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OUR REF: ( ) to EP 2/G/S3/175
來函檔號
YOUR REF: ( ) in CEDD-SLO-15-4005-010EM(R)-P002
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TEL. NO.:
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24 December 2021

By Register Post & Fax

Sustainable Lantau Office,
Civil Engineering and Development Department,

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

Project Title: Kau Yi Chau Artificial Islands Development
(Application No. ESB-350/2021)

I refer to your above application received on 11 November 2021 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-350/2021) 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. Becky LAM (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" **(Attachment 1)** 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.

The Legislative Council passed the Air Pollution Control (Amendment) Bill 2021 on 28 April 2021 to adopt the new Air Quality Objectives which are scheduled to come into effect on 1 January 2022. I would like to draw your attention to the attached general notice entitled "The new Air Quality Objectives and assessment of air quality impact of a project under the Environmental Impact Assessment Ordinance (Cap. 499)" (**Attachment 2**).

Should you have any queries on the above application, please contact my colleague Mr. Flora NG at 2835 2319.

Yours sincerely,

(Victor YEUNG)
Principal Environmental Protection Officer
for Director of Environmental Protection

Encl.

c.c. (w/o encl.)
ACE EIA Subcommittee Secretariat (Attn: Ms. Becky LAM

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

Attachment 2

The New Air Quality Objectives
and assessment of air quality impact of a project under
the Environmental Impact Assessment Ordinance ("EIAO") (Cap. 499)

The Legislative Council passed the Air Pollution Control (Amendment) Bill 2021 on 28 April 2021 to –

(a) adopt the new Air Quality Objectives ("AQOs"), at **Annex A**, with effect from 1 January 2022 in respect of the Air Pollution Control (Amendment) Ordinance 2021 and EIAO;

(b) in relation to the EIAO, provide a transitional period to the effect that, for a project in respect of which an environmental permit ("EP") has been issued under the EIAO before 1 January 2022, the new AQOs will not apply to an application for variation of an EP submitted within 36 months from 1 January 2022;

(c) introduce an administrative measure that **new Government projects** for which EIA studies have not yet commenced should endeavour to adopt the new AQOs as far as practicable; and

(d) on a best endeavours basis, a more stringent standard of 24-hour AQO for fine suspended particulates (FSP/$PM_{2.5}$) at a concentration level of 50 $\mu g/m^3$ and the number of allowable exceedances of **18 days** per calendar year (in lieu of 35 days per calendar year as set out in the Amendment Bill) as the benchmark for conducting air quality impact assessment under the EIA studies.

2. As a general principle, a public officer shall apply the law prevailing at the time when he makes a decision. Hence, the Environmental Protection Department (EPD) will make the relevant decision under the EIAO based on the AQOs prevailing at the time of the decision. Some examples of decisions made under the EIAO are the decisions under –

(a) section 5(9), 5(10) and 5(11) as to whether to grant the permission to apply directly for an EP;

(b) section 6(3) of the EIAO as to whether an EIA report meets the requirements of the study brief and the Technical Memorandum ("TM") issued under the EIAO;

(c) section 8(3) of the EIAO as to whether to approve an EIA report;

(d) section 10(3) of the EIAO as to whether to issue an EP; and

(e) section 13 of the EIAO as to whether to grant a variation of an EP (subject to the transitional provision referred to in paragraph 1(b) above).

Application for approval of EIA report, permission to apply directly for an EP, EP, and variation of EP

3. It is important to note that the decision of EPD under the EIAO would be based on the AQOs prevailing **at the time of the decision**, not the time when the study brief of a project is issued or the time when an application under the EIAO is submitted. After an EIA report has been submitted to EPD, we may need to consult the relevant authorities pursuant to section 9.1 of the TM. Where EPD considers that the EIA report meets the requirements of the study brief and the TM, the EIA report will need to be exhibited for public inspection and may need to be sent to the Advisory Council on the Environment. Usually it takes about 6 months before EPD decides whether to approve an EIA report. The time taken will be longer if EPD needs to seek additional information from the applicant. Hence it is possible that an EIA report submitted to EPD before the new AQOs come into operation on 1 January 2022 may be considered suitable for public inspection under the existing AQOs, but the decision as to whether to approve the EIA report will be made based on the new AQOs if and when EPD makes that decision on or after 1 January 2022 as to whether to approve the EIA report. The same applies to cases where an application for permission to apply directly for an EP is submitted to EPD before the new AQOs come into operation on 1 January 2022, but the decision as to whether to grant the permission will be made based on the new AQOs if and when EPD makes that decision on or after 1 January 2022.

4. There may also be cases where the EIA report of a project has been approved or the permission to apply directly for an EP has been granted under the existing AQOs, but EPD will make the decision as to whether to issue the EP for the construction and / or operation of the project based on the new AQOs, if that decision is made on or after 1 January 2022. Similarly, there may also be cases where the EP of a project has been issued under the existing AQOs, but EPD will make the decision as to whether to grant a variation of the EP based on the new AQOs if that decision is made on or after 1 January 2022 (subject to the transitional provision referred to in paragraph 1(b) above).

5. If you are (or you are involved in) preparing or planning to prepare an application for approval of an EIA report, permission to apply directly for an EP, EP or variation of EP under the EIAO, you may wish to bear in mind the above and consider carefully whether your project may require decisions under the EIAO to be made after the new AQOs come into operation on 1 January 2022. If such an application is submitted after the new AQOs have come into operation, it has to contain adequate information demonstrating meeting the new AQOs. If an EIA report is submitted before the new AQOs come into operation, having regard to the possibility that decisions in relation to your project under the EIAO may be made after the new AQOs have come into operation (i.e. on or after 1 January 2022), you may consider including in the EIA report additional information to demonstrate meeting the new AQOs so that the EIA report will remain adequate for supporting future decisions of this department which may be made after the new AQOs have come into operation. Otherwise, you may be required to prepare a new EIA report with the information needed to demonstrate meeting the new AQOs.

Air quality impact assessment

6. To help those who wish to carry out an air quality assessment using the new AQOs as the criteria, this department has updated the guidelines on air quality modelling and vehicle emission calculation. They are available together with other existing guidelines at the following links:

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

7. If you have any question on air quality impact assessment using the new AQOs as the criteria, you are welcome to contact our Ms. Emily Cheng at 2835 1221.

Enquiry

8. For matters on application for approval of EIA report, EP, and variation of EP, please feel free to contact our Ms. Clara U at 2835 1837.

Annex A

The New Air Quality Objectives for Hong Kong

Pollutants	Averaging Time	Concentration ($\mu g/m^3$)	No. of exceedances allowed per calendar year
Sulphur Dioxide (SO_2)	10-minute	500	3
	24-hour	**50**	3
Respirable Suspended Particulates (RSP/PM_{10})	1-year	50	Not applicable
	24-hour	100	9
Fine Suspended Particulates ($FSP/PM_{2.5}$)	1-year	**25**	Not applicable
	24-hour	**50**	**35**
Nitrogen Dioxide (NO_2)	1-year	40	Not applicable
	1-hour	200	18
Ozone (O_3)	8-hour	160	9
Carbon Monoxide (CO)	1-hour	30,000	0
	8-hour	10,000	0
Lead (Pb)	1-year	0.5	Not applicable

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

ENVIRONMENTAL IMPACT ASSESSMENT STUDY BRIEF NO. ESB-350/2021

PROJECT TITLE: **Kau Yi Chau Artificial Islands Development**
(hereinafter known as the "Project")

NAME OF APPLICANT: **Civil Engineering and Development Department**
(hereinafter known as the "Applicant")

1. BACKGROUND

1.1 An application (No. ESB-350/2021) for an Environmental Impact Assessment (EIA) Study Brief under Section 5(1)(a) of the Environmental Impact Assessment Ordinance (EIAO) was submitted by the Applicant on 11 November 2021 with a Project Profile (No. PP-634/2021) (hereinafter referred as the "Project Profile").

1.2 The Applicant proposes to conduct a planning and engineering study on Kau Yi Chau Artificial Islands (KYCAI) Development to determine the scale, scope, land use, boundaries, feasibility and details of infrastructure works required for the development on the reclaimed KYCAI. The development area of the Project is about 1,000 hectares to accommodate about 400,000 to 700,000 people together with about 200,000 employment upon full development. The approximate location of the Project is shown in the figure attached in the Project Profile which is reproduced in **Appendix A** of this EIA Study Brief.

1.3 The Applicant indicated in the Project Profile that the boundaries of the Project are tentative and indicative only, which will be subject to review during the course of the planning and engineering study, and the development within the KYCAI will be conducted in phases hence requires coordinated planning to interface with the projects "Reclamation for KYCAI" and "Hong Kong Island – Northeast Lantau Link".

1.4 The Project is a designated project (DP) under Item 1 of Schedule 3 of the EIAO, which specifies "Engineering feasibility study of urban development projects with a study area covering more than 20 ha or involving a total population of more than 100,000". The Project also includes individual works items that may fall under Schedule 2 of the EIAO which shall be identified in the course of the EIA study. Based on the information provided in the Project Profile, the proposed works identified as potential DPs in Part I, Schedule 2 of the EIAO include the following :

(i) Item A.1 - A road which is an expressway, trunk road, primary distributor road or district distributor road including new roads, and major extensions or improvements to existing road;

(ii) Item A.2 - A railway and its associated stations;

(iii) Item A.4 - A railway siding, depot, maintenance workshop, marshalling yard or good yard;

(iv) Item A.6 - A transport depot located less than 200m from the nearest boundary of any existing or planned (a) residential area; (b) place of worship; (c) educational institution; or (d) health care institution;

(v) Item A.7 - A road or railway tunnel more than 800m in length between portals;

(vi) Item A.8 - A road or railway bridge more than 100 m in length between abutments;

(vii) Item A.9 - A road fully enclosed by decking above and by structure on the sides for more than 100m;

(viii) Item B.2 - A helipad within 300 m of existing or planned residential development;

(ix) Item C.1 - Reclamation works (including associated dredging works) more than 5 ha in size;

(x) Item C.2 - Reclamation works (including associated dredging works) more than 1 ha in size and a boundary of which---

(a) is less than 500 m from the nearest boundary of an existing or planned---
(i) site of special scientific interest;
(ii) site of cultural heritage;
(iii) bathing beach;
(iv) marine park or marine reserve;
(v) fish culture zone;
(vi) wild animal protection area;
(vii) coastal protection area;
(viii) conservation area;
(ix) country park; or
(x) special area;

(b) is less than 100 m from a seawater intake point; or

(c) is less than 100 m from an existing residential area.

