MEMO

From Director of Environmental Protection	**To** Govt. Engineer/Railway Development (Attn: Mr. T Leung) (Fax No. 2761 1508, total 12 pages)
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Agreement No. CE 87/97
The Second Railway Development Study
Strategic Environmental Assessment in Study Brief

---- As agreed at our meeting of 7.1.98, I attach for your use a revised version of the strategic environmental assessment component of the Study Brief for the above study.

2. Please let me know if you have any questions on this revised version.

(Wong Hon Meng)
Senior Environmental Protection Officer
for Director of Environmental Protection

c.c.
DAF (Attn: Mr. J.K. Chan)

P(TA), S(NP)1, S(AP)2, S(WP)4, S(WS)2

Strategic Environmental Assessment (SEA)

Introduction

6.25 Noise generated from rail traffic has always been a major concern to railway developments and existing and potential future noise-sensitive developments close to railway lines. To reduce the potential noise impact, this issue should be considered throughout the planning, design, construction, implementation and operation stages of railway developments and nearby land uses.

6.26 Apart from noise generated from rail traffic, the provision of railway lines will involve substantial modifications to the environment, such as land clearance, constructing bridges, tunnels, cutting and filling, and formation of embankments, and possibly reclamation. The direct short-term and long-term environmental impacts due to the construction and provision of these works should be considered at the strategic planning stage to avoid and minimise the impacts, and to ensure that there would be no insurmountable problem.

6.27 Inclusion of new railway networks into the overall transportation network has the potential to cause transportation modal changes. This indirectly changes the overall environmental impacts resulted from meeting the transportation need of the society. For example, the total air pollutants emissions and greenhouse gases emissions generated from the passenger and freight transportation sectors may be reduced due to replacing large amount of vehicle trips by train trips. Such strategic environmental implications due to the new rail networks, though may be positive in some instances, should be realised at the strategic planning stage.

6.28 New developments along new railway lines and within the station catchment may indirectly impose pressure on the environment at these locations. It is therefore necessary that the stations and railway lines be appropriately located, with the necessary supporting transportation network modifications, and land use planning and control so that the railway networks would not induce environmentally unacceptable developments, in particular at recognised sites of conservation importance or important habitats.

6.29 As mentioned in the HKSAR CE's policy speech of October 1997, we need to consider how to sustain and enhance our environment in strategic planning. . New railway networks planning is a strategic planning which may affect the environmental sustainability. For example, use of rail may have implications on greenhouse gases emissions which concern climate change; clearance or disturbance to areas of high conservation values or endangered species may deprive the future generation's right to enjoy them. The strategic environmental sustainability related implications are relevant to be considered in railway networks planning exercise.

Objectives

6.30 The objectives of the SEA are:

- To encourage integrated consideration of environmental factors together with other considerations in formulating the various railway network options to avoid potential environmental problems;

- To provide information, including environmental justifications if appropriate, to justify the need for additional rail networks, and for adopting the preferred railway network(s);

- To identify and rule out railway development and network options which are environmentally unacceptable even after implementation of all practical mitigation measures;

- To identify the environmentally-preferred railway development and network options, and provide environmental input into the options selection process;

- To evaluate at a strategic level the potential environmental impacts of the preferred railway network(s) and development(s) recommended by the Study, identify any environmental mitigation measures, and follow up investigations required.

Scope

6.3.1 *'Railway network'* to be considered in the SEA should include the network as a whole, the individual railway lines and their alignments.

