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E-MAIL:
網　　址
HOMEPAGE: http://www.epd.gov.hk

Environmental Protection Department
Branch Office
28th Floor, Southorn Centre,
130 Hennessy Road,
Wan Chai, Hong Kong.

環境保護署分處
香港灣仔
軒尼詩道
一百三十號
修頓中心廿八樓

3 March 2022

By Registered Post & Fax

Waste Infrastructure Planning Division

Environmental Impact Assessment (EIA) Ordinance, Cap.499
Application for EIA Study Brief

Project Title: Development of Integrated Waste Management Facilities Phase 2
(Application No. ESB-353 /2022)

I refer to your above application received on 26 January 2022 for an EIA Study Brief under Section 5(1)(a) of the EIA Ordinance.

In accordance with Section 5(7)(a) of the EIA Ordinance and after public inspection of the Project Profile, I issue the attached EIA Study Brief (No. ESB-353/2022) for your preparation of an EIA report.

Under Section 15 of the EIA Ordinance, the EIA Study Brief will be placed on the EIA Ordinance Register. It will also be placed on the EIA Ordinance website (http://www.epd.gov.hk/eia/).

You may submit an application for approval of the EIA report in accordance with Section 6(2) of the EIA Ordinance after its completion. Upon receipt of your application, this department will decide under Section 6(3) of the EIA Ordinance whether the EIA report meets the requirements of the EIA Study Brief and Technical Memorandum on EIA Process, and accordingly advise you under Section 6(4) of the EIA Ordinance whether a submission to the Advisory Council on the Environment (ACE) or its subcommittee is required. In this connection, you are required to provide sufficient copies of the Executive Summary of the EIA report to the Secretariat of the EIA Subcommittee of the Council for selection for submission when you submit the EIA report to this department for approval. Please liaise with Ms. Karen CHEK (Tel: 2594 6323) regarding the details in due course.

If the EIA report is selected by ACE for submission and presentation, you are expected to provide ACE with an account of the environmental issues arising from the project, major

conclusions and recommendations of the EIA study. In particular, the main environmental concerns of the general public and interest groups who may be affected by the Project should be identified and addressed in the EIA study. As such, you are strongly advised to engage the public and interest groups during the course of the EIA study. Please find attached a copy of the "*Modus Operandi of the EIA Subcommittee of the Advisory Council on the Environment*" for your reference.

Please note that if you are aggrieved by any of the content of this EIA Study Brief, you may appeal under Section 17 of the EIA Ordinance within 30 days of receipt of this EIA Study Brief.

Should you have any queries on the above application, please contact my colleague Mr. Tom TAM at 2835 1107.

Yours sincerely,

(Stanley LAU)
Principal Environmental Protection Officer
for Director of Environmental Protection

Encl.

c.c. (w/o encl.)
ACE EIA Subcommittee Secretariat (Attn. : Ms. Karen CHEK)

MODUS OPERANDI OF THE ENVIRONMENTAL IMPACT ASSESSMENT SUBCOMMITTEE OF THE ADVISORY COUNCIL ON THE ENVIRONMENT

Purpose

This paper sets out the *modus operandi* of the Environmental Impact Assessment (EIA) Subcommittee of the Advisory Council on the Environment (ACE) so as to facilitate smooth proceedings of subcommittee meetings. The current *modus operandi* was last updated and endorsed by ACE in July 2009.

Background

2. ACE is the Government's principal advisory body on matters relating to environmental protection and nature conservation. The terms of reference of ACE are –

(a) to keep under review the state of the environment in Hong Kong; and

(b) to advise the Government, through the Secretary for the Environment, on appropriate measures which might be taken to combat pollution of all kinds, and to protect and sustain the environment.

3. The EIA Subcommittee is set up under ACE to study EIA reports of major development projects. It also comments on strategic environmental assessment reports of major planning projects. The terms of reference of the EIA Subcommittee are –

(a) to receive and study EIA reports of major development projects; and

(b) to report on its deliberations and findings and make recommendations to ACE.

EIA Process

4. ACE and the EIA Subcommittee are involved in three main stages of the EIA process, namely commenting on the project profiles for designated projects, selection of EIA reports for submission to ACE and commenting on selected EIA reports. In accordance with ETWB Technical Circular (Works) No. 13/2003, the statutory gazetting of a project under the relevant ordinances can be done in parallel with the EIA process. Separately, consultation with District Councils and other relevant parties may proceed in advance of or in parallel with the submission of EIA reports to the EIA Subcommittee.

Project Profiles

5. Under section 5 of the EIA Ordinance, ACE and members of the public may comment on the project profile of a designated project within 14 days of it being advertised. It is hence not necessary for the EIA Subcommittee to present to the Director of Environmental Protection (DEP) the collective view of the EIA Subcommittee on project profiles. To ensure that comments on project profiles, if any, are given to DEP within the statutory time limit, individual ACE Members would write to DEP directly. Where necessary, the ACE Member may copy his/her comments to the Chairman and Members for information.

Selection of EIA Reports

6. Project proponents of designated projects will have to present their EIA reports to ACE if they are required to submit the reports to the Council. Members of the EIA Subcommittee will be asked to select those projects which they consider should require a presentation to the EIA Subcommittee by the project proponent. The selection outcome is for internal planning of the schedule of the EIA Subcommittee and will not be divulged to the project proponent. Only those projects selected by half or more of EIA Subcommittee Members will be selected. The project proponent concerned will be notified of the selection outcome only after DEP has decided that the EIA report is ready for public inspection and submission to ACE for advice.

7. During the project selection process, if individual EIA Subcommittee Member has special concerns/comments on a certain project, he/she could draw the EIA Subcommittee Chairman's attention to his/her concerns/comments and the Chairman would consider the need to review the decision on selection of the EIA report for submission to ACE.

8. For projects not selected, the project proponent will be required to send the Executive Summary of the EIA report to the EIA Subcommittee. Members would pass their comments, if any, to DEP directly within the prescribed public inspection period and if necessary, copy his/her comments to the Chairman and Members of the EIA Subcommittee for information. At the ACE meeting immediately following the issue of the Executive Summaries of the EIA reports, the EIA Subcommittee Chairman will report to ACE about the submission of these Executive Summaries for information of Members and record as projects not selected for discussion.

Meeting Arrangements

9. The EIA Subcommittee will basically meet on a monthly basis. Meetings will be held when there is submission of EIA report(s) or issue(s) to be discussed.

10. To facilitate focused discussion, the EIA Subcommittee will generally consider no more than two EIA reports in each meeting. EPD will prepare a paper on each EIA report to be submitted to the EIA Subcommittee highlighting the key environmental issues and major findings of the EIA study. Upon expiry of the report inspection period by the general public, EPD will summarize all public comments received during the period for consideration of the EIA Subcommittee. The project proponent, where applicable, will provide the EIA Subcommittee with a report on the site selection process of the project, setting out the alternative sites that have been considered and the reasons of the selection of the particular site when such information is not provided in the EIA report. The paper, the EIA report and the site report, if any, will normally be issued to EIA Subcommittee Members two weeks before the scheduled meeting. The summary of public comments will also be given to Members before the meeting. Members will be asked to indicate whether it is necessary for the project proponent to attend the meeting or the report could be considered by circulation. Project proponents will be informed accordingly before the scheduled meeting.

11. Summary of the public comments will also be provided to non-EIA Subcommittee Members for reference to facilitate their discussion of the EIA Subcommittee's recommendations at the next ACE meeting before the Council tenders its comments to DEP on the EIA report as provided for under the EIA Ordinance.

12. Members of the EIA Subcommittee may raise questions in writing on an EIA report before the scheduled meeting and the project proponent should provide written response to the Secretariat at least three working days before

the meeting.