(xi) Item C.3 - Reclamation works (a) resulting in 5% decrease in cross sectional area calculated on the basis of 0.0 mPD in a sea channel or (b) occupying an area on plan in excess of 10% of any enclosed or semi-enclosed waterbody;

(xii) Item C.4 - A breakwater more than 1 km in length or breakwaters extending into a tidal flushing channel by more than 30% of the channel width;

(xiii) Item C.12 - A dredging operation exceeding 500,000m^3 or a dredging operation which---

(a) is less than 500m from the nearest boundary of an existing or planned---
(i) site of special scientific interest;
(ii) site of cultural heritage;
(iii) bathing beach;
(iv) marine park or marine reserve;
(v) fish culture zone;
(vi) wild animal protection area;
(vii) coastal protection area; or
(viii) conservation area; or

(b) is less than 100m from a seawater intake point;

(xiv) Item E.2 - Water treatment works with a capacity of more than 100,000m^3 per day;

(xv) Item E.3 - A submarine water supply pipeline with a diameter of 1,200 mm or more and a length of more than 1 km;

(xvi) Item F.1 - Sewage treatment works with an installed capacity of more than 15,000 m^3 per day;

(xvii) Item F.2 - Sewage treatment works---
(a) with an installed capacity of more than 5,000 m^3 per day; and
(b) a boundary of which is less than 200 m from the nearest boundary of an existing or planned---
(i) residential area;
(ii) place of worship;
(iii) educational institution;
(iv) health care institution;
(v) site of special scientific interest;
(vi) site of cultural heritage;

(xviii) Item F.3 - A sewage pumping station---
(a) with an installed capacity of more than 300,000 m^3 per day; or
(b) with an installed capacity of more than 2,000 m^3 per day and a boundary of which is less than 150 m from an existing or planned---
(i) residential area;
(ii) place of worship;
(iii) educational institution;
(iv) health care institution;
(v) site of special scientific interest;
(vi) site of cultural heritage;

(xix) Item F.4 - An activity for the reuse of treated sewage effluent from a treatment plant;

(xx) Item F.5 - A submarine sewage pipeline with a diameter of 1,200mm or more and a length of 1 km or more;

(xxi) Item F.6 - A submarine sewage outfalls;

(xxii) Item G.2 - A refuse transfer station;

(xxiii) Item G.3 - An incinerator with an installed capacity of more than 50 tonnes per day;

(xxiv) Item G.4 - A waste disposal facility (excluding any refuse collection point), or waste disposal facilities, for
(a) reuse; or
(b) chemical, industrial or special wastes;

(xxv) Item H.1 - A 400 kV electricity substation and transmission line;

(xxvi) Item I.2 - A flood storage pond more than 10 ha in size;

(xxvii) Item K.5 - A cement works or concrete batching plant with a total silo capacity of more than 10,000 tonnes in which cement is handled and manufactured;

(xxviii) Item K.13 - A dangerous good godown with a storage capacity exceeding 500 tonnes; and

(xxix) Item O.7 - An outdoor sporting facility with a capacity to accommodate more than 10,000 persons.

1.5 Pursuant to Section 5(7)(a) of the EIAO, the Director of Environmental Protection (the Director) issues this EIA Study Brief to the Applicant to carry out an EIA study.

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

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

(ii) the conditions and requirements for the detailed design, construction and operation of the Project to mitigate against adverse environmental consequences wherever practicable; and

(iii) the acceptability of residual impacts after the proposed mitigation measures are implemented.

1.7 Apart from this application, on 11 November 2021 the Applicant submitted two other EIA Study Brief applications (Nos. ESB-349/2021 and ESB-351/2021) with project profiles (Nos. PP-633/2021 and PP-635/2021) respectively. The other two projects are namely "Reclamation for Kau Yi Chau Artificial Islands" (hereinafter known as the "Reclamation for KYCAI") and "Hong Kong Island – Northeast Lantau Link" (hereinafter known as the "HKI-NEL Link"). According to the applications, though these three projects are inter-related, their implementation time-frame would be different with the Project being the last one to be completed. To enable reasonable assessment and consideration of the interface issues and cumulative impacts arising from these three projects, the EIA study of the Project will take on board the interface issues and environmental impacts arising from the "Reclamation for KYCAI" and the "HKI-NEL Link" when assessing the cumulative impacts. Under this arrangement, EIA reports of the three EIA Studies will also be considered for approval in the same sequence.

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 Project;

(ii) to identify and describe the elements of the community and environment likely to be affected by the Project, and/or likely 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 potentially affected uses, and to propose measures to mitigate these impacts;

(iv) to identify and quantify waste management requirements and to propose measures to mitigate these impacts;

(v) to identify and quantify potential losses or damage to flora, fauna and natural habitats, and to propose measures to mitigate these impacts;

(vi) to identify and quantify the fisheries impacts and to propose measures to mitigate these impacts;

(vii) to identify potential landscape and visual impacts and to propose measures to mitigate these impacts;

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

(ix) to identify and quantify potential hazard to life and to propose measures to mitigate these impacts;

(x) to identify any potential human health impacts and to propose measures to mitigate these impacts;

(xi) to propose the provision of infrastructure or mitigation measures to minimise pollution, environmental disturbance and nuisance during construction and operation of the Project;

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

(xiii) to identify, predict and evaluate the residual (i.e. after practicable mitigation) environmental impacts and the cumulative effects expected to arise during construction and operation 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 these residual environmental impacts and cumulative effects and reduce them to acceptable levels;

(xv) to investigate the extent of any 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;

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

(xvii) to identify any additional studies necessary to implement the mitigation measures or monitoring and proposals recommended in the EIA report; and

(xviii) to identify DP(s) listed under Schedule 2 of the EIAO as part of the Project for assessment under the EIA study.

3. DETAILED REQUIREMENTS OF THE EIA STUDY

3.1 The Purpose

3.1.1 The purpose of this EIA Study Brief is to set out the purposes and objectives of the EIA study, the scope of environmental issues which shall be addressed, the requirements that the EIA study shall need to fulfil, and the necessary procedural and reporting requirements. The Applicant shall demonstrate in the EIA report 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 associated works mentioned in Sections 1.2 and 1.3 of this EIA Study Brief. 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) environmental benefits and dis-benefits of land use and layout options under different development scenarios, design and construction methods of the Project. Particular attention shall be given to the acceptability of the overall environmental performance of the Project at various stages of implementation and cumulative effects due to interfacing existing, committed and planned projects in the vicinity of the Project;

(ii) potential air quality impacts on existing and planned air sensitive receivers (ASRs) during construction and operation of the Project. Consideration shall be given to assessing the air quality impacts during different phases of the Project on the ASRs of the development upon population intake;

(iii) potential noise impacts on existing and planned noise sensitive receivers (NSRs) during construction and operation of the Project. Consideration shall be given to assessing the noise impacts during different phases of the Project on the residents of the development upon population intake;

(iv) potential water quality impacts on water sensitive receivers (WSRs) and the relevant water system(s) in the vicinity during construction and operation of the Project;

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

(vi) potential waste management implications arising from the construction and operation of the Project, including the monitoring/management measures to prevent disposal of construction and demolition (C&D) materials at places other than designated outlets;

(vii) potential ecological impacts (terrestrial and marine) arising from the construction and operation of the Project;

(viii) potential fisheries impacts arising from the construction and operation of the Project;

(ix) potential landscape and visual impacts arising from the construction and operation of the Project;

(x) potential cultural heritage impacts arising from the construction and operation of the Project;

(xi) potential hazard to life during construction and operation of the Project;

(xii) potential human health impacts during construction and operation of the Project;

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

(xiv) identification of individual DPs proposed under the Project that fall under Schedule 2 of the EIAO, in addition to those mentioned in Section 1.4 of this EIA Study Brief, including any construction and operation of railway and its associated stations, transport depot, helipad, waste disposal facility, facility for the treatment of construction waste, etc.; to ascertain whether the findings of this EIA study have adequately assessed and addressed the environmental impacts of those DPs; and where necessary to identify the outstanding issues that need to be assessed and addressed in any further detailed EIA studies.

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, including the proposed siting, scale, layout design, construction methods, sequence of construction works, and other major activities involved in the construction of the Project, using diagrams, plans and/or maps as necessary. The estimated duration of the construction and operation phases 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. The uses of the Project shall be described and the different land use areas shall be demarcated as appropriate.

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 land use options. The options might include consideration of alternative design, siting and alignment of supporting infrastructures, construction methods and sequence of construction works of the Project, etc. The key reasons for selecting the proposed land use and layout 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 relevant environmental aspects of the activities 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 and associated works with interacting projects, including staged implementation of the Project and 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 impacts as stated in Section 1 of Annex 4 and Annex 12 of the TM respectively.

3.4.3.2 Unless otherwise agreed by the Director, the assessment area for the air quality impact assessment shall be defined by a distance of 500 metres from the boundary of the Project area 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 identified to have a bearing on the environmental acceptability of the Project. The assessment area shall be further extended to cover a larger area of impact to be agreed by the Director if any large fixed emission source(s) such as waste-to-energy facility is identified in the Project area. The assessment shall include the existing, committed and planned sensitive receivers within the assessment area as well as any proposed ASRs within the Project and areas where air quality may be potentially affected by the Project. The assessment shall be based on the best available information at the time of the assessment. Besides, the assessment shall also take into account the impacts of emission sources from nearby concurrent projects.

3.4.3.3 The assessment of the air quality impacts 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 impacts as stated in Annexes 5 and 13 of the TM respectively.

3.4.4.2 The assessment area for the noise impact assessment shall be defined by a distance of 300m from the boundary of the Project and works of the Project as defined in the EIA study. Assessment shall include construction noise, road traffic noise, rail noise, fixed noise sources, helicopter noise, marine traffic noise and aircraft noise impacts on the existing, committed and planned NSRs in the vicinity of the Project.