6.3.2 *'Railway development'* to be considered in the SEA should include the following elements:

(a) Basic railway infrastructure and facilities such as the tracks, tunnels and bridges for rail and those for crossing the rail lines, stations, freight loading and unloading terminals, depots, maintenance workshops, administrative buildings and earthwork;

(b) Facilities supporting the railway such as public transportation interchanges, car parks for park-and-ride, and modifications to road network necessary to support the services of the rail operation;

(c) All new developments proposed by the Study, in particular those along the railway lines and around stations;

(d) Physical modifications to the existing transportation infrastructure, other developments and the environment necessary for the construction, provision and operation of the railway network(s);

(e) New developments along the railway lines, around stations and within the catchment of the stations not proposed by the Study but likely to be stimulated by the new railway networks. (Only preliminary and indicative assessment is required for this part of the 'development'. The assessment is only required to identify the key potential environmental concerns and any follow up investigations, attention and/or control required to avoid the potential adverse environmental impacts.)

6.33 Four types of environmental evaluation are to be carried out:

(a) Justify the need for the additional transportation networks and linkages identified, and why railway is the preferred mode, through general broad brush evaluation and/or providing appropriate information from other studies such as CTS-3 and TDSR.

(b) Comparison of the environmental performance of various railway network and development options and combinations to identify the environmentally-preferred options or combinations, and options or combinations which are environmentally unacceptable. The findings should then be considered in the overall evaluation of the network and development options.

(c) Identification and evaluation of the potential key environmental implications of the preferred network and development option(s) recommended by the Study, including issues such as noise, ecology, visual, cultural heritage, water, waste, air (including greenhouse gases) and resources utilisation wherever relevant, and identification of any mitigation measures and further investigations required. The evaluation should be able to illustrate the magnitude of the problems and whether or not mitigation measures could be provided to alleviate any potential environmental impacts to within established guidelines and standards.

(d) Discussion on the strategic implications of the preferred network and development option(s) on Hong Kong's environment, such as total amount of loss in recognised sites of conservation importance, important habitats, areas of heritage importance, any overall deterioration in the noise environment, any reduction in air pollutants and greenhouse gases emissions, and identification of appropriate mitigation measures if appropriate.

The selection of the strategic performance indicators and evaluation methodologies, and the actual comparison and evaluation should aim at meeting the objectives of the SEA. The level of details should be such that further details would not affect the conclusions on the environmental acceptability and preference of the options considered.

6.34 The following implications, if relevant, should be considered during the four types of environmental evaluation to meet the study objectives:

(a) impacts or development constraints due to all activities caused by the construction, operation and maintenance of the railway networks and developments considered or proposed in the Study on the environment and other existing or potential sensitive receivers and developments likely to be affected. Examples of impacts include rail noise impacts, ecological and cultural heritage impacts due to land clearance, any air quality and greenhouse gases implications, and water quality impacts due to reclamation for the railway development, and constraints imposed by railways on development potential of sites affected;

(b) strategic implications such as reduction in air pollutant emissions and greenhouse gases (including Volatile Organic Carbons (VOCs)) associated with transport modal changes, disturbances caused by developments stimulated by the network on specific recognised sites of conservation importance or important habitats;

(c) cumulative impacts and individual impacts due to the railway links and developments considered in the Study;

(d) any cumulative impacts with existing or any other planned rail, road or other developments if relevant, and through modelling for noise assessment; and,

(e) any short-term impacts due to staged or partial development of the preferred network and development option(s).

Technical Requirements

6.35 The Consultants shall collect and update relevant background environmental information relating to those areas likely to be affected by the railway and development options to be considered in the Study. While site investigations or surveys may be required, existing information should be used as far as possible, including the following:

(a) environmental reports produced by EPD;

(b) the strategic environmental assessment in the Territorial Development Strategy Review;

(c) the environmental components in CTS-3, Freight Transport Study and the CROSSLINKS study;

(d) the environmental impact assessments carried out for the Airport Core Projects and the results of ongoing monitoring and audit programmes; and,

(e) other environmental impact assessment reports relevant to areas of concern.

The baseline condition should be established using appropriate strategic parameters to such a level of details that further details would not alter the conclusions on the environmental acceptability and preference of the strategic options under consideration. The information should also be able to provide a foundation for assessing the nature and extent of potential implications which could arise from different railway development scenarios.

