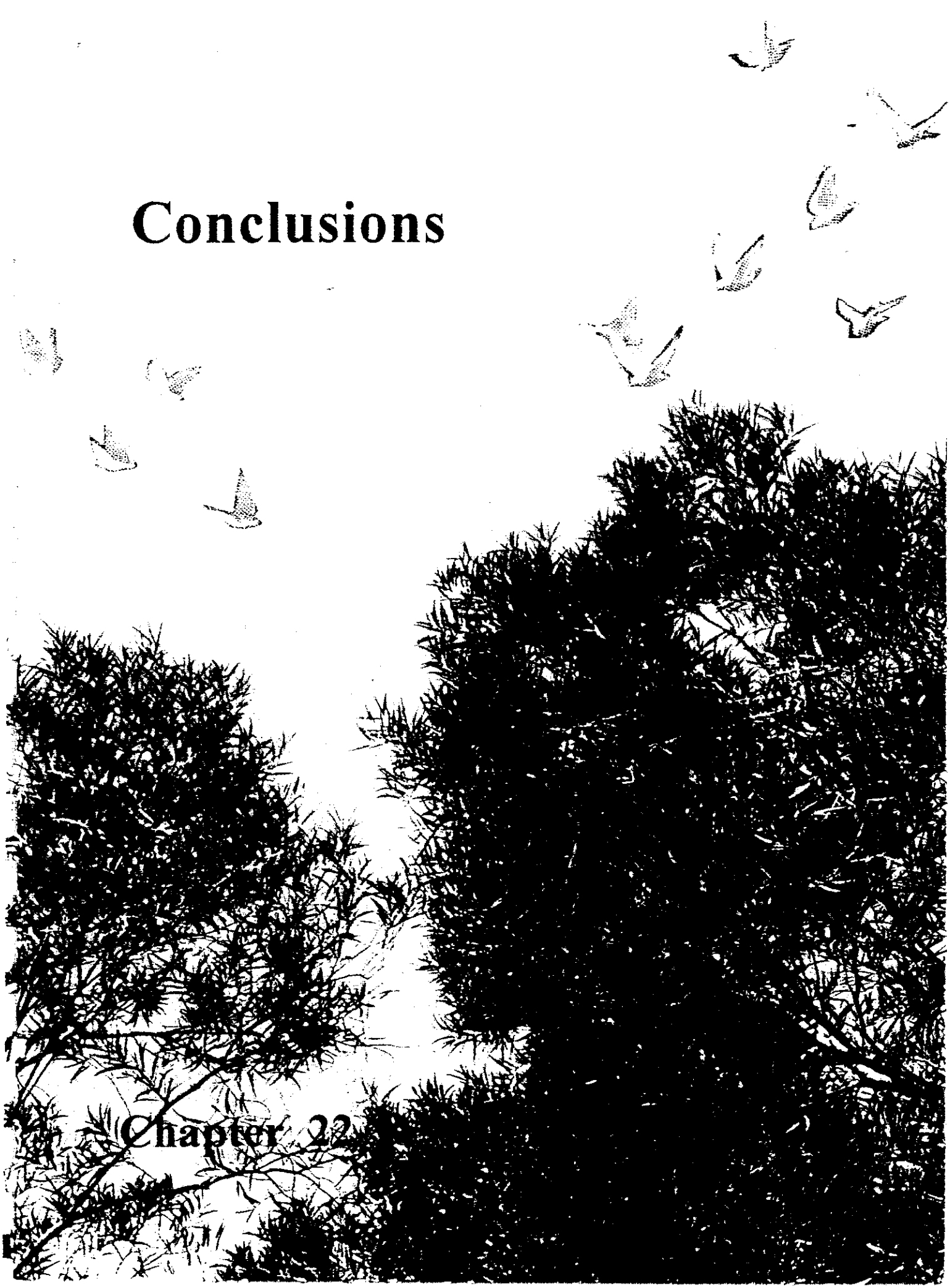
Conclusions



Chapter 22

CHAPTER TWENTY-TWO
CONCLUSIONS

1. On the basis of the foregoing it is concluded that:

(a) Goods vehicle traffic is expected to double between 2001 and 2011 under Scenario A with an even greater increase forecast for Scenario B. Under both scenarios, vehicle related air pollution mainly associated with goods vehicle traffic is likely to cause exceedance of the statutory Air Quality Objectives (AQOs) in some parts of the Territory. The situation is particularly severe under Scenario B with AQOs being exceeded in the Harbour and Tuen Mun ACZs even assuming all proposed pollution control measures in place. Under the low growth scenario, provided that all currently proposed pollution control measures are implemented and are effective (including the diesel to petrol programmes), the level of pollution can be reduced such that the AQOs can be achieved in most parts of the Territory. The adoption of Euro I and Euro II vehicle emission controls are necessary if the AQOs are not to be exceeded before 2006.

(b) Dust has been identified as a territory wide issue. Increase in particulates due to the increased vehicle fleets and frequent road trips will cause further deterioration. Additional port facilities are forecast to have a significant effect on fugitive dust emissions throughout the Territory. This will exacerbate the air pollution problems. There is a need to study this issue in detail and to define effective measures to minimize such problems.