3.4.4.3 The assessment of noise impacts from construction and operation of the Project shall follow the detailed technical requirements given in **Appendix C** of this EIA Study Brief.

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 areas within 500 metres from the boundary of the Project, and shall be extended to cover WSRs within the North Western Water Control Zone, Western Buffer Water Control Zone, Victoria Harbour Water Control Zone and Southern Water Control Zone as designated under the Water Pollution Control Ordinance (Cap. 358) and other areas, if the WSRs within these areas are found also being impacted by and have a bearing on the environmental acceptability of the Project.

3.4.5.3 The assessment of water quality impacts from construction and operation of the Project shall follow the detailed technical requirements given in **Appendices D and D-1** of this EIA Study Brief.

3.4.6 Sewerage and Sewage Treatment Implications

3.4.6.1 The Applicant shall follow the criteria and guidelines for evaluating and assessing impacts on the downstream or nearby public sewerage, sewage treatment and disposal facilities available as stated in Section 6.5 in Annex 14 of the TM.

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

3.4.7 Waste Management Implications

3.4.7.1 The Applicant shall follow the criteria and guidelines for evaluating and assessing waste management implications arising from construction and operation of the Project as stated in Annexes 7 and 15 of the TM respectively.

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

3.4.8 Ecological Impact (Terrestrial and Marine)

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

3.4.8.2 The assessment area for assessing terrestrial and marine ecological impact shall include areas within 500 metres from the boundary of the Project area and any other areas with

significant hydrodynamics and water quality 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 ecological impact assessment of the Project shall follow the detailed technical requirements given in **Appendix G** of this EIA Study Brief.

3.4.9 **Fisheries Impact**

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

3.4.9.2 The assessment area for assessing fisheries impact shall include areas within 500 metres from the boundary of the Project area and any 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.

3.4.9.3 The assessment of fisheries impacts 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 **Landscape and Visual Impact**

3.4.10.1 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. 8/2020 "Preparation of Landscape and Visual Impact Assessment under the EIAO".

3.4.10.2 The assessment area for the landscape impact assessment shall include areas within 500 metres from the boundary of the Project area 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 defined envelope shall be shown on a plan in the EIA report.

3.4.10.3 The assessment of landscape and visual impacts from construction and operation of the Project shall follow the detailed technical requirements given in **Appendix I** of this EIA Study Brief.

3.4.11 **Impact of Cultural Heritage**

3.4.11.1 The Applicant shall follow the criteria and guideline for evaluating and assessing the cultural heritage impacts as stated in Section 2 of Annex 10 and Section 2 of Annex 19 of the TM respectively.

3.4.11.2 The assessment area for the cultural heritage impact assessment shall include areas within 500 metres from the boundary of the Project area and the works of the Project as identified in the EIA. The cultural heritage impact assessment shall include an Archaeological Impact Assessment (AIA) and a Marine Archaeological Investigation (MAI) for construction and operation of the Project. The findings of previous archaeological investigations and studies conducted within and in the vicinity of the Project area shall be reviewed to identify the potential for archaeological resources. It shall follow the detailed technical requirements given in **Appendices J** and **J-I** of this EIA Study Brief.

3.4.12 **Hazard To Life**

3.4.12.1 The Applicant shall follow the criteria for evaluating hazard to life as stated in Annex 4 of the TM.

3.4.12.2 The hazard to life assessment for construction and operation of the Project shall follow the detailed technical requirements given in **Appendix K** of this EIA Study Brief.

3.4.13 **Health Impact**

3.4.13.1 The Applicant shall conduct a review to identify Project elements with potential health impact which may have a bearing on the environmental acceptability of the Project, such as reuse of treated sewage effluent, and facilities with Toxic Air Pollutants (TAP) emissions (e.g. waste-to-energy facilities). The Applicant shall submit the review findings, including any proposed mitigation measures to minimise such impacts and an emission inventory of potential TAP emissions if applicable to the Director. This is for the Director to agree on whether a health impact assessment is required to evaluate the potential health impact on human prior to the commencement of the assessment. In the event that a health impact assessment is required, the Applicant shall submit a methodology statement to provide with justifications on the scope, approach and methodology to be adopted for the agreement of the Director prior to the commencement of the assessment.

3.4.13.2 The health impact 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.

3.4.13.3 Any mitigation measures recommended should be aimed to minimise the environmental health risks from treated sewage effluent reuse activities and the release of TAP during operation of the Project.

3.5 Environmental Monitoring and Audit (EM&A) Requirements

3.5.1 The Applicant shall identify and justify in the EIA study whether there is any need for EM&A activities during the construction and operation the Project (including the associated decommissioning works), and, if affirmative, to define the scope of the EM&A requirements for the Project in the EIA study.

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

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

3.6 Presentation of Summary Information

3.6.1 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.

3.6.2 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.

3.6.3 Documentation of Key Assessment Assumptions and Limitations, 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 component. The proposed use of any alternative assessment tool(s) or assumption(s) has 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.

3.6.4 Summary of Alternative Options and Mitigation Measures

The EIA report shall contain a summary of alternative development scenarios and mitigation measures considered during the course of the EIA study, including design, scale/size of the above-ground structures, extent, land use/layout options and mode of operation as well as construction methods, disposal/treatment methods and sequences of works for the Project, with a view to avoiding or minimizing adverse environmental impacts. A comparison of the environmental benefits and dis-benefits of applying different development scenarios and mitigation measures 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.

3.6.5 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 from 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. REPORTING REQUIREMENTS

5.1 In preparing the EIA report, the Applicant shall refer to Annex 11 of the TM for the contents of an EIA report. The Applicant shall also refer to Annex 20 of the TM, which stipulates the guidelines for the review of an EIA report. 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 this 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 M** f 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 key findings of the EIA report so that the public can better understand the Project and the associated environmental issues. The EIA findings to be included in the 3-dimensional presentation shall be agreed with EPD and may include baseline environmental information, the environmental situations with or without the Project including the associated works, supporting facilities and essential infrastructures; key mitigated and unmitigated environmental impacts; key recommended environmental mitigation measures. 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 (e.g., Virtual Reality, Augmented Reality, Mixed Reality, etc.) 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 Sections 1.2 and 1.3 of this EIA Study Brief and in the Project Profile (No. PP-634/2021), the Applicant must seek confirmation from the Director in writing on whether or not the scope of issues covered by this EIA Study Brief can still cover the key changes, and the additional issues, if any, that the EIA study must also address. If the changes to the Project fundamentally alter the key scope of this EIA Study Brief, the Applicant shall apply to the Director for a fresh EIA Study Brief.

7. LIST OF APPENDICES

7.1 This EIA Study Brief includes the following appendices:

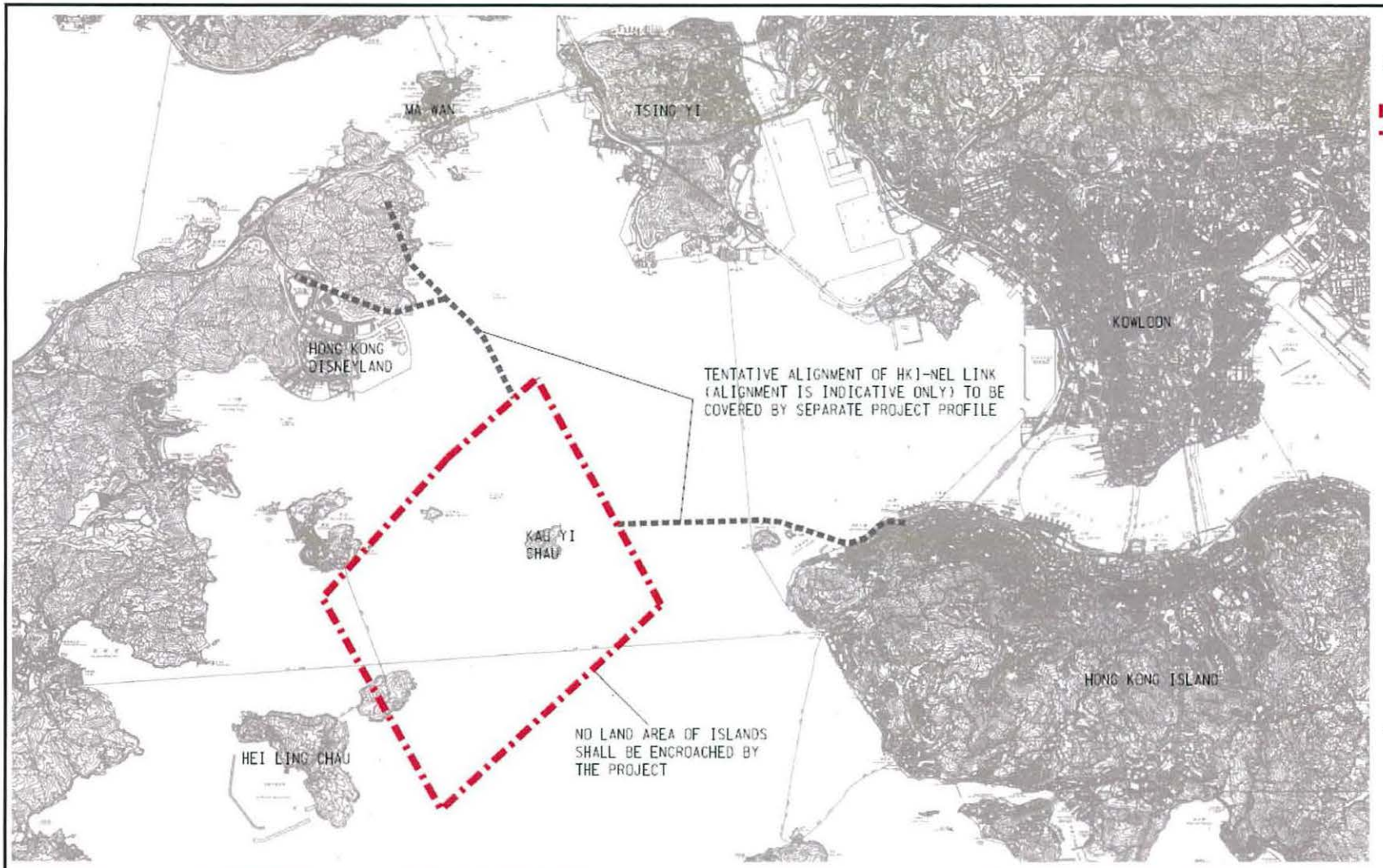
Appendix A – Project Location Plan
Appendix B – Requirements for Air Quality Impact Assessment
Appendix B-1 – Air Quality Modelling Guidelines
Appendix C – Requirements for Noise Impact Assessment
Appendix D – Requirements for Water Quality Impact Assessment

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

--- END OF EIA STUDY BRIEF ---

December 2021
Environmental Assessment Division
Environmental Protection Department

Appendix A



Project Title : Kau Yi Chau Artificial Islands Development
工程項目名稱 ：交椅洲人工島發展
(This figure is prepared based on Figure 1.1 of Project Profile No.: PP-634/2021)
(本圖是根據工程項目簡介PP-634/2021 圖 1.1 編製)

EIA Study Brief No. :
環評研究概要編號 ： **ESB-350/2021**

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) Provision of background information relating to air quality issues relevant to the Project, e.g., description of the types of activities of the Project that may affect air quality during construction and operation of the Project.

