

6 ENVIRONMENTAL MONITORING AND AUDIT

6.1 Introduction

- 6.1.1 In this *Section*, recommendations for the Sai Sha Road Widening EM&A are outlined, taking account of the findings of the EIA and the environmental protection criteria requirements to be incorporated into the Detailed Design and Construction contracts.
- 6.1.2 This EIA has identified that EM&A will be necessary for noise impacts during the construction works.
- 6.1.3 During the construction and operational phases, implementation and maintenance of the recommended mitigation measures should be ensured.
- 6.1.4 The project proponent will undertake the EM&A work required during the construction works. The proponent's and the contractor's responsibilities will be related through the application of Event Contingency Plans (ECPs) to deal with any exceedance of the established criteria, either in the course of normal construction working or through unforeseen circumstances.
- 6.1.5 More detailed recommendations for the EM&A programme, including monitoring locations and equipment and monitoring and audit protocols, are set out in the accompanying initial version of the Sai Sha Road Widening EM&A Manual. The Manual follows the recommendations of the *Technical Memorandum on Environmental Impact Assessment Process, Environmental Protection Department, September 1997*. The EM&A Manual is based on the currently available information and it is expected to undergo a number of revisions as the EIA is completed and engineering designs are revised by the Detailed Design Consultants.

6.2 Environmental Monitoring and Audit

- 6.2.1 The overall objectives of the EM&A programme which will be undertaken during the construction works are as follows:
- to monitor the performance of the project and to provide an early indication if any of the environmental mitigation measures, identified in this report and/or implemented by the contractors, fail to meet the established standards and guidelines, particularly the environmental protection criteria identified in the EIA;
 - to check the implementation of the recommended environmental mitigation measures;
 - to take remedial action if unexpected problems or unacceptable impacts arise;
 - to provide data to enable an environmental audit to be undertaken;

- to provide a data base against which the short or long term environmental effects associated with the widening of Sai Sha Road may be determined; and
 - to verify the environmental impacts predicted in the EIA.
- 6.2.2 The monitoring will be undertaken by the project proponent's site staff under the direction of the site manager. The EIA has identified sensitive receivers near the construction worksites where noise monitoring will be required.
- 6.2.3 The monitoring locations will be selected to represent the sensitive receivers identified in the preceding *Sections* of the EIA. Preliminary locations for the monitoring stations have been identified in the accompanying initial version of the Sai Sha Road Widening EM&A Manual and these will be confirmed as the development programmes for the receivers become available.
- 6.2.4 Other monitoring may be undertaken by the project proponent during the construction works, although this will not relate directly to the EM&A programme, for instance, water quality monitoring may be required for the waste water discharge licence.
- 6.2.5 In order that the environmental monitoring may be audited, the EM&A Manual will establish procedures and protocols for carrying out, recording and reporting this work which should be included in the tender requirements. These procedures, protocols and reporting formats will be set out in an EM&A Manual.

6.3 Event Contingency Plans

- 6.3.1 The purpose of the ECPs is to provide, in association with the monitoring and audit activities, procedures for ensuring that if any deterioration of environmental quality occurs as a result of the construction works, either accidentally or through inadequate implementation of mitigation measures on the part of the contractor, that the cause of this is quickly identified and remedied, and that the risk of a similar event re-occurring is reduced.
- 6.3.2 The principle upon which the ECPs are based is the prescription of procedures and actions associated with the measurement of certain defined levels of pollution by environmental monitoring, established prior to the commencement of the construction works. These are:
- *Action Level*, beyond which appropriate remedial actions may be necessary to prevent environmental quality deteriorating further; and
 - *Limit Level*, the limits stipulated in the relevant Hong Kong statutes and guidelines, if these are exceeded, works should not proceed without appropriate remedial action, including a critical review of plant and working methods.

6.4 Reporting

- 6.4.1 A Monthly Report will be produced as part of the Sai Sha Road Widening EM&A programme which may include: a brief account of construction activities during the month, an interpretation of the significance of the monitoring results by verifying compliance, highlighting any failure to comply with the target levels; and an account of any necessary remedial measures recommended by the site manager and implemented by the contractor.