(c) Traffic noise in many areas for both scenarios is expected to exceed the requirements of the Hong Kong Planning Standards and Guidelines. The traffic mode mix and pattern need to be carefully considered at the strategic and policy level while action will also need to be taken at the district level. 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. Other traffic and transport related issues include the direct impacts related to additional infrastructure provision, such as the possible Route Y project.

(d) Planned sewerage infrastructure will be overloaded in many areas under both scenarios. The worst affected areas are the NWNT, NENT and Metro Areas. All of the strategic 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. The development of Green Island would be contingent on implementation of later stages of the SSDS or other means of sewage treatment and disposal. Further investigations of the feasibility and cost implications of sewerage infrastructure provision are required.

(e) Minor growth areas, especially in the NWNT, require further study and detailed design to develop comprehensive sewage collection, treatment and disposal networks. Ecological impacts caused by the development, even of minor growth areas, and the associated effluent collection and disposal systems, should also be addressed.

(f) The assimilative capacity of receiving water bodies in the Territory will be overloaded and Water Quality Objectives (WQOs) will probably be unachievable in some areas, under both scenarios, unless existing and planned treatment systems are upgraded. The extent of the water quality impacts is uncertain and requires detailed

quantitative study, together with investigation of the feasibility of mitigation measures.

(g) Provision of about 890 hectares of land under Scenario A and 1,500 hectares under Scenario B, in addition to the 900 hectares for port facilities, is forecast to have a significant impact on the fugitive dust emissions throughout the Territory, particularly for NWNT, NENT and Metro area. In addition, the proposed scale of development will generate a massive volume of construction waste which will require disposal.

(h) Solid waste generation rates are forecast to exceed current estimates for both construction and domestic wastes arisings. In the worst case scenario, the life spans of existing and planned landfills are forecast to be reduced substantially. If the recommendations of the Waste Reduction Study (WRS) are implemented and if controls are extended to construction waste, the problem can be mitigated to some degree. Consideration should be given to implementing the recommendations made in the WRS at the earliest opportunity and extending such measures to the industrial, commercial and construction sectors (hitherto exempt from consideration under the aforementioned WRS).

(i) With the redistribution of the industrial land use which incorporates trends towards emission-free manufacturing activities, it has been possible to formulate an industrial strategy which is acceptable in terms of air quality for both scenarios. Forecasts of industrial wastewater generation indicate that this will contribute 40% of the total volume of liquid waste to be disposed of on a daily basis. The estimated overall contribution of BOD loading to the total budget is 30% with 17% of the territorial SS and TKN loading generated by the industrial sector. Key areas where the estimated effluent generation exceeds the existing treatment capacity are the NWNT and NENT.

(j) On the basis of the preliminary estimates it has been calculated that the capital and treatment costs associated with the disposal of liquid wastes are 30% and 20% higher for Scenario B respectively compared to A. Other environmental mitigation costs are expected to demonstrate similar variations.

(k) All of the port related activities, especially at San Tin, Border Area and West Tuen Mun, will need detailed assessments and pollution prevention/reduction mechanisms to be built into the facilities to protect air and water quality and the ecosystems within Deep Bay, and the existing and planned residential developments from excessive noise, traffic related air pollution and interface problems.

(l) Open storage sites proposed for areas in the NWNT will need to be rationalised with all other activities planned for this area from an early stage and the traffic associated with these facilities considered in terms of the off-site impacts of noise and air pollution. Protection of ecosystems within these areas is another issue to be addressed.

(m) Further consideration needs to be given to the environmental impacts associated with the proposals to provide open storage sites in former borrow areas proposed for Refined Preferred Option B.

(n) All of the components of the Refined Preferred Options have been examined not only in the environmental context but also in planning, transport, and the regional context. Further and detailed consideration will need to be given to individual elements of all of the strategies, as well as to the base growth components (in the immediate future)

to ensure the strategic development goals of the territory as a whole are not compromised.

(o) There exists a need to develop SEMPs, define environmental baseline conditions at various levels of detail and develop a strategic environmental monitoring and audit programme (REMAP) which will assist in the decision making process for the development of the region.

(p) Integration of environment - transport and landuse models to assist in the decision making and planning processes (i.e. air quality models, GIS and water quality models simulating long term trends) should be developed and should be multi-functional for their stated purpose. They should also be flexible to allow rapid solutions to problems to be provided as well as determining effects of detailed long term/futuristic scenarios.

(q) Consideration should be given to regionalising institutional mechanisms/policy issues in an attempt to centralise development offices/environmental control bureaux (these could be regionalised although a central committee/office would need to be established) and enforcement agencies.

(r) Even with all of the proposed mitigation measures in place to minimise the environmental effects, there will still be serious residual impacts arising from the Refined Preferred Options. Individual components will need to be subject to the EIA process but even more importantly, the cumulative impacts will require investigation through detailed studies as a basis for future policy decisions. In many cases the engineering and financial viability of recommended mitigation has not been demonstrated (i.e. sewerage and water quality, waste disposal) and requires further study. Some problems require even more fundamental consideration (ie. air quality and noise impacts from goods vehicles).

(s) The predieted environmental impacts principally summarized above highlight possible concerns on the long-term sustainability of some of the TDS proposals. The many environmental issues brought out by the EA of the TDSR clearly point to the need to develop a territorial and strategic sustainability framework which would form the basis for proposing further development without depleting the environmental qualities of the Territory.