13. Each discussion item on an EIA report would include a Presentation Session by the project proponent, a Question-and-Answer Session and Internal Discussion Sessions. The Presentation Session and the Question-and-Answer Session are open up for broadcasting and members of the public can view the sessions real time in the public viewing room. The EIA Subcommittee would allocate as much time to the Question-and-Answer Session as possible.

14. The presentation by the project proponent should cover, inter alia, the major conclusions and recommendations of the EIA study. In addition, the project proponent should provide a concise and objective account of the main concerns of the general public and interest groups made known during the EIA study and the public inspection stages, and explain how these concerns are addressed in the EIA study.

Criteria for Assessing EIA Reports

15. EIA reports will be assessed by the EIA Subcommittee according to the requirements of the Technical Memorandum on the EIA Process and the study brief of the individual projects issued by DEP.

Recommendations to the Full Council

16. The EIA Subcommittee can make one of the following recommendations to the full Council –

(i) endorse the EIA report without condition; or
(ii) endorse the EIA report with condition(s); or
(iii) reject the EIA report and inform the proponent the right to go to the full Council.

17. If the EIA Subcommittee cannot reach a consensus (i.e. if two or more Members do not agree with the conclusion of the EIA Subcommittee) during the meeting, it may –

(i) ask for a second submission to the EIA Subcommittee; or
(ii) defer the decision to the full Council and highlight issues or reasons for not reaching a consensus for the full Council's deliberation.

18. Other than the scenario in paragraph 17 above or the EIA

Subcommittee Chairman considers it appropriate, the recommendations of the EIA Subcommittee will not be discussed in detail in the full Council.

Other Rules that apply to EIA Subcommittee Meetings

19. Apart from the procedures mentioned above, the following rules also apply to EIA Subcommittee meetings –

(i) the quorum for EIA Subcommittee meetings should be half of the number of EIA Subcommittee Members, including the Chairman;

(ii) ACE Members who are not EIA Subcommittee Members may attend EIA Subcommittee meetings and participate in the discussion of the meetings but they shall not vote when votes are taken;

(iii) Council Members and EIA Subcommittee Members should declare direct and indirect interest before deliberating on agenda items so that the EIA Subcommittee Chairman could decide whether they should take part in the discussion or in the case of EIA Subcommittee Members to vote;

(iv) the confirmed minutes of the EIA Subcommittee (with Members' names deleted) are uploaded on the ACE's website for public inspection;

(v) the Presentation Session and Question-and-Answer Session of a discussion item on an EIA report at the EIA Subcommittee meeting requiring the attendance of the project proponent team will be opened to the public. The opening up of these sessions is an administrative arrangement only. The open meeting arrangements are not applicable to internal discussion sessions of a discussion item on an EIA report and all other sessions of the meetings of the EIA Subcommittee;

(vi) special meetings may be called to consider urgent items. The EIA Subcommittee will consider each case individually should there be requests for direct submissions to the full Council;

(vii) there will not be a limit on the number of professionals/experts to be invited to each EIA Subcommittee meeting for items requiring their assistance. In these cases and where votes are

taken, these professionals/experts shall not vote; and

(viii) to facilitate effective deliberation at meetings of the EIA Subcommittee, the EIA Subcommittee may appoint Members to advise the EIA Subcommittee on specific subject areas of EIA reports. The appointed Members would consider the assigned subjects of an EIA report, and seek advice from the relevant authorities designated under the EIAO as necessary before EIA Subcommittee meetings.

20. The revised *modus operandi* of the EIA Subcommittee has taken effect in April 2013 upon endorsement of ACE.

EIA Subcommittee Secretariat
April 2013

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

ENVIRONMENTAL IMPACT ASSESSMENT STUDY BRIEF NO. ESB-353/2022

PROJECT TITLE: Development of Integrated Waste Management Facilities Phase 2
(hereinafter known as the "Project")

NAME OF APPLICANT: Waste Infrastructure Planning Division, Environmental Protection Department
(hereinafter known as the "Applicant")

1. BACKGROUND

1.1 An application (No. ESB-353/2022) for an Environmental Impact Assessment (EIA) study brief under section 5(1) of the Environmental Impact Assessment Ordinance (EIAO) was submitted by the Applicant on 26 January 2022 with a Project Profile (No. PP- 638/2022) (the Project Profile).

1.2 The Project is to construct and operate the Integrated Waste Management Facilities Phase 2 (IWMF Phase 2) at the Tsang Tsui Ash Lagoon site, as shown in Figure 1 in Appendix A. The proposed IWMF Phase 2 would have a design treatment capacity for about 4,000 tonnes per day (tpd) of municipal solid waste (MSW) which comprises:

(i) waste reception, storage and feeding system;
(ii) incineration system;
(iii) waste heat recovery, turbine generator and cooling system;
(iv) electricity export system;
(v) flue gas treatment and emission system;
(vi) reagent reception and storage system;
(vii) incinerator bottom ash, fly-ash and flue gas cleaning residues storage, handling and treatment system;
(viii) process control and monitoring system; and
(ix) ancillary facilities to support the operation of the Project.

1.3 Based on the information provided in the Project Profile, the following are identified as designated projects (DPs) in Parts I and II, Schedule 2 of the EIAO. More DPs items may be identified in the course of the EIA study:

Part I, Schedule 2

(a) Item G.3 – An incinerator with an installed capacity of more than 50 tonnes per day;
(b) Item G.4(a) – A waste disposal facility for refuse;
(c) Item G.6 – A waste disposal facility for pulverised fuel ash, furnace bottom ash or gypsum;

(d) Item D.1 – Public utility electricity power plant;
(e) Item F.4 – An activity for the reuse of treated sewage effluent from a treatment plant; and

Part II, Schedule 2

(f) Item 8, Decommissioning Project – A waste disposal facility for pulverised fuel ash, furnace bottom ash or gypsum.

1.4 Pursuant to section 5(7)(a) of the EIAO, the Director of Environmental Protection (the Director) issues this EIA study brief to the Applicant to carry out an EIA study.

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

(i) the overall acceptability of any adverse environmental consequences that is to arise as a result of the Project and the associated activities of the Project;
(ii) the conditions and requirements for the detailed design, construction and operation of the Project to mitigate against adverse environmental consequences; and
(iii) the acceptability of residual impacts after the proposed mitigation measures are implemented.

2. OBJECTIVES OF THE EIA STUDY

2.1 The objectives of the EIA study are as follows:

(i) to describe the 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 Project and/or to cause adverse impacts to the Project, including both the natural and man-made environment and the associated environmental constraints;
(iii) to identify and quantify emission sources and determine the significance of impacts on sensitive receivers and potential affected uses, and to propose measures to mitigate these impacts;
(iv) to identify and quantify any potential impacts from point and non-point pollution sources on the identified water systems and sensitive receivers and to propose measures to mitigate these impacts;
(v) to identify and quantify waste management requirements and land contamination prevention requirements, and to propose measures to mitigate or prevent impacts;

(vi) to identify and quantify any potential losses or damage to flora, fauna and natural habitats, and to propose measures to mitigate these impacts;
(vii) to identify and quantify any potential fisheries impacts and to propose measures to mitigate these impacts;
(viii) to identify any potential landscape and visual impacts and to propose measures to mitigate these impacts;
(ix) to identify and quantify any health impacts and to propose measures to mitigate these impacts;
(x) to identify any potential risks of landfill gas and to propose measures to mitigate these risks;
(xi) to propose the provision of mitigation measures to minimise pollution, environmental disturbance and nuisance during construction and operation of the Project;
(xii) to investigate the feasibility, practicability, effectiveness and implications of the proposed mitigation measures;
(xiii) to identify, predict and evaluate the residual environmental impacts (i.e. after practicable mitigation) and the cumulative effects expected to arise during construction and operational phases of the Project in relation to the sensitive receivers and potential affected uses;
(xiv) 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 any risks, environmental impacts and cumulative effects and reduce them to acceptable levels;
(xv) to investigate the extent of the secondary environmental impacts that may arise from the proposed mitigation measures and to identify constraints associated with the mitigation measures recommended in the EIA study, as well as the provision of any necessary modification; and
(xvi) to design and specify the environmental monitoring and audit requirements to ensure the effective implementation of the recommended environmental protection and pollution control measures; and
(xvii) to develop contingency plan for the operation of the Project, covering any potential accidental event(s).