   (ii) 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 impacts. The Applicant shall consider alternative construction methods, phasing programmes and alternative modes of operation to minimise the air quality impacts during construction and operation of the Project.

   (iii) Present the background air quality levels in the assessment area for the purpose of evaluating the cumulative constructional and operational air quality impacts. Projection of future year background air quality shall be based on the "Pollutants in the Atmosphere and their Transport over Hong Kong" (PATH) model released by EPD with necessary modification according to the emission scenario(s) of the assessment year(s). Any modifications made to the PATH model should be clearly presented with supporting information.

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

   (i) Identification and description of existing, committed and planned ASRs that would likely be affected by the Project, including those earmarked on the relevant Outline Zoning Plans, Development Permission Area Plans, Outline Development Plans, Layout Plans and other relevant published land use plans, including plans and drawings published by the Lands Department and any land use and development applications approved by the Town Planning Board. The Applicant shall select the assessment points of the identified ASRs that represent the worst impact point of these ASRs. A map clearly showing the location and description such as name of buildings, their uses and height of the selected assessment points shall be given. The separation distances of these ASRs from the nearest emission sources shall also be given. For phased development, the Applicant shall review the development programme and, where appropriate, to include occupiers of earlier phases as ASRs of construction phase impacts if they may be affected by works of later phases.

   (ii) Provision of a list of air pollution emission sources, including any nearby emission sources which are likely to have impact related to the Project based on the analysis of the construction and operation activities in Section 1 above. Examples of construction phase emission sources include site clearance, excavation, backfilling, stockpiling, material handling, construction plant and equipment, marine vessel and vehicular movements, etc. Examples of operation stage emission sources include exhaust emissions from vehicles and industrial chimneys including Waste-to-Energy Facilities and concrete batching plant; odour emissions from the operation of sewage treatment works, sewage pumping station(s), waste management/treatment/disposal

facilities and refuse collection points, etc. Validity of the traffic flow, vehicle fleet mix (including the vehicle classes covered by EMFAC-HK model, electric and other new energy vehicles) and speed prediction of road sections for the purpose of air quality impact assessment shall be confirmed with Transport Department and documented in the EIA report. Validity of other assumptions adopted and the magnitude of activities (e.g., volume of construction material to be handled, odour emission strength, etc.), where applicable, shall also be obtained from the relevant government departments/authorities, and documented in the EIA report.

(iii) Identification of existing and potential chimneys and obtainment of relevant chimney emission data in the assessment area, where appropriate, by carrying out a survey for assessing the cumulative air quality impacts of air pollutants through chimneys. The Applicant shall ensure and confirm the validity of the emission data used in their assessment. Any errors found in their emission data used may render the submission invalid.

(iv) The emissions from any concurrent projects identified as relevant during the course of the EIA study shall be taken into account as contributing towards the overall cumulative air quality impact. The impacts at the existing, committed and planned ASRs within the assessment area as well as the proposed air sensitive uses within the Project area and areas where air quality may be potentially affected by the Project shall be assessed, based on the best information available at the time of assessment.

3. Construction Phase Air Quality Impact

(i) The Applicant shall follow the requirements stipulated under the Air Pollution Control (Construction Dust) Regulation to ensure that construction dust impacts are controlled within the relevant standards as stipulated in Section 1 of Annex 4 of the TM.

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

(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 impacts 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. Zero emission or clean fuels shall be considered as far as practicable for transportation activities. The Applicant shall describe the means of transportation and their routings involved, with a view to addressing potential air quality impact caused by transportation activities. Any mitigation measures recommended should be well documented in the EIA report.

(iv) A monitoring and audit programme for the construction phase of the Project shall be devised to verify the effectiveness of the proposed control measures so as to ensure proper control of construction phase emissions.

4. Operational Phase Air Quality Impact

(i) The Applicant shall assess the expected air pollutant and odour concentrations at the ASRs identified within the assessment area and the Project area as defined in Section 3.4.3.2 of this EIA Study Brief based on an assumed reasonable worst-case scenario under normal operation conditions of the Project.

(ii) If the assessment indicates likely exceedances of the recommended limits in the TM at the development and the nearby ASRs, a quantitative assessment should be carried out to evaluate the operational phase air quality impacts at the identified ASRs. The Applicant shall follow the methodology set out in Section 5 below when carrying out the assessment.

(iii) A monitoring and audit programme for the operational phase of the Project shall be devised if necessary, 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 quantitative assessment by applying the general principles enunciated in the modelling guidelines in Appendix B-1 while making allowance for the specific characteristic of the Project. This specific methodology must be documented in such level of details, preferably with tables and diagrams, to allow the readers of the EIA report to grasp how the model has been set up to simulate the situation under study without referring to the model input files. In case of doubt, prior agreement between the Applicant and the Director on specific modelling details should be sought.

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

(iii) Calculation of the relevant pollutant emission rates for input to the model and map(s) showing the emission sources and road links 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 in all submissions for review. In case of doubt, prior agreement between the Applicant and the Director on the specific modelling details should be sought.

(iv) For operational phase air quality impact assessment, the air quality impacts of future road traffic should be calculated based on the highest emission strength from road vehicles in the assessment area within the next 15 years after the first population intake year of the Project or within the next 5 years after the full population intake year of the Project, whichever is later, taking into account the air quality effect of proposed road works. 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 future road traffic that represents the highest emission scenario within the construction phase concerned. The Applicant may use the EMFAC-HK

model released by EPD 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 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 flow data and assumptions, such as the hourly traffic volume, average speed, vehicle composition, number of trips data 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 appropriate air quality models accepted by the Director.

(vi) For estimating the future background air quality, the latest version of the PATH model shall be adopted with necessary modification. The emission inventory, including but not limited to vehicular and marine emissions, of the PATH model should be reviewed and, if necessary, modified based on the latest available information at the time of the assessment to better reflect the emission scenario(s) of the assessment year(s). Double-counted near-field emission sources, if any, should be removed in the background air quality estimation. If there are substantial changes of land use in the assessment area, the Applicant shall review the influences of the changes in land use on the meteorological conditions and make necessary modification on the meteorological input data for the air quality modelling assessment. Details of the modifications to the PATH model should be presented with supporting information. In general, major point sources located within 4 kilometres (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 models to account for their induced sub-grid scale spatial variations in background air quality. The exact approach shall be case-specific and subject to the agreement by the Director.

(vii) The Applicant shall calculate the cumulative air quality impacts at the identified ASRs and compare these results against the criteria set out in Section 1 of Annex 4 in the TM. The predicted cumulative air quality impacts shall be presented in the form of summary table(s) and pollution contours, to be evaluated against the relevant air quality standards and on any effect they may have on the land use implications. Plans of a suitable scale shall be used to present pollution contours to allow buffer distance requirements to be determined properly.

(viii) If vehicle tunnels and/or full enclosures are proposed in the Project, it is the responsibility of the Applicant to ensure that the air quality inside these proposed structures shall comply with EPD's "Practice Note on Control of Air Pollution in Vehicle Tunnels". When assessing air quality impacts due to emissions from tunnels/full enclosures, the Applicant shall ensure prior agreement with the relevant ventilation design engineer over the amount and the types/kinds of pollutants emitted from these full enclosures; and such assumptions shall be clearly and properly documented in the EIA report.

(ix) If there are any direct technical noise remedies recommended in the study, the air quality implication, due to these technical remedies shall be assessed. For instance, if barriers that may affect dispersion of air pollutants are proposed, then the implications of such remedies on air quality impacts shall be assessed. If noise enclosure is proposed, then portal emissions of the enclosed road section shall also be assessed. The Applicant shall highlight clearly the locations and types of agreed noise mitigating measures (where applicable), be they noise barriers, road enclosures and their portals, and affected ASR's, on contour maps for reference.

6. Mitigation Measures for Air Quality Impact

Consideration for Mitigation Measures

(i) When the predicted air quality impact exceeds the criteria set in Section 1 of Annex 4 in the TM, the Applicant shall consider mitigation measures, including but not limited to road design measures (e.g. alternative road alignment/exit to increase separation distance from ASRs, underground road, tunnel, roadside barrier/enclosure), pollution control technology measures (e.g. installation of air purification system, use of clean fuels, low emission transport system, renewable energy, etc.), and traffic management measures (e.g. setting up restriction zone for heavy duty vehicles, low/zero emission zone, car-free and pedestrian priority zone, cycling network, public transportation hub) etc. to reduce the air quality impacts on the identified ASRs. The feasibility, practicability, programming and effectiveness of the recommended mitigation measures shall be assessed and documented in the EIA report. Specific reasons for not adopting certain workable mitigation measures to reduce the air quality to a level meeting the criteria in the TM or to maximise the protection of the ASRs as far as possible should be clearly substantiated and documented in the EIA report.