6.36 The Consultants shall identify the key environmental concerns and implications relevant to the rail network and associated developments; establish appropriate strategic performance indicators, criteria and evaluation methodologies, in quantitative terms wherever possible, on the key concerns and implications for environmental acceptance testing and performance comparison. Examples of potential concern are rail noise level, population exposed to rail and road noise, potential encroachment on recognised sites of

conservation importance, loss of important habitats and areas of heritage importance, any reduction in air pollutants and greenhouse gases, and any water quality impacts due to reclamation or other works. The key concerns and implications should be identified, taking into account both the characteristics of the impact generators and impact receivers such as the railway network and development as generators and the environment and sensitive land uses as receivers.

6.37 Having regard to other studies such as TDSR and CTS-3 and other relevant information, the Consultants shall provide information to establish the need for additional transportation network, and, if appropriate, justify the use of rail from environmental implications points of view. The environmental justification could be provided by general broad-brush comparisons of the environmental implications of using rail instead of motor vehicles or other practicable transportation means to meet the transportation demand. If the provision of additional rail cannot be justified on environmental ground, information on other non-environmental considerations which support the proposal should be provided as reference.

6.38 Using the environmental implications indicators, criteria and methodologies established in section 6.36 above, the Consultants shall evaluate and compare the environmental performance of the rail network and development options considered in the Study. If appropriate, the options could be refined or alternative options developed based on the evaluation results to improve the options' environmental performance and acceptability and/or to optimise both the transportation and environmental benefits. Options which fail to meet the criteria and therefore environmentally unacceptable should be identified. The environmentally-preferred option(s) should also be stated. The findings and conclusions on the strategic environmental comparisons of the network and development options should then be provided to the overall Study for inclusion into the overall comparison of the network and development options. Reference to the relevant assessment and findings of the TDSR and CTS-3 should be made where appropriate.

6.39 After the preferred network and development option(s) has been selected for the whole Study, the Consultants shall confirm its environmental feasibility by identifying and evaluating the potential environmental impacts and any mitigation measures and follow-up investigations required. The information and findings of the environmental performance evaluation and comparison carried out to meet the requirements of section 6.38 above should be used where appropriate to avoid duplication of effort. In the assessment, specific environmental concerns should be identified with possible mitigation measures stated. This include potential concerns due to developments likely to be stimulated by the proposed option(s). In situations where certain mitigation measures must be exercised, such as the use of special rolling stocks, track design, covered railway sections for rail noise control, land use planning control and constraints to be imposed on nearby and/or future developments, noise barriers and covered rail sections, compensatory tree planting and restoration/replacement of carbon sink and important habitats at specific locations, further environmental investigation before other developments can proceed, and special phasing and timing of works, the measures should be described clearly and included as an essential component of the proposed strategy. The need for any further study to examine specific strategic environmental issues for the later stages of planning and implementation

of the option(s) should be identified with its scopes defined. All the mitigation measures and follow up studies identified should also be covered in a summary action plan to facilitate future monitoring and auditing of the strategy.

6.40 The Consultants shall summarise and discuss the strategic implications of the proposed railway network and development option(s) on Hong Kong's environment. The discussion can be based on the work carried out to meet the requirements above. Strategic environmental issues specific to the proposed option(s) should also be included, such as the extent of any deterioration in acoustic environment, amount of natural conservation area loss and loss of important habitats, and any reduction in air pollutants emissions and greenhouse gases emissions due to transport modal changes and its consequential air quality implications. Potential measures to improve the strategic environmental performance of the proposed network and development options should be identified if appropriate.

6.41 The Consultants shall develop an appropriate framework and methodology for a strategic environmental monitoring and auditing mechanism for the proposed strategy and development to ensure that the environmental recommendations and mitigation measures identified in the SEA would be carried forward and implemented at the subsequent stages of the strategy and development. For avoidance of doubt, the actual monitoring and auditing work is not part of the SEA, but a commitment to be stated in the proposed strategy and development.