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 the 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 has to demonstrate in the EIA whether the criteria in the relevant sections of the Technical Memorandum on the Environmental Impact Assessment Process of the Environmental Impact Assessment Ordinance (hereinafter referred to as "the TM"), are fully complied with.

3.2 The Scope

3.2.1 The scope of this EIA study shall cover the Project and the associated works mentioned in Section 1.2 above. For the purpose of assessing whether the environmental impacts shall comply with the criteria of the 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 option(s), design and construction method(s) of the Project;

(ii) the potential air quality impacts during construction and operation of the Project including odour impacts at the sensitive receivers;

(iii) the potential health impacts during construction and operation of the Project, including aerial emissions, fugitive emissions, biogas production and storage and other accidental events;

(iv) the potential water quality impacts during construction and operation of the Project, including the impacts arising from effluent and cooling water discharge/intake;

(v) the potential ecological impacts from construction and operation of the Project, including loss of habitats, disturbance to wildlife and any indirect impacts to habitats and associated fauna adjacent to the site;

(vi) the potential fisheries impacts during construction and operation of the Project;

(vii) the potential impacts of various types of wastes to be generated from construction and operation of the Project;

(viii) the potential noise impacts during construction and operation of the Project;

(ix) the potential landscape and visual impacts during construction and operation of the Project to sensitive receivers;

(x) the potential risks of landfill gas on the Project during construction and operation of the Project;

(xi) the potential cumulative environmental impacts of the Project, through interaction or in combination with other existing, committed and planned developments in the vicinity of the Project, and that those impacts may have a bearing on the environmental acceptability of the Project. Such assessment shall be based on the best available information to which the Applicant is able to access at the time of the assessment.

3.3 Description of the Project

3.3.1 Purpose(s) and Objectives of the Project

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

3.3.2 Details of the Project

The Applicant shall indicate the nature and status of Project decision(s) for which the EIA study is undertaken. The Applicant shall describe Project details that may affect the potential environmental impacts and cumulative impacts, including the proposed siting, scale/size, layout design, construction methods, sequence of construction works, and other major activities involved in the Project, using diagrams, plans and/or maps as necessary. The estimated duration of the construction phase and operation phase of the Project together with the programme within these phases, where appropriate, shall be given. The land taken by the Project, construction sites and any associated access arrangements and auxiliary facilities shall be shown on a scaled map.

3.3.3 Background and History of the Project

The Applicant shall provide information on the site location and site history of the Project, and the consideration of different development options. The options might include consideration of alternative design, siting, construction methods (e.g. consideration of non-dredged method if the Project involves reclamation) and sequence of construction works of the Project, etc. The key reasons for selecting the proposed development option of the Project and the part environmental factors played in the selection shall be described. The main environmental impacts of different development scenarios shall be compared with those of the recommended option of the Project and with the likely future environmental conditions in the absence of the Project.

3.4 Technical Requirements

3.4.1 The Applicant shall conduct the EIA study to address the environmental aspects as described in the scope as set out above. The assessment shall be based on the best and latest information available during the course of the EIA study.

3.4.2 The Applicant shall include in the EIA report details of the construction programme and methodologies. The Applicant shall clearly state in the EIA report the time frame and work programmes of the Project and associated works and other concurrent projects, and assess the cumulative environmental impacts from the Project with interacting projects, including any phased implementation of the Project and the associated works. The EIA study shall follow the technical requirements specified below and in the Appendices of this EIA Study Brief.

3.4.3 Air Quality Impact

3.4.3.1 The Applicant shall follow the criteria and guidelines for evaluating and assessing the air quality impact as stated in Section 1 of Annex 4 and Annex 12 of the TM respectively.

3.4.3.2 The study area for air quality impact assessment shall generally be defined by a distance of 500 metres from the boundary of the Project site and the works of the Project as identified in the EIA study, which shall be extended to include major existing, committed and planned air pollutant emission sources such as Castle Peak Power Station, Black Point Power Station, large industrial uses in Tuen Mun, Sludge Treatment Facilities and WENT Landfill and Extension, etc. (with their individual aerial emission rate showing in a table), that may have a bearing on the environmental acceptability of the Project. The assessment shall include the existing, committed and planned air sensitive receivers within the assessment area as well as areas where the air quality may be potentially affected by the Project. In particular, the assessment area shall be further extended to be agreed by the Director to cover the affected zone of air pollution impact due to stack emissions of the Project, which depends on the chimney height and air pollutant emission rates, which may be extended over many kilometers. The assessment shall be based on the best available information at the time of the assessment. The assessment shall also take into account the impacts of emission sources from nearby concurrent projects, if any.

3.4.3.3 The assessment of air quality impact arising from construction and operation of the Project shall follow the detailed technical requirements given in **Appendices B** and **B-1** of this EIA Study Brief.

3.4.4 Noise Impact

3.4.4.1 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.

3.4.4.2 The Applicant shall conduct construction noise and operation noise impact assessment on 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.

3.4.4.3 The Applicant shall review in the EIA report the need for a noise impact assessment associated with the road traffic noise induced by the operation of the Project. A road traffic noise impact assessment is needed if the peak traffic generated by the Project would fall within night time or early morning. The road traffic noise impact assessment shall follow the detailed technical requirements given in **Appendix C** of this EIA study brief.

3.4.4.4 Except for the road traffic noise assessment above, the Applicant shall propose the assessment area for the construction noise, fixed noise sources and marine traffic noise impact assessment for agreement of the Director before commencing the assessment. Subject to expansion, the assessment area for the noise impact assessment shall generally include areas within 300 metres from the boundary of

the Project and the works of the Project. If NSRs are identified within the assessment area, construction noise, fixed noise sources and marine traffic noise impact assessment shall be carried out. The Applicant shall then propose methodology for agreement of the Director, with reference to Section 4.4.2 of the TM, prior to the commencement of the assessment.

3.4.5 Water Quality Impact

3.4.5.1 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.

3.4.5.2 The assessment area for the water quality impact assessment shall include area within 300 metres from the boundary of the Project and shall cover the Deep Bay and North Western Water Control Zones as designated under the Water Pollution Control Ordinance (Cap.358, WPCO) and water sensitive receivers in the vicinity of the Project. The assessment area shall be extended to include other areas, if they are found also being affected by the Project during the course of the EIA study and have a bearing on the environmental acceptability of the Project.

3.4.5.3 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.

3.4.6 Waste Management Implications

3.4.6.1 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.

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

3.4.7 Ecological Impact (Both 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 purpose of terrestrial ecological impact assessment shall include areas within 500 metres from the site boundary of the land based works areas or the area likely to be impacted by the Project. For marine ecology, the study area shall be the same as the water quality impact assessment as stipulated in Section 3.4.5.2 or the area likely to be impacted by the Project.

3.4.7.3 The ecological impact assessment for construction and operation of the Project shall follow the detailed technical requirements given in **Appendix F** 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.

3.4.8.2 The assessment area for fisheries impact assessment shall be the same as the water quality impact assessment as stipulated in Section 3.4.5.2 and other areas with potential fisheries impacts found during the course of the EIA study and have a bearing on the environmental acceptability of the Project.