Evaluation of Residual Air Quality Impact

(ii) Upon consideration of mitigation measures, if the mitigated air quality impact still exceeds the relevant criteria in Annex 4 of the TM, the Applicant shall identify, predict and evaluate the residual air quality impacts in accordance with Section 4.4.3 and Section 4.5.1(d) of the TM and estimate the total number of existing dwellings, classrooms and other air sensitive elements that will be exposed to residual air quality impacts exceeding the criteria set in Annex 4 in the TM.

7. Submission of Emission Calculation Details and Model Files

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

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 Applicant exercises 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

(i) The Applicant shall describe the prevailing noise environment in the EIA report.

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

2. Construction Noise Impact Assessment

(i) Construction Noise Impact Assessment Methodology

(a) The Applicant shall carry out construction noise impact assessment (excluding percussive piling) of the Project during daytime, i.e. 7am to 7pm, on weekdays other than general holidays in accordance with methodology in Sections 5.3 and 5.4 of Annex 13 of the TM.

(b) The Applicant shall conduct a qualitative assessment in the EIA to demonstrate no adverse construction noise impact would be associated with the project by adopting quieter construction method and equipment during construction stages. The Applicant shall firstly identify the major noise sources / activities, then propose the corresponding quiet construction methods, and commit to submit a Construction Noise Management Plan (CNMP) to the Director.

(ii) Identification of Construction Noise Impact

(a) Identification of Assessment Area and Noise Sensitive Receivers (NSRs)

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

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

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

(D) A map showing the location and description such as name of building, use, and floor of each and every selected assessment point shall be given. Photographs of existing NSRs shall be appended to the EIA report.

(b) Inventory of Noise Sources

(A) The Applicant shall identify an inventory of noise sources for representative construction equipment for the purpose of construction noise impact assessment.

(iii) Mitigation of Construction Noise Impact

(a) The Applicant shall consider and evaluate the application of direct mitigation measures including but not limited to, quieter construction method and equipment, barrier, enclosures, etc. The feasibility, practicability, programming and effectiveness of the recommended mitigation measures shall be qualitatively assessed. Any direct mitigation measures recommended should be well documented in the report. Specific reasons for not adopting certain direct mitigation measures to maximise the protection for the NSRs as far as possible should be clearly substantiated and documented in the EIA report.

(iv) Construction Noise Management Plan

(a) The Applicant shall propose to submit a CNMP to the Director. The CNMP will contain the quantitative construction noise impact assessment, the adopted quieter construction method and equipment, noise mitigation measures and the construction noise impact monitoring and audit programme, with reference to the updated and identified plant inventories once available and in any case before the tender invitation if there is any change to the construction noise mitigation measures and/or plant inventory recommended in the EIA report and before the commencement of construction of the project. Any technical constraint that would hinder the use of these quieter construction method and equipment shall be evaluated and clearly recorded in the assessment.

(b) The CNMP will include an implementation schedule clearly listing out the mitigation measures, the implementation party, location and timing of implementation. Mitigation measures recommended and requirements specified in the CNMP shall be fully implemented.

3. Road Traffic Noise Impact Assessment

(i) Road Traffic Noise Impact Assessment Methodology

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

(b) Assessment on Electric Vehicles

Applicant shall consider electric vehicles in the traffic flow prediction, and propose methodology to account for the noise emission of electric vehicles in relation to road traffic noise impact assessment. The proposal shall include prediction of electric vehicles percentages in the traffic flow at relevant assessment years, correction factor of electric vehicles in noise emission model, evaluation of the noise reduction effect of electric vehicles on the predicted

road traffic noise impacts and the proposed mitigation measures.

(c) 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 NSRs information. CD-ROM(s) containing the above data shall be submitted together with the EIA report.

(ii) Identification of Road Traffic Noise Impact

(a) Identification of Assessment Area and Noise Sensitive Receivers (NSRs)

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

(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 land use and planning parameters and conditions to work out representative site layouts for road traffic noise impact assessment purpose. However, such parameters, conditions and site layouts together with any constraints identified shall be confirmed with the relevant responsible parties including Planning Department and Lands Department.

(b) Inventory of Noise Sources

(A) The Applicant shall analyse the scope of the proposed road alignment(s) to identify appropriate new and existing 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. In determining whether the traffic noise impact due to road improvement project/works is considered significant, detailed information with respect to factors including at least the change of nature of road,

change of alignment and change of traffic capacity or traffic composition, and change of traffic flow pattern in the associated road networks, shall be assessed. Figures showing extents of new/altered roads, existing roads and the associated road networks shall be provided in the EIA report.

(B) Validity of the traffic flow prediction of road sections for the purpose of road traffic noise impact assessment shall be confirmed with relevant government departments/authorities and/or qualified personnel and documented in the EIA report.

(iii) Prediction and Evaluation of Road Traffic Noise Impact

(a) Scenarios

(A) The Applicant shall consider different phases of the Project in the road traffic noise impact assessment.

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

(C) The Applicant shall prepare and provide drawings (i.e. road-plots of the traffic noise model) of appropriate scale to show the road segments, topographic barriers, and assessment points of sensitive receivers input into the traffic noise model.

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

- unmitigated scenario at assessment year(s);
- mitigated scenario at assessment year(s); and
- prevailing scenario for indirect mitigated measures eligibility assessment.

(b) 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 impacts 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 impacts 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 impacts exceeding the criteria set in Annex 5 in the TM.

(iv) Mitigation of Road Traffic Noise Impact

(a) Direct Mitigation Measures

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

(C) For traffic noise impacts arising from new road projects on planned noise sensitive uses, practicable direct mitigation measures at source shall be implemented on the road projects before consideration of mitigation measures within the planned noise sensitive uses. Should planned noise sensitive uses still be affected even with practicable direct mitigation measures at source 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 and agreement of relevant parties including Planning Department and Lands Department.

(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.

(b) 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 recognised 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.

(v) Evaluation of Residual Road Traffic Noise Impact

(a) 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.

4. Fixed Noise Sources Impact Assessment

(i) Fixed Noise Sources Impact Assessment Methodology

(a) The Applicant shall carry out fixed noise sources impact assessment in accordance with methodology in Section 5.2 of Annex 13 of the TM.

(b) The Applicant shall conduct a qualitative assessment to demonstrate no adverse fixed noise sources impact would be associated with the project by committing to adopt appropriate noise mitigation measures during operation periods. The Applicant shall firstly identify the major noise sources / activities, and commit to submit a Fixed Noise Source Management Plan (FNMP) to the Director.

(ii) Identification of Fixed Noise Sources Impact

(a) Identification of Assessment Area and Noise Sensitive Receivers (NSRs)

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

(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 fixed noise sources impact assessment.

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

(D) A map showing the location and description such as name of building,

use, and floor of each and every selected assessment point shall be given. Photographs of existing NSRs shall be appended to the EIA report.

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

(b) Inventory of Noise Sources

(A) The Applicant shall identify an inventory of noise sources for fixed noise sources impact assessment. The inventory of noise sources shall include, but not limited to existing fixed noise sources at firing ranges, sewage treatment works, pumping stations, industrial noise sources and planned fixed noise sources (e.g., ventilation system(s) of building(s), cavern(s) and/or tunnel(s), sewage treatment works and pumping stations, public transport facilities, sports centre, district cooling system, etc.

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

(C) Validity of the inventory shall be confirmed with the relevant government department authorities where applicable and documented in the EIA report.

(iii) Mitigation of Fixed Noise Source Impact

(a) The Applicant shall consider and evaluate the application of direct mitigation measures including but not limited to, quieter equipment, silencer, barrier, enclosures, etc. The feasibility, practicability, programming and effectiveness of the recommended mitigation measures shall be qualitatively assessed. Any direct mitigation measures recommended should be well documented in the report. Specific reasons for not adopting certain direct mitigation measures to maximise the protection for the NSRs as far as possible should be clearly substantiated and documented in the EIA report.

(iv) Fixed Noise Source Management Plan

(a) The Applicant shall propose to submit a FNMP to the Director. The FNMP will contain the quantitative fixed noise source impact assessment, noise mitigation measures and the fixed noise source impact monitoring and audit programme, with reference to the updated and identified plant inventories once available and in any case before the commencement of construction of the project.

(b) The FNMP will include an implementation schedule clearly listing out the mitigation measures, the implementation party, location and timing of implementation. Mitigation measures recommended and requirements

specified in the FNMP shall be fully implemented.

5. Helicopter Noise Assessment

(i) Helicopter Noise Impact Assessment Methodology

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

(ii) Identification of Helicopter Noise Impact

(a) Identification of Assessment Area and Noise Sensitive Receivers

(A) The Applicant shall propose the assessment area for agreement of the Director before commencing the assessment. The assessment area for helicopter noise impact shall generally include area of existing, committed and planned NSRs on the proposed Project under or near to the flight tracks in vicinity of the planned and existing helicopter pad(s).

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

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

(b) Inventory of Noise Sources

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

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

(iii) Prediction and Evaluation of Helicopter Noise Impact

(a) Scenarios

(A) The Applicant shall quantitatively assess the helicopter noise impact from the operation of the existing and planned helicopter pad(s) and related off site facilities during helicopters approaching and departure

from the helicopter pad(s), with respect to the criteria set in Annex 5 of the TM, of unmitigated scenario and mitigated scenario at assessment years of various operation modes including, but not limited to,

- the worst operation mode which represents the maximum noise emission in connection of helicopter types, flight paths, flight frequency and flight hours, and;
- any other operation modes as agreed by the Director.

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

(b) Prediction of Noise Impact

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

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

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

(iv) Mitigation of Helicopter Noise Impact

(a) Direct Mitigation Measures

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

(v) Evaluation of Residual Helicopter Noise Impact

(a) Upon exhaust of direct 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 helicopter noise impact in accordance with Section 4.4.3 of the TM and estimate the total number of existing dwellings, classrooms and other noise sensitive elements that will be exposed to residual noise impact exceeding the criteria set in Annex 5 of the TM.

6. Rail Noise Assessment

(i) The Applicant shall carry out railway noise impact assessment in respect of air-borne and ground-borne (where applicable) noise arising from the planned railway lines (where applicable) within the assessment area in the course of the EIA study, with respect to the acceptable levels contained in Table 1A in Annex 5 of the TM. The Applicant shall propose assessment area, methodology and computational model for agreement of the Director, with reference to Section 4.4.2 of the TM, prior to the commencement of the assessment.

