ADVISORY COUNCIL ON THE ENVIRONMENT
ACE
環境問題諮詢委員會

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for Advice

Territorial Development Strategy Review
Strategic Environmental Assessment

Purpose

The purpose of this paper is to summarize the findings of the Strategic Environmental Assessment (SEA) carried out as part of the Review of the Territorial Development Strategy.

Advice Sought

2. ACE members are requested to advise on the findings of the Strategic Environmental Assessment of the Territorial Development Strategy (TDS) Review.

Background

3. The review of the TDS commenced in mid 1990 with the objective of providing a landuse - transport - environment framework to guide the future development of Hong Kong. The TDS Review has produced a recommended long term strategy for an assumed year of 2011 for each of two broad scenarios. Scenario A assumes the Pearl River Delta (PRD) as the primary economic hinterland of Hong Kong and postulates a population of 7.5 million people for the Territory. Scenario B assumes the PRD, other parts of Guangdong Provinces and inner provinces of China as the primary economic hinterland, together with a territorial population of 8.1 million. These two scenarios are not mutually exclusive but represent a potential progression of development over a time scale that cannot be defined with great certainty. The population assumptions are not firm projections but represent a range of contingent probabilities.

4. The TDR Review also proposes a Medium Term Strategy with a 2006 time horizon and a population level of about 7.3 million people. The recommended strategy is the outcome of an evaluation of two principal options, namely a New Territories-Biased Strategy on the one hand, and a Harbour-biased Strategy, on the other. Neither of these two options was found to work satisfactorily on their own counts.

5. Throughout the entire TDS Review process, a series of options has been produced and evaluated against a number of key objectives relating especially to land use, transport, environment, economic, financial, institutional and environmental aspects. Environmental issues have been systematically examined and evaluated. Because of the strategic nature of the review and the range and complexity of environmental issues involved, a strategic-level environmental assessment process has been developed and applied to this TDS Review. The objectives of the study are to provide inputs for formulation and assessment of future developments within a broad landuse-transport-environment plan, and identify any outstanding environmental issues that require for investigations.

6. The strategic environmental assessment process focuses on cumulative environmental implications associated with the broad pattern and direction of growth and the selection of strategic growth areas. It involves the carrying out of a baseline study to establish the environmental profiles for the territory as a whole, identify strategic environmental constraints, establish environmental principles and criteria for generation and evaluation of development options, and assess and evaluate the initial, hybrid and preferred options. The application of the strategic environmental assessment process has led to the deletion of some environmentally very damaging initial options.

7. A report on environmental baseline conditions was produced in 1993 and its findings formed part of the public consultation documents released in 1993. The findings of the strategic environmental assessment of options are now consolidated into this Strategic Environmental Assessment Report.

8. Because of the strategic nature of the study and the many complex, wide ranging environmental issues involved, conventional methodologies for project environmental impact assessment cannot be directly applied. The extent of quantification and the level of abstraction have to be suitably adjusted or simplified to make the assessment practicable and within the constraints of resources available for the study. It has, therefore, not been possible to fully quantify all issues to the extent as in the case of a project environmental impact assessment. Where full quantification is not practicable, a 'best estimate' approach has been taken and the uncertainties in the analysis have been stated. Wherever appropriate, the need for further detailed studies has been pointed out.

9. Both the environmental findings of the long term strategy and the medium term strategy are summarised in this paper. The long term and medium term strategies, as well as the definition of low-growth and high-growth, are described in the Report and other documents distributed by the Planning Department. The environmental consultant and Planning Department will make a presentation on the findings of the strategic environmental assessment study.

Views of Environmental Assessment Working Group (EAWG)

10. The strategic environmental assessment study has been undertaken by an environmental consultant employed by the Planning Department working under the guidance of an Environmental Assessment Working Group convened by the Director of Environmental Protection. The Environmental Assessment Working Group considers that the Strategic Environmental Assessment is technically sound and that the assessment has identified major environmental issues, many of which relate to policy matters. Insofar as the technical content is concerned, the report has been accepted by the Environmental Assessment Working Group. The Environmental Assessment Working Group also agreed that further investigations must be carried out to examine all outstanding environmental issues in the context of Study on the Sustainable Development in the 21st Century, sub-regional and feasibiity studies, and environmental impact assessments to be carried out for different packages of projects.

Findings for the Long Term Strategies

11. On the basis of current policies and proven technology, potentially serious environmental impacts would result from the assumed levels of population growth as set out in the development scenarios. In the long-term, potentially serious environmental impacts would result within both the high growth and low growth scenarios. Even with proposed mitigation measures in place to minimise the environmental impacts, serious human health-related residual impacts are predicted to occur. The major impacts are summarised in the following paragraphs.

Air Quality

12. Air quality modelling indicates that under both the high growth and low growth scenarios, vehicle related air pollution mainly associated with goods vehicle traffic are likely to cause exceedances of the Statutory Air Quality Objectives (AQOs) in some parts of the Territory. As would be anticipated, the situation is particularly severe under the high growth scenario with AQOs being exceeded in the Harbour and Tuen Mun Areas even with all proposed pollution control measures in place.

13. Sensitivity analysis showed that under the low growth scenario, provided that all currently proposed pollution control measures are put in place and are effective, including more stringent emission standards for new vehicles and the proposed diesel-to-petrol scheme, the level of pollution can be reduced such that the AQO's can be achieved in most parts of the Territory. The implementation of these proposed vehiclar emission control measures requires further policy approval and new legislation. However, even with all proposed controls in place, exceedance of AQOs would still be anticipated in the Tuen Mun Areas by 2006 (high growth) and 2011 (both high and low growth). If some of the controls are not implemented, the situation will be worse.