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

3.4.9 Landscape and Visual Impact

3.4.9.1 The Applicant shall follow the criteria and guidelines for evaluating and assessing the 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".

3.4.9.2 The assessment area for the landscape impact assessment shall include areas within 100 metres distance from the boundary of the Project and the works of the Project 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 assessment of landscape and visual impact from construction and operation of the Project shall follow the detailed technical requirements given in **Appendix H** of this EIA Study Brief.

3.4.10 Health Impact

3.4.10.1 A health risk assessment shall be conducted to assess the potential health impact associated with construction and operation of the Project. Particular attention should be paid to assess aerial emissions from the Project, biogas from the sorting and recycling plant; fugitive emissions during excavation, filling, transportation, storage, handling and disposal of the waste and ash; and any other potential accidental events.

3.4.10.2 The health risk assessment shall follow the detailed technical requirements given in **Appendix I** of this EIA Study Brief.

3.4.11 Landfill Gas Hazards Assessment

3.4.11.1 The Applicant shall assess the potential risks of landfill gas during construction and operation of the Project. The Applicant shall follow the criteria and guidelines for evaluating and assessing landfill gas hazards as stated in Annex 7 and Annex 19 of the TM respectively and the Landfill Gas Hazard Assessment Guidance Note issued by the Director.

3.4.11.2 The landfill gas hazard assessment for the construction and operation of the Project shall follow the detailed technical requirements given in **Appendix J** of this EIA Study Brief.

3.4.12 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 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 confirmation of EIA findings, the Applicant shall comply with 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 K**) containing the EIA study recommendations and mitigation measures with reference to the implementation programme.

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 and the environmental benefits of environmental protection measures recommended.

3.5.2 Summary of Environmental Impacts

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

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

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

3.5.4 Summary of Alternative Mitigation Measures

The EIA report shall contain a summary of alternative measures considered during the course of EIA study, including design, scale, extent, layout and mode of operation as well as construction methods, disposal/treatment methods and sequences of works for the Project, with a view to avoiding, minimising and mitigating adverse environmental impacts. A comparison of the environmental benefits and dis-benefits of applying different mitigation options shall be made. This summary shall cover the key impacts and shall also form an essential part of the executive summary of the EIA report.

3.5.5 Documentation of Public Concerns

The EIA report shall contain a summary of the main concerns of the general public, special interest groups and the relevant statutory or advisory bodies received and identified by the Applicant during the course of the EIA study, and describe how the relevant concerns have been taken into account.

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 REPORT REQUIREMENTS

5.1 In preparing the EIA report, the Applicant shall refer to Annex 11 of the TM for the contents of an EIA report. The Applicant shall also refer to Annex 20 of the TM, which stipulates the guidelines for the review of an EIA report. When submitting the EIA report to the Director, the Applicant shall provide a summary, pointing out where in the EIA report the respective requirements of the EIA Study Brief and the 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 L** 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.

5.3 To facilitate enhanced public engagement in the EIA process, the Applicant shall produce 3-dimensional electronic visualisations of the findings of the EIA report, including baseline environmental information, the environmental situations with or without the Project, associated works, supporting facilities and essential infrastructures, key mitigated and unmitigated environmental impacts, and key recommended environmental mitigation measures so that the public can better understand the Project and the associated environmental issues. The visualisations shall be based on the EIA report findings and shall be developed and constructed such that they can be accessed and viewed by the public through an internet browser and/or other tools of 3-dimensional electronic visualisations (i.e. Virtual Reality, Augmented Reality, Mixed Reality) at a reasonable speed and without the need for software license requirement at the user's end. The visualisations shall be submitted in 10 copies of CD-ROM, DVD±R or other suitable means as agreed with the Director.

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 Project Profile (No. PP-638/2022), the Applicant must seek confirmation from the Director in writing on whether or not the scope of issues

covered by this EIA study brief can still cover the key changes, and the additional issues, if any, that the EIA study must also address. If the changes to the Project fundamentally alter the key scope of the EIA study brief, the Applicant shall apply to the Director for a fresh EIA study brief.

7. LIST OF APPENDICES

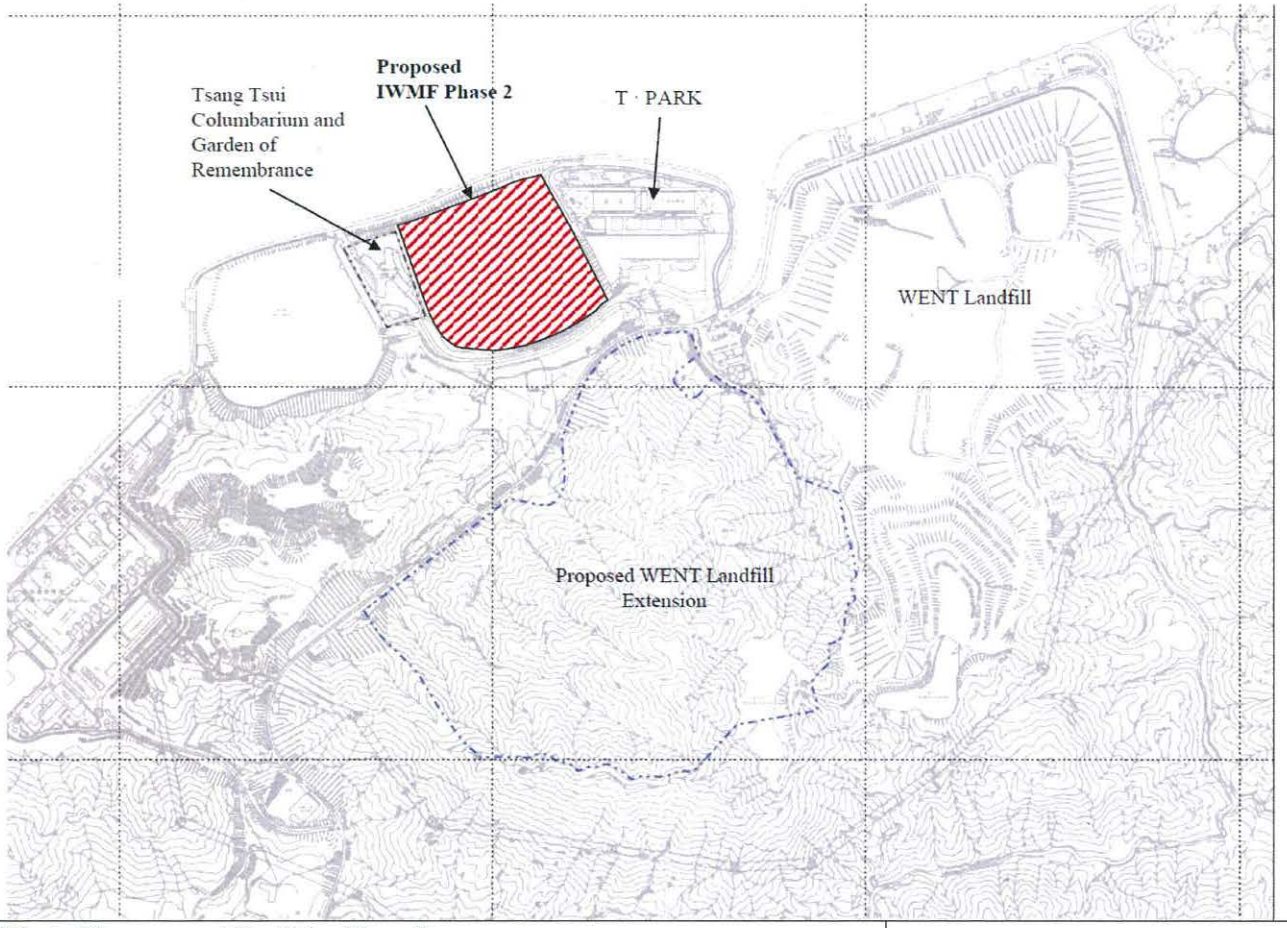
7.1 This EIA study brief includes the following appendices:

Appendix A	Project Location Plan
Appendix B	Requirements for Air Quality Impact Assessment
Appendix C	Requirements for Noise Impact Assessment
Appendix D	Requirements for Water Quality Impact Assessment
Appendix E	Requirements for Assessment of Waste Management Implications
Appendix F	Requirements for Ecological Impact Assessment (Terrestrial and Aquatic)
Appendix G	Requirements for Fisheries Impact Assessment
Appendix H	Requirements for Landscape and Visual Impact Assessment
Appendix I	Requirements for Health Risk Assessment
Appendix J	Requirements for Landfill Gas Hazard Assessment
Appendix K	Implementation Schedule of Recommended Mitigation Measures
Appendix L	Requirements for EIA Report Documents

--- END OF EIA STUDY BRIEF ---

March 2022
Environmental Assessment Division,
Environmental Protection Department

Appendix A



Development of Integrated Waste Management Facilities Phase 2 **(This figure is prepared based on Figure 1.1 of Project Profile No. PP-638/2022)** 發展綜合廢物管理設施第二期 (本圖是根據工程項目簡介 PP-638/2022 圖 1.1 編製)	**EIA Study Brief No.: ESB-353/2022** 環評研究概要編號： **Appendix A: Project Location Plan** 附錄 A：工程項目位置圖

Appendix B

Requirements for Air Quality Impact Assessment

The air quality impact assessment shall include the following:

1. Background and Analysis of Activities

   (i) Provide 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) Present background air quality levels in the assessment area for the purpose of evaluating cumulative construction and operational air quality impacts. Projection of future year background air quality can be extracted from "Pollutants in the Atmosphere and their Transport over Hong Kong" (PATH) model released by the Director. If a modification to the emission sources is to be adopted in the PATH model to update the projection of future year background air quality, details of the emission sources adopted in the modification should be clearly presented.

   (iii) Provision of an account, where appropriate, of the consideration/measures that have been taken into consideration during the planning of the Project to avoid and minimise the air pollution impact. The Applicant shall consider alternative construction methods/phasing programmes and alternative modes of operation to minimise the construction and operational air quality impact.

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

   (i) Identify and describe existing and planned/committed ASRs that would be affected by the Project, including those indicated 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, 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 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. The Applicant shall also review the development programme against the different construction stages to assess whether the occupiers of the early phases could become ASRs to be affected by the construction works of later phases.

   (ii) Provide 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 construction and operational activities in Section 1 above. Besides, if the concurrent projects within the study area are identified relevant, its possible emissions shall also be taken into account in the air quality impact assessment. Examples of construction stage emission sources include stockpiling, material handling and vehicular movements on unpaved haul

roads on site. Examples of operational stage emission sources include stack emissions from the incinerator of the Project, vehicular emissions from nearby road network, marine vessel emissions and odour emissions from transportation, storage and handling of mixed MSW, biological treatment processes of the sorting/recycling plant and the proposed wastewater treatment plant. Confirmation of validity of the assumptions and magnitude of the activities (e.g. volume of construction material handled, odour emission strength.) shall be obtained from the relevant government departments/authorities and documented. Validity of the traffic flow, vehicle fleet mix and traffic speed prediction shall be confirmed with Transport Department and documented in the EIA report.

(iii) The Applicant shall identify chimneys and obtain relevant chimney emission data in the study area by carrying out a survey for assessing the cumulative air quality impact of air pollutants through chimneys. The Applicant shall ensure and confirm that the chimney emission data used in their assessment have been validated and updated by their own survey. If there are any errors subsequently found in their chimney emission data used, the Applicant shall be fully responsible and the submission might be invalidated.

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 which may arise as a result of the works are controlled within the relevant standards as stipulated in Section 1 of Annex 4 of the TM. A monitoring and audit programme for the construction phase shall be devised to verify the effectiveness of the control measures and to ensure that the construction dust levels are brought under control.

(ii) If the Applicant anticipates that the Project will give rise to significant construction dust impacts likely to exceed recommended limits in the TM at the ASRs despite the incorporation of the dust control measures proposed in accordance with Section 3(i) above, a quantitative assessment should be carried out to evaluate the construction dust impact at the identified ASRs. The Applicant shall follow the methodology set out in Section 5 below when carrying out the quantitative assessment.

(iii) Where necessary, the Applicant shall consider and evaluate direct mitigation measures, including but not limited to water-spraying, re-scheduling construction programme to minimise concurrent dust impact arising from different construction sites, for fugitive dust control. The Applicant shall also consider connecting construction plant and equipment to mains electricity supply and avoid use of diesel generators and diesel-powered equipment as far as practicable to minimise air quality impact arising from the equipment. The Applicant shall describe the means of transportation and their routings involved, with a view to addressing potential dust nuisance caused by transportation activities. Any mitigation measures recommended for fugitive dust control should be well documented in the EIA report.

4. Operational Phase Air Quality Impact

(i) Apart from preparing a list of emission sources required in Section 2(ii) above, the Applicant shall state the target emission levels for the incinerator, and compare them with the standards specified in the Guidance Note on the Best Practicable Means for Incinerators (Municipal Waste Incineration) issued by EPD, and other relevant overseas standards. The target emission levels for the incinerator shall be agreed with the Director prior to the execution of the quantitative assessment on operational air quality impact.

(ii) The Applicant shall calculate the expected air pollutant concentrations, including toxic air pollutants such as heavy metals, VOCs, dioxins and odour, at the identified ASRs based on an assumed reasonably worst-case scenario. The evaluation shall be based on the strength of the emission sources identified in Sections 2(ii) and 4(i) above. The Applicant shall follow Section 5 below when carrying out the quantitative assessment.

(iii) 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 with reference to relevant sections of the modelling guidelines in Appendix B1 or any other methodology as agreed with the Director. The specific methodology must be documented in such level of details (preferably with tables and diagrams) to allow the readers of the assessment report to grasp how the model is set up to simulate the situation at hand without referring to the model input files. Details of the calculation of the emission rates of air pollutants for input to the modelling shall be presented in the report. The Applicant must ensure consistency between the text description and the model files. In case of doubt, prior agreement between the Applicant and the Director on the specific modelling details should be sought.

(ii) For the purpose of assessing the compliance with the criteria as stated in section 1 of Annex 4 of the TM, the Applicant shall identify the key/representative air pollutant parameters (types of pollutants such as dioxins and furans and the averaging time concentration) to be evaluated and provide explanation for choosing these parameters for the assessment of the impact of the Project.

(iii) Calculation of the relevant pollutant emission rates for input to the model and map(s) showing road links and 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) For operational phase air quality impact assessment, the air pollution impacts of road traffic shall be calculated based on the highest emission strength from the road vehicles in the assessment area within the next 15 years upon commissioning of the Project. 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. For construction phase air quality impact assessment, the Applicant shall demonstrate the use of the emission data of the road traffic represents the highest emission scenario within the construction phase concerned. The Applicant may use EMFAC-HK model released by the Director to determine the Fleet Average Emission Factors, taking into account vehicle fleet mix and other necessary data on each road section. Vehicle emissions, including running, start/idling emission, at parking sites, if any, that would contribute significantly to the overall cumulative air quality impact at nearby ASRs shall be taken into account in the assessment. Unless otherwise agreed by the Director, the latest version of the EMFAC-HK model shall be used. Use of any alternatives to the EMFAC-HK model shall be agreed with the Director. The traffic forecast data and assumptions, such as the hourly traffic volume, average speed, vehicle composition, number of trips and soaking time data, the exhaust technology fractions, vehicle age/population distribution, etc. that are used in the assessment shall be presented.