(ii) Identification of Rail Noise Impact

(a) The Applicant shall identify NSRs in the proposed Project in the assessment area and select assessment points to represent identified NSRs for carrying out rail noise impact assessment.

(b) The Applicant shall identify and quantify an inventory of noise sources taking into consideration railway traffic data, railway design, type of rolling stock, and allow for deterioration in rail and rolling stock condition from brand new to an operating level, the reasonable worst case scenario and any other planned noise sources. Quantitative assessment at the identified NSRs for different alignment of the rail shall be compared against the relevant criteria or limits.

(iii) Mitigation of Rail Noise Impact

(a) Based on the above noise assessment result, the Applicant shall define the constraints including assumed configuration of the railway (e.g. underground, viaduct or at grade), and make recommendations for noise amelioration / direct mitigation measures for any planned NSR which would be subject to predicted cumulative noise level in excess of the relevant planning criteria and statutory limits in the appropriate design year.

7. Marine Traffic Noise Impact Assessment

(i) The Applicant shall carry out marine traffic noise impact assessment including noise from operation activities on the moored vessels in typhoon shelters, manoeuvring of vessels during operational phase of the proposed development, etc. The Applicant shall propose the assessment area, criteria and assessment methodology for agreement of the Director (with reference to Section 4.4.2(c) of the TM) prior to the commencement of the assessment.

(ii) Identification of Marine Traffic Noise Impact

(a) The Applicant shall identify NSRs in the proposed Project in the assessment area and select assessment points to represent identified NSRs for carrying out marine traffic noise impact assessment. Quantitative assessment at the identified NSRs shall be compared against the relevant criteria or limits.

(iii) Mitigation of Marine Traffic Noise Impact

(a) The Applicant shall make recommendations for direct mitigation measures for NSR which would be subject to predicted noise impacts from marine traffic and typhoon shelters.

8. Aircraft Noise Impact Assessment

(i) The Applicant shall carry out aircraft noise impact assessment including noise from on-going operation of the Hong Kong International Airport (HKIA), and potential aircraft noise impact arising from the planned expansion of the HKIA into a 3 Runway System (3RS), with respect to the criteria set in Annex 5 of the TM. The Applicant shall propose methodology for agreement of the Director, with reference to Section 4.4.2 of TM, prior to the commencement of the assessment.

(ii) Identification of Aircraft Noise Impact

(a) The assessment shall be based on the best available Noise Exposure Forecast (NEF) contours of the HKIA at the time of the assessment.

(b) The assessment area shall be subject to the agreement by the Director and include planned NSRs within the Project.

(iii) Prediction of Noise Impact

(a) The assessment shall cover the cumulative aircraft noise impact, if any, associated with the operation of HKIA on planned NSRs within the Project.

(iv) Mitigation of Aircraft Noise Impact

(a) The Applicant shall make recommendations for direct mitigation measures for planned NSRs, in situations where the noise level exceeding the criteria set in Annex 5 of the TM is identified following the guidelines of mitigation measures of Section 6 of Annex 13 of the TM.

Appendix D

Requirements for Water Quality Impact Assessment

1. The Applicant shall identify and analyse physical, chemical and biological disruptions of the water system(s) arising from construction and operation of the Project.

2. The Applicant shall predict, quantify and assess any water quality impacts arising from construction and operation of the Project by appropriate mathematical modelling and/or other techniques proposed by the Applicant and approved by the Director. The mathematical modelling requirements are set out in Appendix D-1. Possible impacts due to the dredging, filling, transportation and disposal of dredged / excavated materials, tunnelling activities, other marine works activities, effluent discharge, thermal/cooling water discharge, and other operational discharges that may contain chemicals such as biocide, anti-foulant and residual chlorine, discharge from desalination plant and site runoff shall include changes in hydrology, flow regime, sediment erosion and deposition patterns, morphological change of seabed profile, water and sediment quality. The prediction shall include possible different construction stages or sequences of the Project. Affected sensitive receivers shall be identified by the assessment tool with indications of degree of severity.

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

   (i) the water quality impacts including but not limited to impacts on suspended solids level, dissolved oxygen, contaminant and nutrient release arising from the marine works, the site run-off such as the effluents generated from dewatering associated with tunnelling and piling activities and those specified in the ProPECC PN 1/94, during construction;

   (ii) the change in hydrological condition due to the proposed rail links and the marine facilities such as breakwaters, piers and berthing facilities which may be resulted in changing of water quality and affect WSRs during operation. Potential cumulative impacts due to the reclamation for the KYCAI and construction for HKI-NEL Link shall also be taken into account;

   (iii) the water quality impacts of the treated effluent discharge from the sewage treatment works (if necessary) and the emergency sewage discharges from the sewage pumping station(s) and the sewage treatment works;

   (iv) the water quality impacts due to the discharges from the waste-to-energy facilities, desalination plant, district cooling system and any other supporting facilities during operation;

   (v) the potential cumulative water quality impacts arising from the development within the Project taking into account the development phasing of the reclamation for KYCAI; and

   (vi) the water quality impacts on seawater intake points, beaches, watercourses, fish culture zones, coral communities and other water sensitive receivers and areas of ecological or conservation values which may be affected by the Project.

4. The Applicant shall address water quality impacts due to the construction and operation of the Project. Essentially, the assessment shall address the following:

(i) collect and review background information on affected existing and planned water systems, their respective catchments and sensitive receivers which might be affected by the Project;

(ii) characterise water quality of the water systems and sensitive receivers, which might be affected by the Project based on existing best available information and through appropriate site survey and tests when existing data are insufficient;

(iii) identify and analyse relevant existing and planned future activities, beneficial uses and water sensitive receivers related to the affected water system(s). The Applicant should refer to, *inter alia*, those developments and uses earmarked on the relevant Outline Zoning Plans, Development Permission Area Plans, Outline Development Plans and Layout Plans, and any other relevant published land use plans, including plans and drawings published by Lands Department and any land use and development applications approved by the Town Planning Board;

(iv) identify pertinent water quality objectives and establish other appropriate water quality criteria or standards for the water system(s) and the sensitive receivers identified in (i), (ii) & (iii) above;

(v) review the specific construction methods and configurations, and operation of the Project to identify and predict the likely water quality impacts arising from the Project;

(vi) identify any alteration of any drainage system, water courses, natural streams, ponds, wetlands; change of water holding/flow regimes of water bodies, change of catchment types or areas; erosion or sedimentation due to the Project and any other hydrological changes in the Assessment Area;

(vii) identify and quantify existing and likely future water pollution sources, including point discharges and non-point sources discharges to the water systems, sewage from the workforce and polluted discharge generated from the Project, contaminant release from works on marine sediment and sediment release or re-suspension from works into water bodies;

(viii) provide an emission inventory on the quantities and characteristics of those existing and future pollution sources in the Assessment Area. Field investigation and laboratory test shall be conducted as appropriate to fill relevant information gaps;

(ix) report the adequacy of the existing sewerage and sewage treatment facilities for the handling, treatment and disposal of wastewater arising from the Project as required in Section 3.4.6 of this EIA Study Brief;

(x) identify and quantify the water quality impacts based on the findings and recommendations from the Sewerage and Sewage Treatment Implications Assessment under Section 3.4.6 of this EIA Study Brief. The water quality concerns shall include, but not limited to, possible sewage overflow or emergency discharge due to capacity constraints of the sewerage system, and emergencies arising from the Project;

(xi) predict and quantify the impacts on the water system(s) and their sensitive receivers due to those alterations, change and the pollution sources identified above. Possible impacts include change in hydrology, flow regime, water quality and release of contaminants, etc. The prediction shall take into account and include possible different construction and operation of the Project;

(xii) assess the cumulative impacts due to other related concurrent and planned projects, activities or pollution sources within the assessment area that may have a bearing on the environmental acceptability of the Project;

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

(xiv) develop effective infrastructure upgrading or provision, contingency plan, water pollution prevention and mitigation measures to be implemented during construction and operation, including emergency sewage discharge in the case of sewage treatment works and sewage pumping station(s), so as to reduce the water quality impacts to within standards. Requirements to be incorporated in the Project contract document shall also be proposed;

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

(xvi) evaluate and quantify residual impacts on water system(s) and the sensitive receivers with regard to the appropriate water quality objectives, criteria, standards or guidelines.

Appendix D-1

Requirements for Hydrodynamic and Water Quality Modelling

Modelling software general

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

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

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

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

Model details – Calibration & Validation

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

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

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

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

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

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

5. The Applicant shall be responsible for acquiring/developing and calibration of the models for use in this study themselves. They may make reference to the models developed under the Update on Cumulative Water Quality and Hydrological Effect of Coastal

Developments and Upgrading of Assessment Tool (Agreement No. CE 42/97). They may also propose to use other models subject to agreement with EPD.

Model details – Simulation

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

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

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

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

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

Modelling Assessment

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

2. If applicable, the assessment shall cover accidental spillage associated with the Project. Potential locations, quantities and rates of spill shall be identified and quantified. The spill modelling shall cover combinations of different tides, wind and season conditions.

The methodology for modelling spill and scenarios to be covered should be agreed with EPD.

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

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

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

6. The results shall be assessed for compliance of Water Quality Objectives. Any changes in hydrodynamic regime shall be assessed. Daily erosion/sedimentation rate shall be computed and its water quality impact on water sensitive receivers shall be assessed.