Reports and Working Papers

6.42 Reports and other documents for the SEA shall be separate from the main study reports and papers, and shall consist of at least of the following:-

(a) A SEA Inception Report including :-

- understanding and appreciation of the objectives of the SEA Study;
- approach and methodology for various parts of the SEA Study;
- list of reports and working papers to be prepared and submitted;
- a work programme, with major work tasks and key decision/conclusion points identified and briefly described;
- a schedule detailing the submission dates of reports and proposed dates of the Environmental Study Management Group (ESMG) meetings; and
- organisation and staffing of the environmental study team.

(b) An Initial Evaluation Report which:-

- provides an initial evaluation of the potential key environmental impacts and

cumulative effects arising from different potential strategic railway network and development options;

- identifies and defines measurable environmental parameters and features likely to be affected by the potential options, and identifies work required to provide a baseline profile of these key environmental features likely to be affected; and

- compiles a list of key issues which will form the basic framework for the subsequent stages of the SEA study, such as environmental justification for new rail network development, comparison of strategic options, and strategic environmental impact assessment of the proposed option(s).

(c) Key Issue Reports covering those issues of key concern identified through the Initial Evaluation Report and the review of the Initial Evaluation Report by the ESMG, and the following subjects:-

- need and environmental justifications for new rail network and associated developments;

- environmental indicators, criteria and methodologies to be used for strategic evaluation and comparison of the development options considered in the Study; and

- baseline conditions of environmental features which may be affected by the options, including constraints mapping to facilitate identification of option(s) or railway alignment(s) with comparatively less significant environmental impacts.

(d) An Interim Assessment Report which:-

- evaluates and compares the environmental performance of the railway network and development options considered by the Study;

- identifies options which are environmentally unacceptable even with all practical mitigation measures implemented; and

- identifies the environmentally preferred option(s) and clearly states any design features or mitigation measures assumed in evaluating the option(s).

The findings and conclusions of the report will be fed into the overall Study for identifying the preferred option(s) taking into account other non-environmental considerations when necessary.

(e) A Final Assessment Report which:-

- fully satisfies the requirements of SEA part of this Study Brief. The report shall be a self-contained document. To meet this requirement, appropriate matters covered by other reports such as the Initial Evaluation Report, Key Issue Reports,

and papers covering the identification of the preferred option(s), shall be summarised or repeated in the report.

- provides clear summaries, such as in the form of tables, of the environmental evaluation and comparison of the options considered; design features, mitigation measures, unmitigated and residual environmental impacts, and strategic environmental impacts of the proposed option(s); and strategic environmental monitoring and auditing requirements.

(f) An Executive Summary in both English and Chinese highlighting the SEA issues of concern to the community, such as the environmental justification for the proposed strategic option(s), acceptability of residual environmental impacts and cumulative effects, requirements for implementation of the option(s), and the basis for and implications of those requirements. It is intended that the information contained therein will assist the Government in undertaking consultation with the Advisory Council on the Environment (ACE), District Boards, and in other public consultation exercises;

6.43 Draft of all papers and reports including the Initial Evaluation Report, Key Issue Reports, Interim Assessment Report, Final Assessment Report, and Executive Summary shall be prepared and submitted to the Director of Environmental Protection for distribution to ESMG members for comment; and any revisions or supplements to the above as may be required by the ESMG.