(v) Emissions from road traffic, marine traffic, other industrial sources and nearby concurrent projects within the assessment area, which contribute to the cumulative air quality impact of the identified ASRs, should be taken into account and be included in the dispersion models accepted by the Director.

(vi) For projection of future background air quality, the Applicant may use the PATH model released by the Director, taking into consideration the major air pollutant emission sources projected for Hong Kong and nearby regions. Unless otherwise agreed by the Director, the latest version of the PATH model shall be used. If any modification is made to the emission sources in PATH model or an alternative model is used, details of the emission sources adopted should be clearly presented. In general, major point sources (as listed in the following web link: https://www.epd.gov.hk/epd/sites/default/files/epd/List of major point sources v2.xlsx) located within 4 km from the identified ASRs shall be reviewed if they have direct contributions of air quality impacts to the ASRs on the concerned pollutants of the assessment. In such case, these point sources shall be simulated by dispersion model to account for their induced sub-grid scale spatial variations in background air quality. The exact approach shall be determined according to the case specific situation and subject to the agreement by the Director.

(vii) The Applicant shall calculate the overall cumulative air quality impact at the identified ASRs identified under Section 2 above and compare these results against the criteria set out in Section 1 of Annex 4 in the TM. The predicted air quality impacts shall be presented in the form of summary table 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 should be used to present pollution contour to allow buffer distance requirements to be determined properly.

6. Mitigation Measures for Air Quality Impact

(i) The Applicant shall propose remedies and mitigating measures including but not limited to pollution control technology measures (e.g. installation of air pollution control equipment at chimney exhaust, etc.) to reduce the air quality impact on the identified ASRs where the predicted air quality impact exceeds the criteria set in Section 1 of Annex 4 in the TM. 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. If these measures will result in any constraints on future land use planning outside the Project site, the Applicant shall liaise with the relevant government departments/authorities and document the agreement in the EIA Report in order to demonstrate that the proposed measures are feasible and practicable. The Applicant shall demonstrate quantitatively that the residual impacts after incorporation of the proposed mitigating measures will comply with the criteria stipulated in the TM.

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, and evaluate the residual air quality impact in accordance with section 4.4.3 and section 4.5.1(d) of the TM.

7. Submission of Emission Calculation Details and Model Files

(i) Input and output file(s) of the model run(s) including those files for generating the pollution contours and emission calculations worksheets 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 Consultant in performing the air quality assessment. The Proponent must exercise professional judgment in applying this general information.*]

The air quality modelling guidelines refer to the 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

Appendix C

Requirements for Noise Impact Assessment

1. Description of the Noise Environment

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

2. Road Traffic Noise Impact Assessment

The Applicant shall review in the EIA report the need for a noise impact assessment associated with the road traffic noise induced by the operation of the Project. A road traffic noise impact assessment is needed if the peak traffic generated by the Project would fall within night time or early morning. The following assessment requirements shall be followed if road traffic noise assessment is needed.

2.1 Road Traffic Noise Impact Assessment Methodology

The Applicant shall calculate traffic noise levels in respect of each road section and the overall noise levels from combined road sections (including existing, new/altered road sections) at the NSRs in accordance with methodology in paragraphs 5.1 of Annex 13 of the TM. The Applicant shall propose the assessment year for agreement of the Director before commencing the assessment.

2.1.1 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.

2.2 Identification of Road Traffic 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.

(b) The Applicant shall identify existing, committed and planned NSRs in the assessment area 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.

2.2.2 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.

2.3 Prediction and Evaluation of Road Traffic Noise Impact

2.3.1 Scenarios

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

(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) scenario without the Project at the assessment year;

(ii) unmitigated scenario at assessment year;

(iii) mitigated scenario at assessment year; and

(iv) prevailing scenario for indirect mitigated measures eligibility assessment

2.3.2 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.

(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.

2.4 Mitigation of Road Traffic Noise Impact

2.4.1 Direct Mitigation Measures

(a) Where the predicted road traffic noise level exceeds the criteria set in Annex 5 of the TM and at the same time is greater than that without the Project at assessment year by 1.0dB(A) or more, the Applicant shall consider and evaluate direct mitigation measures including but not limited to noise barrier/enclosure, 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.

2.4.2 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 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.

(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.

2.5 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 the 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.

Appendix D

Requirements for Water Quality Impact Assessment

1. The Applicant shall identify and analyse in the assessment physical, chemical and biological disruptions of marine, estuarine, or fresh water system(s) arising from construction and operation of the Project (including impacts arising from effluent and seawater intake/discharge outfall).

2. The Applicant shall predict, quantify and assess any water quality impacts arising from the Project on the water system(s) and the sensitive receivers by appropriate techniques proposed by the Applicant and approved by the Director. The prediction shall include possible different construction stages or sequences and different operational stages of the Project. Affected sensitive receivers shall be identified by the assessment tool with indications of degree of severity.

3. The water quality impact assessment shall cover the following, but not limited to, major areas of concern:

   (i) dredging of marine sediment for construction of berthing facility, if required;

   (ii) construction impacts of any marine works that may be identified during the course of the EIA study due to the Project, such as construction of seawater intake/discharge outfall;

   (iii) impacts of any disposal of industrial wastewater on the receiving environmental waters due to operation of the Project, such as any discharge of concentrate and backwash water from desalination plant and blowdown from cooling water system; and

   (iv) impacts of potential on-site sewage treatment and disposal facilities and other wastewater treatment facilities.

4. The Applicant shall include the following in the water quality assessment:

   (i) collection and review of background information on the existing water system(s) and the respective catchment(s);

   (ii) characterisation of water and sediment quality based on existing information or site surveys/tests as appropriate;

   (iii) identification and analysis of existing and planned future activities and beneficial uses related to the water system(s) and identification of water sensitive receivers;

   (iv) establishment of pertinent water and sediment quality objectives, criteria or standards for the water system(s) and the sensitive receivers to be affected by the Project;

   (v) review of construction sequences and methods, and operation of the Project to identify any change of existing water courses, shoreline or bathometry, flow regimes and catchment types or areas;

(vi) identification, analysis and quantification of existing and likely future water and sediment pollution sources, including point discharges and non-point sources to surface water runoff, solid and liquid wastes that may contain Toxic Pollutants including Persistent Organic Pollutants (POPs) especially dioxins and dioxin-like substances, as well as heavy metals and other contaminants, sewage and spent industrial wastewater due to construction and operation of the Project. Field investigation and laboratory tests shall be conducted as appropriate. An emission inventory on the quantities and characteristics of these pollution sources in the study area shall also be provided;

(vii) prediction and quantification of impacts on the water system(s) and the sensitive receivers that would likely be affected by the alternations and changes identified in Sections 4(v) above and the pollution sources identified in Section 4(vi) above. Both the local and regional effects on erosion, sedimentation pattern, sediment dispersion, flow regime and water quality due to any dredging of marine sediment shall be assessed. The location, nature, extent and rate of such works for the Project shall be clearly identified and evaluated. The assessment shall also take into account the additional pollution loading and oxygen demand exerted by sediment disturbed;

(viii) The Applicant shall also address the pattern of the sediment deposition and the potential increase in turbidity and suspended solid levels in the water column and at the sensitive receivers due to the disturbance of sediments during dredging. The prediction and quantification of impacts caused by sediment re-suspension and contaminants release shall be carried out by techniques to be approved by the Director;

(ix) assessment and quantification of existing and future waste water generation activities and analysis on the adequacy of existing and future sewerage infrastructure (including the proposed wastewater treatment plant);

(x) assessment of the cumulative impacts due to other related concurrent and planned projects, activities or pollution sources along the identified water system(s) and sensitive receivers that may have a bearing on the environmental acceptability of the Project. This shall include the potential cumulative construction and operation water quality impacts arising from, inter alia, the associated works of the Project, the activities and planned projects to be approved by the Director when the programme of the Project and associated works are confirmed during the course of the EIA study;

(xi) proposal for upgrading or providing any effective sewerage infrastructure (including the proposed wastewater treatment plant), water pollution prevention and mitigation measures to be implemented during construction, operational stages so as to reduce the water and sediment quality impacts to within standards. Requirements to be incorporated in the Project contract document shall also be proposed;

(xii) best management practices to reduce storm water and non-point source pollution shall be investigated and proposed as appropriate; and

(xiii) evaluation and quantification of residual impacts on the water system(s) and the sensitive receivers with regard to the appropriate water quality objectives, criteria, standards or guidelines.

