

11 ENVIRONMENTAL MONITORING AND AUDIT

11.1 INTRODUCTION

A separate Environmental Monitoring and Audit (EM&A) Manual has been prepared according to the findings and recommendations of this EIA-FAR. The EM&A Manual sets out details of the monitoring and audit requirements and procedures for the construction of the Eastern MDC. The objectives of carrying out EM&A for the MDC include the following:

- to provide a database against which any short or long term environmental impacts of the development can be determined;
- to provide an early indication should any of the environmental control measures, ecological mitigation measures or practices fail to achieve the acceptable standards;
- to monitor the performance of the Eastern MDC and the effectiveness of mitigation measures;
- to verify the environmental impacts predicted in the EIA Study;
- to determine project compliance with regulatory requirements, standards and government policies;
- to take remedial action if unexpected problems or unacceptable impacts arise; and
- to provide data to enable an environmental audit.

A brief summary of the EM&A requirements is presented below.

11.2 ECOLOGICAL RESOURCES

The basic objectives of ecological monitoring and audit are as follows:

- verify the accuracy of the predictions of the ecological assessment study;
- detect any unpredicted ecological impacts arising from the proposed development;
- monitor the effectiveness of the mitigation measures; and
- recommend action plans in response to unpredicted impacts and/or failed mitigation.

The recommended ecological monitoring and audit programme is proposed to meet these objectives, focusing on monitoring the implementation of those mitigation measures for which monitoring may reveal potential improvements or corrective measures. The operation-phase monitoring framework for the ecological impacts and mitigation measures, including the related project management regime and planting monitoring is presented in the EM&A Manual. The following programme is recommended and reported in an Operations Monitoring Report.

- Monitoring of Bird Use of San Tin Villages Flood Storage Pond;
- Monitoring of Bird Use of Tidal Portion of Eastern MDC;
- Monitoring of Fish and Invertebrates in Constructed Wetland Area East of Eastern MDC;
- Monitoring of Bird Use of Constructed Wetland Area and Eastern MDC;
- Monitoring of Maintenance Regime of Eastern MDC; and
- Monitoring of Planting for Eastern MDC.

11.3 *WATER QUALITY*

Based on the results of this assessment of water quality impacts, it is recommended that during the construction of the Eastern MDC, a water quality monitoring and audit programme should be conducted in order to proactively detect any deterioration of water quality, at the discharge points of the Eastern MDC. The protocols will include but not be limited to the locations of sensitive receivers, monitoring locations, parameters and frequencies, monitoring equipment and necessary programmes for baseline monitoring, impact and compliance monitoring, data management procedures, and reporting of monitoring results.

11.4 *NOISE*

Noise monitoring is recommended during construction to ensure compliance with the limits for noise specified in the EIA Ordinance. It is recommended that noise monitoring be carried out during the construction period of the MDC works at representative locations including Sam Po Shue and Tung Chan Wai. Operational noise monitoring should be carried out during commissioning and operation of the pumping station.

11.5 *AIR QUALITY*

Dust monitoring is recommended during construction to ensure compliance with the target limits for air quality. The monitoring locations should be at the site boundary or such locations close to the major dust emission source, close to the sensitive receptors, taking into account the prevailing meteorological conditions.

11.6 *WASTE*

During the construction phase, auditing of different waste generation, storage, recycling, treatment, transport and disposal arrangements/procedures should be carried out periodically to determine if waste is being managed in accordance with approved procedures and the site waste management plan.