV)/Visual Diver Survey/Watching Brief

4.1 Subject to the outcome of Task 1, 2 and 3, accepted marine archaeological practice would be to plan a field evaluation programme to acquire more detailed data on areas identified as having archaeological potential. The areas of archaeological interest can be inspected by ROV or divers. ROV or a team of divers with both still and video cameras would be used to record all seabed features of archaeological interest.

4.2 Owing to the heavy marine traffic in Hong Kong, the ROV/visual diver survey may not be feasible to achieve the target. If that is the case, an archaeological watching brief is the most appropriate way to monitor the dredging operations in areas of identified high potential to obtain physical archaeological information.

4.3 A sampling strategy for an archaeological watching brief would be prepared based on the results of Task 1, 2 and 3 to focus work on the areas of greatest archaeological potential. Careful monitoring of the dredging operations would enable immediate identification and salvage of archaeological material. If archaeological material is found, the AMO should be contacted immediately to seek guidance on its significance and appropriate mitigation measures would be prepared.

4.4 If Task 4 is undertaken, the results would be presented in a written report with charts.

5. Report

Five copies of the final report should be submitted to the AMO for record.

Appendix L

Requirements for Hazard to Life Assessment

If Jet Fuel Refuelling facilities are to be established in the re-provisioned GFS helicopter base

1. The Applicant shall conduct hazard assessment for the potential risk to the nearby sensitive receivers in the vicinity during operation stage. The hazard assessment shall include the following:
   (i) Identify hazardous scenarios associated with the operation of helicopter refuelling facilities and then determine a set of relevant scenarios to be included in a Quantitative Risk Assessment;
   (ii) Execute a Quantitative Risk Assessment of the set of hazardous scenarios determined in item(i), expressing population risks in both individual and societal terms;
   (iii) Compare individual and societal risks with the criteria for evaluating hazard to human life stipulated in Annex 4 of the TM; and
   (iv) Identify and assess practicable and cost-effective risk mitigation measures.

2. The methodology to be used in the hazard assessment shall be consistent with previous studies having similar issues (e.g. Permanent Aviation Fuel Facility of Hong Kong International Airport).

Appendix M

Implementation Schedule of Recommended Mitigation Measures

EIA Ref.	EM&A Ref.	Recommended Mitigation Measures	Objectives of the Measures & Main Concerns to Address	Who to implement the measure?	Location of the measure	When to implement the measure?	What standards or requirements for the measure to achieve?

Appendix N

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 30 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 (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. To facilitate public inspection of EIA report via EIAO Internet Website, the Applicant shall provide electronic copies of both the EIA report and the executive summary prepared in HyperText Markup Language (HTML) (version 4.0 or later) and in Portable Document Format (PDF version 1.3 or later). For the HTML version, a content page capable of providing hyperlink to each section and sub-section of the EIA report and the executive summary shall be included in the beginning of the document. Hyperlinks to figures, drawings and tables in the EIA report and the 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.

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.