Appendix E

Requirements for Assessment of Waste Management Implications

The assessment of waste management implications shall cover the following:

Analysis of Activities and Waste Generation

1. The Applicant shall identify the quantity, quality and timing of the waste arising as a result of construction and operational activities of the Project, based on the sequence and duration of these activities, e.g. any dredged / excavated sediment / mud, construction and demolition materials, floating refuse and other wastes which would be generated during construction and / or operation stage. The Applicant shall adopt the design, general layout, construction methods and programme that will minimise the generation of public fill/inert construction and demolition (C&D) materials and maximise the use of public fill/inert C&D materials for other construction works.

Proposal for Waste Management

2. 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/minimise 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/minimise 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.

3. After considering the opportunities for reducing waste generation and maximising re-use, the types and quantities of the wastes required to be disposed of as a consequence shall be estimated and the disposal methods/options for each type of the 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 item (4) below. 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

4. The impact caused by handling (including stockpiling, labelling, packaging & 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.

Dredging and Dumping

5. The Applicant shall identify and estimate dredging/excavation, dredged/excavated 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 for marine disposal option. 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 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 contamination of sediment/mud which requires special treatment/disposal is confirmed, the Applicant shall identify the appropriate treatment and/or disposal arrangement and demonstrate its viability in consultation with relevant authorities.

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

Appendix F

Requirements for Ecological Impact Assessment (Terrestrial and Marine)

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 recognized sites of conservation importance and other ecological sensitive areas. The assessment shall identify and quantify as far as possible the potential ecological impacts arising from construction and operation of the Project and in combination with those cumulative impacts from associated works of the Project.

2. The assessment shall include the following major tasks:

   (i) review and incorporate the findings of relevant previous studies/surveys and collate available information on the ecological characters of the study area;
   (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 field surveys, the duration of which shall be at least six months (covering wet and dry seasons), and investigation to verify the information collected, fill the information gaps identified in (ii) above and fulfill the objectives of the EIA study. The field surveys shall cover, but not limited to flora, fauna and any other habitats / species of conservation importance;
   (iv) present the findings of relevant studies together with surveys carried out under this Study;
   (v) 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 covering the variations of the wet and dry seasons, 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 recognized sites of conservation importance and ecologically sensitive areas, and assess whether these sites will be affected by the Project or not;
      (b) habitats maps of suitable scale (1:1000 to 1:5000) showing the types and locations of habitats in the assessment area;
      (c) ecological characteristics of each habitat type such as size, vegetation type, species present, dominant species found, species diversity and abundance, community structure, ecological value, seasonal patterns, 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;

(f) investigate and describe the existing wildlife uses of the various habitats with special attention to those wildlife groups and habitats with conservation interest, including but not limited to the following:
- woodlands
- wetlands
- natural stream courses and rivers
- vertebrates (e.g. avifauna, mammals including bats, Eurasian Otter, Chinese white dolphin, fish, herpetofauna)
- macroinvertebrates (e.g. horseshoe crabs, butterflies, odonates, crustaceans)
- coral communities (including hard corals, octocorals and black corals)
- any other habitats and wildlife groups including but not limited to uncommon plants such as *Zeuxine sp.*, and seagrass, potential breeding habitats of Little Grebe, and other avifauna species with special conservation interests, such as Little Ringed Plovers, Eurasian Coot, and White-breasted Kingfishers, Black-capped Kingfisher, Osprey and Great Crested Grebe;

(g) to describe recognised sites of conservation importance within and in the vicinity of the assessment area;

(h) using suitable methodology and considering also any works activities from other projects reasonably likely to occur at the time to identify and quantify as far as possible any direct, indirect (such as contaminants in water bodies of the Ash Lagoons due to the re-suspension and dispersion of PFA during construction and indirect ecological impacts due to potential intake of marine life, thermal pollution and antifouling agents of the cooling system), on-site, off-site, primary, secondary and cumulative ecological impacts on the wildlife groups and habitats mentioned in Section (v)(f) above, such as destruction of habitats, reduction of species abundance/diversity, loss of feeding grounds, reduction of ecological carrying capacity, habitat fragmentation and disturbance due to maintenance dredging;

(vi) demonstrate that the ecological impacts due to construction and operation of the Project are avoided by design to the maximum practicable extent;

(vii) evaluate the significance and acceptability of the ecological impacts identified using well-defined criteria based on the best and latest information available during the course of the EIA study, using quantitative approach as far as practicable and covering implementation of the Project. The evaluation shall include, but not limited to, the potential impacts of POPs, heavy metals and other contaminants due to construction and operation of the Project, if any, on natural habitats and species of conservation importance, such as Little Grebe and other avifauna species with special conservation interests as well as Chinese White Dolphins and their prey species in Deep Bay;

(viii) recommend possible alternatives options (such as minimising the footprint of the proposed development, different extension area and/or using other construction methods and sequences) and practicable mitigation measures to avoid, minimise and/or compensate for the adverse ecological impacts identified;

(ix) evaluate the feasibility and effectiveness of the recommended mitigation measures and define the scope, type, location, implementation arrangement, subsequent management and maintenance of such measures;

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

(xi) evaluate the severity and acceptability of the residual ecological impacts using well-defined criteria; and

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

Appendix G

Requirements for Fisheries Impact Assessment

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

2. The fisheries impact assessment shall cover any potential direct / indirect, on-site / off-site, short-term and long-term impacts on capture and culture fisheries during the construction and operation of the Project.

3. The fisheries impact assessment shall include the following:-

   (i) description of the physical environmental background;
   (ii) description and quantification of existing fisheries activities;
   (iii) description and quantification of existing fisheries resources / production;
   (iv) identification of parameters (e.g. water quality parameters) and areas that are important to fisheries and will be affected;
   (v) prediction and evaluation of any direct / indirect and on-site / off-site impacts on fisheries, such as loss or disturbance of fishing grounds, oyster culture area in Deep Bay, fisheries production and operations, fisheries resources and habitats, spawning grounds, artificial reefs, as well as water quality deterioration at sensitive receivers, impingement and entrainment of fisheries resources at seawater intake points, thermal pollution and discharge of antifoulants of the cooling system;
   (vi) evaluation of cumulative impacts on fisheries;
   (vii) where necessary, propose feasible, practicable and effective alternatives and / or mitigation measures; and
   (viii) review the requirement for monitoring during implementation of the Project and associated works and, if necessary, propose a monitoring and audit programme.

Appendix H

Requirements for Landscape and Visual Impact Assessment

1. The Applicant shall review relevant outline zoning plans, outline development plans, layout plans, planning briefs and studies which may identify areas of high landscape value and recommend country park, coastal protection area, green belt and conservation area designations. Any guidelines on landscape strategies, landscape frameworks, designated view corridors, open space networks, landscape links and urban design concepts 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 so as to assess whether the Project can fit into surrounding setting. Any conflict with statutory town plan(s) and any published land use plans shall be highlighted and appropriate follow-up action shall be recommended.