7. The impact on identified sensitive receivers shall be assessed.

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

9. All modelling input data and results shall be submitted in digital media to EPD upon request.

Appendix E

Requirements for Assessment of Sewerage and Sewage Treatment Implications

1. The Applicant shall study and assess the impacts of discharging sewage arising from the Project to the existing/planned sewerage systems. The assessment shall include the following:

   (i) investigate and review to establish whether there is adequate capacity for the sewage arising from the Project in the existing, committed and planned sewerage systems, and sewage treatment works nearby, in particular the Stonecutters Island Sewage Treatment Works in the vicinity. The Applicant shall quantitatively address the impacts of the Maximum Development Flows on the sewerage system under different development phases. The assessment should take into account any existing and additional sewage flows and flow projections from other existing/planned developments to be connected to these existing/planned sewerage systems and sewage treatment works. The appropriate treatment level of the ultimate and interim sewage arising, if required, shall be assessed and proposed. The water quality impacts arising from the interim and ultimate effluent discharge, if any, shall be assessed in accordance with Section 3.4.5 of this EIA Study Brief;

   (ii) based on the above items (i), if the existing/planned sewerage layout or capacities cannot cope with the maximum discharges, the Applicant shall propose an optimal and cost-effective upgrading works to improve the existing/planned sewerage and sewage treatment facilities (e.g. the Stonecutters Island Sewage Treatment Works in the vicinity) or to provide new sewerage and sewage treatment facilities on site to receive and treat the sewage arising during construction and operation of the Project. Any proposed sewerage system and/or on-site sewage treatment facility should be designed to meet the current government standards and requirements;

   (iii) employ the latest version of the computer model "InfoWorks" or equivalent computer models to assess impacts of future development under different phases on the existing and planned sewerage networks;

   (iv) propose and undertake required measures to mitigate any forecast shortfalls in the sewerage system as a result of the Project under different development phases and demonstrate the proposed measures would be adequate for the Maximum Development Flows under different development phases. Any proposed sewerage system and/or sewage treatment facility should be designed to meet the current government standards and requirements and agreed by DSD and EPD;

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

   (vi) identify and propose the appropriate alignment and layouts of the new sewerage to connect to the existing/planned/future sewerage systems recommended, and investigate and assess the technical feasibility of connection (e.g., technical feasibility and details for connection to public sewer and sewage pumping station); and

   (vii) set out the design, operation and maintenance requirements and undertake or obtain

agreement to undertake the construction and maintenance of any proposed sewerage and sewage treatment facilities, such as pumping station(s) and sewage treatment plant(s) of the recommended option, including electrical and mechanical components to eliminate the problem of septicity incurred in long rising mains during low flows and to facilitate maintenance. The above shall be agreed by DSD and EPD. (Twin rising mains for each pumping station should be provided to make sure that the proposed sewage rising mains are maintainable without shutting down and discharging untreated sewage into the natural stream/drainage channel directly).

Appendix F

Requirements for Assessment of Waste Management Implications

The assessment of waste management implications shall cover the following:

1. Analysis of Activities and Waste Generation

   (i) The Applicant shall identify the quantity, quality and timing of the wastes arising as a result of the construction and operation activities of the Project, based on the sequence and duration of these activities, e.g., any dredged/excavated sediment/mud, sewage sludge, screening, grits, chemical waste, construction and demolition (C&D) materials, general refuse, domestic waste and other wastes which would be generated during construction and operation of the Project.

   (ii) The Applicant shall adopt appropriate design, general layout, construction methods and programme to minimise the generation of public fill/inert C&D materials and maximise the use of public fill / inert C&D materials for other construction works.

2. Proposal for Waste Management

   (i) Prior to considering the disposal options for various types of wastes, including sewage being screened, 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 phase for maximizing waste reduction) shall be separately considered.

   (ii) After considering the opportunities for reducing waste generation and maximizing re-use, the types and quantities of the wastes required to be disposed of as a consequence shall be estimated and the disposal methods/options for each type of wastes shall be described in detail. The disposal methods/options recommended for each type of wastes shall take into account the result of the assessment in Section (iv) below.

   (iii) The EIA report shall state 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.

   (iv) The impacts caused by handling (including stockpiling, labelling, packaging and storage), collection, transportation and re-use/disposal of wastes shall be addressed in detail and appropriate mitigation measures shall be proposed. This assessment shall cover the following areas:

   - potential hazard;
   - air and odour emissions;
   - noise;
   - wastewater discharge; and
   - public transport.

3. Excavation/Dredging, and Dumping

(i) The Applicant shall identify and 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.

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

Appendix G

Requirements for 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 recognised sites of conservation importance and other ecologically sensitive areas and species of conservation importance. The assessment shall identify and quantify as far as possible the potential ecological impacts associated with the Project, both directly by loss of habitat, and indirectly by potential impacts such as human disturbance and/or change of water quality and/or hydrodynamic regime to natural environment, the associated wildlife groups/species and habitat connectivity between surrounding areas.

2. The assessment shall include the following major tasks:

   (i) review the findings of relevant studies/surveys, in particular the ecological survey findings of the EIAs for "Reclamation for Kau Yi Chau Artificial Islands" (ESB-349/201) and "Hong Kong Island – Northeast Lantau Link" (ESB-351/2021) undertaken by the same project proponent, collate available information regarding the ecological characters of the assessment area;

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

   (iii) carry out necessary ecological field surveys with a duration of at least 4 months and investigation to verify the information collected, fill the information gaps as identified in (ii) above, and to fulfil the objectives of the EIA study. The field surveys if required, shall cover but not be limited to flora, fauna and any other habitats/species of conservation importance;

   (iv) establish the ecological profile of the assessment area based on information collected in the tasks mentioned in sub-sections (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 recognised sites of conservation importance and ecologically sensitive areas, and assessment of whether these sites/areas will be affected by the Project;

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

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

any features of ecological importance;

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

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

(v) investigate and describe the existing wildlife uses of various habitats with special attention to those wildlife groups and habitats with conservation importance, including the following:

(a) existing natural shorelines;

(b) intertidal, subtidal and benthic habitats;

(c) natural habitats in Northeastern Lantau; and

(d) any other habitats and wildlife groups identified as having special conservation interest by this EIA study.

(vi) using suitable methodologies (including those adopted in other relevant EIA studies in Hong Kong, etc.), and considering any works activities from other projects reasonably likely to occur at the same time, identify and quantify as far as possible any direct (e.g., loss of habitats, physical disturbance, etc.), indirect (e.g., light, changes in water qualities, hydrodynamics properties, hydrology, noise and other disturbance generated by the construction and operational activities, etc.), on-site, off-site, primary, secondary and cumulative ecological impacts on the wildlife groups and habitats identified such as destruction of habitats, disturbance to wildlife, reduction of species abundance/diversity, loss of roosting, foraging, feeding and breeding grounds, reduction of ecological carrying capacity and habitat fragmentation and any other possible disturbance caused by the Project, and in particular the following:

(a) loss of ecological habitats due to construction and operation of the Project;

(b) noise, glare, dust, traffic and other human disturbance and other deterioration of environmental quality to ecological sensitive areas and wildlife during construction and operation of the Project;

(c) indirect ecological impacts due to potential intake of marine life while extracting seawater from desalination or centralised cooling, discharge of water with higher temperature and salinity, hydrological disruption and/or deterioration of the water quality such as sewage treatment works during construction and operation of the Project;

(d) impacts due to obstruction to wildlife corridor, habitat fragmentation and isolation;

(e) potential impacts of future housing development and associated infrastructures on the flight path of breeding ardeids, and resident and migratory birds, between

breeding/roosting and foraging sites taking into account seasonal patterns during construction and operation;

(f) impacts on birds due to collision to buildings and transparent or semi-transparent noise barriers / enclosure; and

(g) cumulative impacts due to other planned and committed concurrent development projects at or near the Project area.

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

(viii) recommend possible and practicable mitigation measures (such as alternative design and configuration of the Project, modification/change of construction methods, restriction of building height, provision of buffer areas, etc.) to avoid, minimise and/or compensate for the adverse ecological impacts identified during construction and operation of the Project;

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

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

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

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

Appendix H

Requirements for Fisheries Impact Assessment

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

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

3. The fisheries impact assessment shall include the following major information:

   (i) description of the physical environmental background;

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

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

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

   (v) prediction and evaluation of any other direct/indirect, on-site/off-site impacts on fisheries such as potential loss or disturbance of fishing grounds, aquaculture sites, fisheries production and operations, fisheries resources and habitats, spawning and nursery grounds, artificial reefs, as well as water quality deterioration at sensitive receivers and impingement and entrainment of fisheries resources at seawater intake points;

   (vi) evaluation of cumulative impacts on fisheries;

   (vii) proposal of feasible, practical and effective alternatives and/or mitigation measures; and

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

Appendix I

Requirements for Landscape and Visual Impact Assessment

1. The Applicant shall review relevant Outline Development Plans, Outline Zoning Plans, Development Permission Area Plans, Layout Plans, other published land use plans, planning briefs and/or studies and conduct surveys/studies to identify areas of high landscape value such as country park, coastal protection area, green belt, conservation area designations, watercourses and woodland areas, and existing sensitive landscape characters and landscape resources. Any guidelines on landscape and urban design strategies and frameworks that may affect the appreciation of the Project shall also be reviewed. The aim is to gain an insight to the future outlook of the area affected so as to assess whether the Project can fit into the surrounding setting. Any conflict with the statutory town plan(s) and any published land use plans shall be highlighted and appropriate follow-up action shall be recommended. A system shall be derived for judging the landscape and visual impact significance as required under the Annexes 10 and 18 of the TM and the EIAO Guidance Note No. 8/2010 "Preparation of Landscape and Visual Impact Assessment under EIAO". Cumulative landscape and visual impacts of the Project with other existing, committed and planned developments in the assessment area shall be assessed.

2. The Applicant shall describe, appraise, analyse and evaluate the existing and planned landscape resources and character of the assessment area. A system shall be derived for judging landscape and visual impact significance. 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 judgment 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 setting, recreation and tourism related uses, and scenic spot. The landscape impact assessment shall quantify the potential landscape impacts as far as possible so as to illustrate the significance of such impacts arising from the proposed development. Clear mapping of the landscape impacts is required. Broad brush tree and vegetation survey shall be carried out and to identify significant trees (including Old and Valuable Tree (OVT), stone wall tree, tree of large size, protected / rare plant species, tree of particular interest etc.) and the impacts on existing trees shall be addressed. Cumulative landscape and visual impacts of the Project with other committed and planned developments shall be assessed.