6.44 The Consultants shall produce the above reports and send to the Director of Environmental Protection in the following number of copies and within the specified time from the commencement of the Study :-

Draft SEA Inception Report	4 weeks	20 copies
Final SEA Inception Report	8 weeks	20 copies
Draft Initial Evaluation Report		20 copies
Final Initial Evaluation Report		20 copies
Draft Key Issues Reports		20 copies
Final Key Issues Reports		20 copies each
Other draft supplementary papers proposed by the Consultants or requested by the ESMG		20 copies each
Final supplementary papers proposed by the Consultants or requested by the ESMG)		20 copies each
Draft Interim Assessment Report	7 months	20 copies
Final Interim Assessment Report	8 months	50 copies
Draft Final Assessment Report	15 months	20 copies
Final Assessment Report	18 months	80 copies
Draft Executive Summary	16 months	20 copies
Final Executive Summary*	18 months	150 copies

* in both Chinese and English versions (150 copies each)

6.45 The Consultants shall also supply the Government with appropriate copies of such reports, technical notes, working papers, briefs, supporting documents and other relevant inputs as may be required during the SEA Study or any public consultation exercise.

6.46 The requirements for public projects in the PELB General Circular 2/94 on the Public Access to Environmental Impact Assessment Reports shall be complied with. The final SEA reports and Executive Summary will be made available to the public according to the provisions in the circular. The SEA study findings may be presented to the ACE EIA Sub-committee and its full council wherever necessary.

6.47 In accordance with PELB T/C 2/92, if there is any disagreement on the findings of the study or on the necessary environmental protection and pollution control measures, the issue will be referred to the Secretary for Planning, Environment and Lands who shall resolve the differences in consultation with the ACE, appropriate Bureaus and Departments.

6.48 The following environmental-friendly measures in preparing the documents as required in section 6.44 should be adopted :-

(a) Final Reports and the Executive Summary have to be printed on recycled paper. The use of recycled paper with not less than 50% recycled materials and not exceeding 80 gsm should be used as a general rule. The logo of recycled paper should be printed in prominent area of the report.

(b) Documents other than Final Reports and Executive Summary should not be excessively bleached.

(c) Excessive use of plastic laminates, glossy covers or double covers should be avoided as far as possible. Use of recyclable non-glossy art board paper as document covers should be encouraged.

(d) Final Reports and Executive Summary should be of single line spacing on both sides of the paper.

(e) Excessive white space around the borders and in between the paragraphs of all documents prepared by the consultants should be avoided.

(f) Excessive use of blank papers should be avoided as far as possible.

(g) Page numbers can be reduced by reducing the size of typeface (font). For example, "Times New Roman" or "C.G. Times" font size not exceeding 10 characters per inch (cpi) or equivalent to point 12 should be used in balancing legibility and clarity against our waste reduction objective.

Environmental Study Management Group (ESMG)

13.4 The Strategic Environmental Assessment (SEA) will be managed by an Environmental Study Management Group chaired by a representative of the Director of Environmental Protection. This shall be the forum for liaison with Government departments and agencies, providing guidance to the SEA part of the overall Study. The draft terms of reference and membership for the ESMG is at Annex__ .

ANNEX

Environmental Study Management Group

Draft Membership and Terms of Reference

Membership

Chairman:	Principal Environmental Protection Officer (Territory Assessment), EPD
Members:	Representatives from the following groups of the EPD
	Noise Management and Policy Group Water Policy Group Air Policy Group Waste Policy and Services Group
	Representatives of:
	Director of Highway Director of Agriculture and Fisheries Secretary for Broadcast, Cultural and Sports Director of Planning Commissioner for Transport Director of Electrical and Mechanical Services
Ad-needed members:	Representatives from other Government Departments on a need basis
In attendance:	Project Director and other representatives from the Consultants

Terms of Reference

a. To review the study programme, monitor and control progress and coordinate all activities related to the environmental aspect of the study to achieve timely completion;

b. To provide guidance on technical environmental aspects of the study;

c. To resolve any differences in opinion among various Government offices, relevant parties, and the Consultants, and seek guidance and resolution from the Steering Group;

d. To consider and endorse papers, reports and other relevant submissions to be prepared by the Consultants related to the environmental aspect of the Study;

e. To co-ordinate documents related to environmental aspect of the Study for consultation.