14. Further analysis will be required to refine these predictions and to define other potentially serious impacts, including, in particular, to forecast effects of particulate matter associated with traffic demand and construction of additional port facilities.

Water Quality and Sewerage

15. Planned sewerage infrastructure would be overloaded in many areas under both high growth and low growth scenarios. The worst affected area is the Northwest New Territories and the Northeast New Territories and the Metro Areas. All of the major residential growth areas recommended could be accommodated in the overall development strategy in the medium term, provided that it is possible to expand the existing sewerage infrastructure. Further investigations of the feasibility and cost implications of sewerage infrastructure provision and upgrading are required as a matter of urgency. The proposed Green Island developments are contingent on later stages of the Strategic Sewage Disposal Scheme (SSDS) or alternatives. Recommended minor growth areas will require further studies and detailed design to develop comprehensive sewage collection, treatment and disposal networks. Immediate action in reviewing existing sewerage master plans will be required to address some of the more serious problems.

16. The assimilative capacity of receiving water bodies in the Territory will be overloaded and water quality objectives (WQO's) would probably be unachievable in some areas, under both scenarios. The extent of the water quality impacts is uncertain and requires detailed quantitative study, together with investigation of the feasibility of mitigation measures. There is an urgent need to develop regional water quality management plans and a control strategy for the NWNT coastal area.

Waste Disposal

17. In the worst case scenario, the life spans of existing and planned landfills are predicted to be reduced substantially. If the recommendations of the Waste Reduction Study are implemented and if controls are extended to construction waste, the problem can be mitigated to some degree but urgent policy action would be required.

Noise Impacts

18. The forecast noise levels would increase in many areas for both high growth and low growth scenarios. Traffic noise in both the urban areas and the New Territories is expected to exceed the Hong Kong Planning Standards and Guidelines requirements. Development proposals for the NWNT are of particular concern because of increased port related activities and the anticipated growth of associated traffic. Further study is necessary to refine the estimates and to include the cumulative impacts, particularly those associated with off-site port-related impacts.

Nature Conservation

19. The proposed developments have the potential to adversely impact ecologically valuable habitats. The existing planning mechanism provides varying degrees of protection for the conservation of some sites. An ecological baseline study is being carried out by Hong Kong University and is expected to provide information on the location and extent of ecologically important areas, although further detailed ecological survey work may be required on a Territorial basis. There is a need to review the existing conservation strategies to enable informed decisions to be made on the effects of development in ecologically important areas.

Sustainability

20. Many of the principle components of Agenda 21 have been incorporated into the TDS Review process. However, the predicted environmental impacts principally summarized above cast doubts on the sustainability of the long-term strategies. Some of the identified problems could be mitigated only if adequate resources are applied; others require policy actions. The many environmental issues brought out by the SEA of the TDSR clearly point to the need to develop a territorial and strategic sustainability framework which would form the basis for proposing further economic development without depleting the environmental qualities of the Territory.

Summary of Issues for Long Term Strategies

21. To summarise, the Strategic Environmental Assessment of the Preferred Options has identified that there will be potentially serious environmental consequences from both the high growth and low growth scenarios, including:

(a) exceedance of Statutory Air Quality Objectives due to vehicular emissions;

(b) overloading of planned sewerage infrastructure;

(c) overloading of the assimilative capacity of receiving water bodies;

(d) a reduction in the planned capacity of landfills;

(e) exceedance of noise guidelines; and

(f) adverse impacts on ecologically valuable habitats.

Findings for the Medium Term Strategy

22. A qualitative assessment was carried out for the recommended medium term strategy, making the best use of any relevant findings compiled during the strategic environmental assessment of the long term strategies. It shows that a number of the environmental problems identified for the long term strategy would begin to manifest themselves before 2006, and such problems include possible exceedances of Air Quality Objectives even with all the planned controls in place, worsening of noise situation due to traffic flows and good vehicles, water quality and sewage disposal in some areas such as the North West New Territories. Some of the actions recommended key actions, among others, to be taken to address the problems identified:

(a) to review of existing and planned sewerage infrastructure system, and to bring early improvements to receiving water quality, particularly NWNT waters;

(b) to implement the recommendations of the Waste Reduction Study at the earliest opportunities;

(c) to avoid or minimise adverse ecological impacts through the EIA studies at the stage of feasibility study;

(d) to adopt more stringent pollution control over vehicle emissions, and to improve traffic management system so as to reduce traffic-related pollution; and

(e) to address the cumulative noise impacts and propose suitable mitigation measures at the stage of feasibility studies.

23. To take forward the recommendations in the study, additional resources will be required. While the study report has highlighted all major actions that would be required, detailed mechanisms for following-up these recommendations are yet to be worked out.

24. To meet the forecast medium-term development needs, every endeavour will need to be made to make timely and adequate provision for environment-related infrastructure.

Conclusions

25. The Strategic Environmental Assessment study has identified all key environmental implications of both the long term strategies and the recommended medium term strategy, and provided essential inputs to the strategy formulation. It reinforces the need to pursue a range of policy issues to reduce or avoid adverse environmental impacts, and to re-consider and re-examine whether the environmental degradation implicit in the present development strategies is acceptable to the community. It is considered necessary to carry out further studies to address the outstanding environmental issues identified and determine the additional actions and the additional resources that are needed to resolve the environmental matters satisfactorily. Also, the environmental implications of different packages of development scenarios will need to be fully examined through environmental impact assessments conducted as part of cross-sectoral feasibiity studies and project planning. But even more importantly, the long term environmental sustainability issues associated with the long term strategy will require investigation in the context of Study on the Sustainable Development in the 21st Century.

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Environmental Protection Department on behalf of
Environmental Assessment Working Group
Territorial Development Strategy Review