3. The Applicant shall assess the visual impacts of the Project. Clear illustration including mapping of visual impacts is required. The assessment shall mainly include the following:
   (i) identification and plotting of visual envelope of the Project;

   (ii) appraisal of existing visual resources and character as well as the future outlook of the visual system of the assessment area;

   (iii) identification and justification of the key groups of existing and planned sensitive receivers within the visual envelope with regard to views from ground level, sea level and elevated vantage points, and clearly indicate the sensitive receivers on a plan of appropriate scale;

   (iv) description of the visual compatibility of the Project with the surrounding and the planned setting, its obstruction and interference with the key views of the assessment

areas, and changes in visual amenity;

(v) identification and description of the severity of visual impacts in terms of distance, nature and number of sensitive receivers. Assessment on effectiveness of the proposed mitigation measures of visual impacts during construction and operation shall be carried out by comparing the impacts with and without mitigation measures; and

(vi) evaluation and explanation with supportive arguments of factors considered in arriving the significance thresholds of visual impacts. The visual impacts should include presentation of an evaluation matrix derived for judging impact significance.

4. The Applicant shall evaluate the merits of preservation in totality, in parts or total destruction of existing landscape and the establishment of a new landscape character area. In addition, alternative location, layout, design, built-form and construction method that will avoid or reduce the identified landscape and visual impacts shall be considered and evaluated for comparison before adopting other mitigation or compensatory measures to alleviate the impacts. The mitigation measures proposed shall not only be concerned with damage reduction but shall also include consideration of potential enhancement of existing landscape and visual quality. The Applicant shall recommend mitigation measures to minimise adverse effects identified above, including provision of a master landscape plan illustrating the landscape design and mitigation measures.

5. The mitigation measures shall also include the preservation of vegetation and natural landscape resources, transplanting trees in good condition and value, provision of screen planting, re-vegetation of disturbed lands, compensatory planting, woodland restoration, peripheral landscape treatment to blend in with the surrounding environment, design of structures/chimneys, provision of finishes to structure, colour scheme and texture of material used and any measures to mitigate the impacts on the existing and planned land use 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 construction phase and operation phase of the Project. A practical programme and funding proposal for the implementation, management and maintenance of the recommendation measures, and the parties responsible for the mitigation measures from design stage to operation stage shall be provided.

6. Annotated illustration materials such as colour perspective drawings, plans and section/elevation diagrams, annotated oblique aerial photographs, photographs taken at vantage points, and computer-generated photomontage shall be adopted to fully illustrate the landscape and visual impacts of the Project. In particular, 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 in preparing the illustration, which may need to be submitted for verification of the accuracy of the illustration. If any noise barriers/enclosures are proposed, the choice of their colours, design, materials and landscape treatments should be compatible with the surrounding buildings and development context and their aesthetic designs should be considered.

Appendix J

Requirements for Cultural Heritage Impact Assessment

1. Archaeological Impact Assessment (AIA)

The Applicant shall engage qualified archaeologist(s) to conduct an Archaeological Impact Assessment (AIA), taking the results of previous studies and other background of the site, if available, into account to evaluate the impacts on the archaeological heritage imposed by the Project. The scope of the AIA baseline study should consist of desk-top research and field evaluation. In case the information available is inadequate or where the assessment area has not been adequately studied before, archaeological survey should be conducted as part of the AIA to identify sites of archaeological potentials and assess the impacts on the archaeological heritage. When adverse impacts on the archaeological heritage are considered inevitable, strong justifications should be provided. Besides, appropriate mitigation measures should be designed and agreed by AMO, and included in the recommendations of the EIA report for compliance. Licence to Excavate and Search for Antiquities under the Antiquities and Monuments Ordinance (Cap. 53) should be obtained from the Antiquities Authority prior to the commencement of archaeological survey. The Archaeological Action Plan, which is part of the licence application, should have the details of the proposed archaeological work and should be submitted to AMO for agreement before including in the licence application.

2. Marine Archaeological Investigation (MAI)

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

(ii) A MAI shall be carried out to ascertain the archaeological value of the affected seabed area. The Applicant shall propose a programme of investigation, including the scope of works, methodology and time schedule, etc. for agreement with the Director. The MAI shall be carried out by a qualified marine archaeologist who shall obtain a licence from the Antiquities Authority under the provision of the Antiquities and Monuments Ordinance (Cap. 53). If significant archaeological remains are identified, and if they would be affected, strong justifications should be provided, and mitigation measures shall be designed and agreed by the Antiquities and Monuments Office (AMO) before implementation and implemented to the satisfaction of AMO.

3. The Applicant shall draw necessary reference to relevant sections of the "Guidelines for Cultural Heritage Impact Assessment (as at 4 May 2020) and Marine Archaeological Investigation (MAI)", including those on archaeological survey, archaeological report, and handling of archaeological finds and archives, if found necessary in desk-top research results.

Appendix J-1

Guidelines for Marine Archaeological Investigation (MAI) (As at 4 May 2020)

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

1. Baseline Review

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

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

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

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

c. UK Hydrographic Department - the Department maintains an archive of survey data collected by naval hydrographers.

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

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

2. Geophysical Survey

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

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

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

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

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

3. Establishing Archaeological Potential

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

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

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

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

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

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

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

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

5. Report

5.1 Five copies of the final report should be submitted to the AMO. The copyright of the report should be clearly identified. To facilitate future research, please specify that the report can be made available to the public in the Reference Library of the Heritage Discovery Centre.

Appendix K

Requirements for Hazard to Life Assessment

1. Proposed Sewage Treatment Works

The Applicant shall submit information of design of the proposed sewage treatment works, including its scale, scope, presence and size of on-site biogas gasholder(s), if any, etc., for the agreement of the Director on whether a relevant Quantitative Risk Assessment (QRA) is required prior to the commencement of assessment. In the event that such assessment is required, the Applicant shall investigate methods to avoid and/or minimise risk due to the proposed sewage treatment works. The Applicant shall also carry out hazard assessment to evaluate potential hazard to life due to the proposed sewage treatment works. The hazard assessment shall include the following:

(i) Identify hazardous scenarios associated with the generation, storage, use and transport of biogas at the proposed sewage treatment works and then determine a set of relevant scenarios to be included in a QRA;

(ii) Execute a QRA of the set of hazardous scenarios determined in (i), expressing population risks in both individual and societal terms;

(iii) Compare individual and societal risks with the criteria for evaluating hazard to life stipulated in Annex 4 of the TM; and

(iv) Identify and assess practicable and cost-effective risk mitigation measures.

2. Proposed Water Treatment Plant and Desalination Plant

The Applicant shall investigate methods to avoid and / or minimise risk from liquid chlorine, on-site chlorine generation plant and other dangerous goods (DG) due to the proposed water treatment plant and desalination plant. The Applicant shall carry out hazard assessment to evaluate potential hazard to life due to the proposed water treatment plant and desalination plant. The hazard assessment shall include the following:

(i) Identify hazardous scenarios associated with the manufacture, storage, use and transport of liquid chlorine and other DG at the proposed water treatment plant and desalination plant and then determine a set of relevant scenarios to be included in a QRA;

(ii) Execute a QRA of the set of hazardous scenarios determined in (i), expressing population risks in both individual and societal terms;

(iii) Compare individual and societal risks with the criteria for evaluating hazard to life stipulated in Annex 4 of the TM; and

(iv) Identify and assess practicable and cost-effective risk mitigation measures.

3. Proposed Dangerous Goods Godown

The Applicant shall investigate methods to avoid and / or minimise risk from dangerous goods (DG) due to the proposed DG godown. The Applicant shall carry out hazard assessment to evaluate potential hazard to life due to the proposed DG godown with a storage capacity exceeding 500 tonnes of DG. The hazard assessment shall include the

following:

(i) Identify hazardous scenarios associated with the storage, use and transport of DG at the proposed DG godown and then determine a set of relevant scenarios to be included in a QRA;

(ii) Execute a QRA of the set of hazardous scenarios determined in (i), expressing population risks in both individual and societal terms;

(iii) Compare individual and societal risks with the criteria for evaluating hazard to life stipulated in Annex 4 of the TM; and

(iv) Identify and assess practicable and cost-effective risk mitigation measures.

4. Proposed Hydrogen Production Plant and Storage Facilities

The Applicant shall investigate methods to avoid and / or minimise risk from hydrogen due to the proposed hydrogen production plant and storage facilities. The Applicant shall carry out hazard assessment to evaluate potential hazard to life due to the proposed hydrogen production plant and storage facilities. The hazard assessment shall include the following:

(i) Identify hazardous scenarios associated with the manufacture, storage, use and transport of hydrogen at the proposed hydrogen production plant and storage facilities and then determine a set of relevant scenarios to be included in a QRA;

(ii) Execute a QRA of the set of hazardous scenarios determined in (i), expressing population risks in both individual and societal terms;

(iii) Compare individual and societal risks with the criteria for evaluating hazard to life stipulated in Annex 4 of the TM; and

(iv) Identify and assess practicable and cost-effective risk mitigation measures.

5. Other Dangerous Goods Facilities

The Applicant shall investigate methods to avoid and / or minimise risk from dangerous goods (DG) due to other DG facilities of the Project. The Applicant shall submit a DG inventory of the DG facilities in order to seek the Director's agreement whether a quantitative hazard assessment is required to evaluate potential hazard to life due to the DG facilities, prior to the commencement of assessment. In the event of a hazard assessment for other DG facilities is required for the Project, the hazard assessment shall include the following:

(i) Identify hazardous scenarios associated with the manufacture, storage, use and transport of DG at the DG facilities and then determine a set of relevant scenarios to be included in a QRA;

(ii) Execute a QRA of the set of hazardous scenarios determined in (i), expressing population risks in both individual and societal terms;

(iii) Compare individual and societal risks with the criteria for evaluating hazard to life

stipulated in Annex 4 of the TM; and

(iv) Identify and assess practicable and cost-effective risk mitigation measures.

6. The hazard assessment shall also include a cumulative risk assessment of the Project, through interaction or in combination with other existing, committed and planned developments.

7. The methodology to be used in the hazard assessment shall be consistent with previous studies having similar issues.

Appendix L

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 M

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

2. To facilitate public inspection of EIA report via EIAO Internet Website, the Applicant shall provide electronic copies of both the EIA report and the executive summary prepared in HyperText Markup Language (HTML) 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 the executive summary shall be included in the beginning of the document. Hyperlinks to figures, drawings and tables in the EIA report and the executive summary shall be provided in the main text from where respective references are made. 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.