2. The Applicant shall describe, appraise, analyse and evaluate the existing and planned landscape resources and character of the study area. A system shall be derived for judging landscape and visual impact significance as required under the TM. Annotated oblique aerial photographs and plans of suitable scale showing the baseline landscape character areas and landscape resources and mapping of impact assessment shall be extensively used to present the findings of impact assessment. Descriptive text shall provide a concise and reasoned judgement from a landscape and visual point of view. The sensitivity of the landscape framework and its ability to accommodate change shall be particularly focused on. The Applicant shall identify the degree of compatibility of the Project with the existing and planned landscape settings. The landscape impact assessment shall quantify the potential landscape impact as far as possible so as to illustrate the significance of such impacts arising from the proposed development. Clear mapping of the landscape impact is required. A broad brush tree survey, survey on Old and Valuable Trees (OVTs) and trees of particular interest within the assessment area shall be carried out and the impacts on existing trees shall be addressed.

3. The Applicant shall assess the visual impacts of the Project. A system shall be derived for judging visual impact significance as required under the TM. Clear illustrations including mapping of visual impact are required. The assessment shall include the following:

   (i) identification and plotting of visual envelope of the Project;
   (ii) identification of the key groups of sensitive receivers within the visual envelope with regard to views from ground level, sea level and elevated vantage points;
   (iii) description of the visual compatibility of the Project with the surrounding, the existing and the planned setting, and its obstruction and interference with the key views within the visual envelope;
   (iv) description of the severity of visual impacts in terms of distance, nature and number of sensitive receivers. The visual impacts of the Project with and without mitigation measures shall also be included so as to demonstrate the effectiveness of the proposed mitigation measures; and
   (v) clear evaluations and explanations of the 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 if it will be affected by the Project. In addition, alternative location, site layout, 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 the adverse effects identified above, including provision of a landscape design.

5. The mitigation measures shall include preservation of vegetation, transplanting of mature trees, provision of screen planting, re-vegetation of disturbed lands, compensatory planting, woodland restoration, design of structure, provision of finishes to structure, colour scheme and texture of materials used and any measures to mitigate the impact on existing and planned land uses and visually sensitive receivers. Parties shall be identified for the ongoing management and maintenance of the proposed mitigation works to ensure their effectiveness throughout the operational phase of the Project. A practical programme and funding proposal for the implementation of the recommended measures shall be provided.

6. Annotated illustration materials such as coloured perspective drawings, plans and section/elevation diagrams, annotated oblique aerial photographs, photographs particularly taken at vantage points and computer-generated photomontage shall be adopted to fully illustrate the landscape and visual impacts of the Project to the satisfaction of Director. 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 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 effectiveness of the proposed mitigation measures. Computer graphics shall be compatible with Microstation DGN file format. The Applicant shall record the technical details such as system set-up, software, data files and function in preparing the illustration that may need to be submitted for verification of the accuracy of the illustrations.

Appendix I

Requirements for Health Risk Assessment

1. The health risk assessment shall include the following key steps:

   (i) a systematic identification of the risks from the handling, storage, transport and disposal (including accidental or disastrous release) of solid and liquid wastes that may contain Toxic Pollutants including POPs, especially dioxin and dioxin-like substances as incineration by-products; and the risks, especially from the radon emissions, of the excavation, filling, handling, storage, transport and disposal of PFA arising from construction and operation of IWMF;

   (ii) an assessment of the likelihood and consequences of exposure to aerial emissions and solid and liquid wastes that may contain Toxic Pollutants including POPs, especially dioxin and dioxin-like substances;

   (iii) an identification of means by which the risks could be further reduced; and

   (iv) recommendation of reasonably practicable measures to reduce risks during the construction and operation of the Project.

2. The health risk assessment shall be based on established practices in countries around the world. A literature search shall be carried out to determine the best approach for the risk assessment, including any codes of practices, guidelines etc. applied locally in Hong Kong and elsewhere in the world. The approach shall be agreed by the Director prior to the commencement of assessment.

3. The environmental health risk assessment on Toxic Pollutants including POPs, especially dioxins and dioxin-like substances, shall include pathways by which the Toxic Pollutants including POPs may enter the human body, including inhalation and direct dermal contact which may be contaminated by the Toxic Pollutants including POPs emitted from IWMF and relevant existing, committed and planned sources.

4. It is also necessary to perform a quantitative environmental health risk assessment for the risk of exposure to and the potential impacts from the release of Toxic Pollutants including POPs, especially dioxins and dioxin-like substances, from the operation of the Project. The assessment shall also include risk of exposure to and the potential impacts from release of Toxic Pollutants including POPs through stack emissions, as well as the handling, storage, transport and disposal of any solid or liquid wastes that may contain Toxic Pollutants including POPs during operation of the Project. Any mitigation measures recommended should be aimed to minimise the environmental health risks from the release of Toxic Pollutants including POPs during operation of the Project.

Appendix J

Requirements for Landfill Gas Hazard Assessment

1. The Applicant shall assess the potential risks of landfill gas during construction and operation of the Project. The Applicant shall follow the guidelines as stated respectively in Annex 7 and Annex 19 of the TM and the Landfill Gas Hazard Assessment Guidance Note issued by the Director for evaluating and assessing landfill gas hazards.

2. The landfill gas hazards assessment shall entail two main components, which are qualitative risk assessment and landfill gas precautionary/protection design. Specifically, the assessment shall include the following technical tasks:

   (i) review of background information and studies related to the West New Territories Landfill Extension;
   (ii) identification of the nature and extent of the sources, including the likely concentrations/amounts of hazardous emissions which might have the potential for causing impacts on the Project;
   (iii) identification of possible pathways through the ground, underground cavities, utilities or groundwater and the nature of these pathways through which hazardous emissions must traverse if they were to reach the facilities within the Project site;
   (iv) identification of the potential targets associated with the proposed facilities which are sensitive to the impacts of the hazardous emissions;
   (v) qualitative assessment on the degrees of risk which the hazardous emissions may pose to the target for each of the source-pathway-target combinations;
   (vi) design of suitable level of precautionary measures and the types of protection measures for construction and operation of the Project; and
   (vii) identification of monitoring requirement for assessing the adequacy and performance of the implemented protection measures.

Appendix K

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 L

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 item (i) above as required under section 7(1) of the EIAO, to be supplied upon advice by the Director for public inspection.

   (iii) 20 copies of the EIA report and 50 copies of the executive summary (each bilingual in both English and Chinese) with or without Addendum as required under section 7(5) of the EIAO, to be supplied upon advice by the Director for consultation with the Advisory Council on the Environment.

2. In addition, to facilitate public inspection of EIA report via EIAO Internet Website, the Applicant shall provide electronic copies of both the EIA report and executive summary prepared in Hyper Text Markup Language (HTML) and in Portable Document Format (PDF), unless otherwise agreed by the Director. For both of the HTML and PDF versions, a content page capable of providing hyperlink to each section and sub-section of the EIA report and executive summary shall be included in the beginning of the document. Hyperlinks to figures, drawings and tables in the EIA report and executive summary shall be provided in the main text from where respective references are made. The EIA report, including drawings, tables, figures and appendices shall be viewable by common web-browsers including Internet Explorer 8, Firefox 23, Chrome and Safari 8 or later versions as agreed by the Director, and support languages including Traditional Chinese, Simplified Chinese and English.

3. The electronic copies of the EIA report and the executive summary shall be submitted to the Director at the time of application for approval of the EIA report.

4. When the EIA report and the executive summary are made available for public inspection under section 7(1) of the EIAO, the content of the electronic copies of the EIA report and the executive summary must be the same as the hard copies and the Director shall be provided with the most updated electronic copies.

5. To promote environmentally friendly and efficient dissemination of information, both hardcopies and electronic copies of future EM&A reports recommended by the EIA study shall be required and their format shall be agreed by the Director.