6. **WASTE MANAGEMENT IMPLICATIONS**

Introduction

6.1 This section identifies the types of wastes that are likely to be generated during the construction and operation phases of the proposed Project and evaluates the potential environmental impacts that may result from these waste arisings.

Environmental Legislation and Standards

6.2 The criteria and guidelines for assessing waste management implications are outlined in Annex 7 and Annex 15 of the Technical Memorandum on Environmental Impact Assessment Process (EIAO-TM), respectively.

6.3 The following legislation relates to the handling, treatment and disposal of wastes in the Hong Kong SAR and will be used in assessing potential impacts:

- Waste Disposal Ordinance (Cap. 354);
- Waste Disposal (Chemical Waste) (General) Regulation (Cap. 354C);
- Land (Miscellaneous Provisions) Ordinance (Cap. 28);
- Public Health and Municipal Services Ordinance (Cap. 132) - Public Cleansing and Prevention of Nuisances Regulation.

6.4 The Waste Disposal Ordinance (WDO) prohibits the unauthorised disposal of wastes. Construction waste is not directly defined in the WDO but is considered to fall within the category of “trade waste”. Trade waste is defined as waste from any trade, manufacturer or business, or any waste building, or civil engineering materials, but does not include animal waste. Under the WDO, wastes can be disposed of at sites licensed by the EPD.

6.5 The Public Cleansing and Prevention of Nuisance Regulation provides control on illegal tipping of wastes on unauthorised (unlicensed) sites.

*Construction and Demolition (C&D) Materials*

6.6 The current policy related to the dumping of C&D material is documented in the Works Branch Technical Circular No. 2/93, ‘Public Dump’. Construction and demolition materials that are wholly inert, namely public fill, should not be disposed of to landfill, but taken to public filling areas, which usually form part of reclamation schemes. The Land (Miscellaneous Provisions) Ordinance requires that dumping licences are obtained by individuals or companies who deliver public fill to public filling areas. The Civil Engineering & Development Department (CEDD) issues the licences under delegated powers from the Director of Lands.

6.7 Under the proposed Waste Disposal (Charges for Disposal of Construction Waste) Regulation to be implemented in 2005, construction waste delivered to a landfill for disposal must not contain more than 50% by weight of inert material. Construction waste delivered to a sorting facility for disposal must contain more than 50% by weight of inert material, and construction waste delivered to a public fill reception facility for disposal must consist entirely of inert material.

*Chemical Waste*

6.8 Under the regulation of WDO, the Waste Disposal (Chemical Waste) (General) Regulation provides regulations for chemical waste control, and administers the possession, storage, collection, transport and disposal of chemical wastes. The Environmental Protection Department (EPD) has also issued a ‘guideline’ document, the Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes (1992), which details how the Contractor should comply with the regulations on chemical wastes.
Assessment Methodology and Criteria

6.9 The criteria for assessing waste management implications are outlined in Annex 7 of the EIAO-TM. The methods for assessing potential waste management impacts during the construction and operation phases of the Project follow those presented in Annex 15 of the EIAO-TM and include the following:

- estimation of the types and quantities of the wastes generated;
- assessment of potential impacts from the management of solid waste with respect to potential hazards, air and odour emissions, noise and wastewater discharges; and
- impacts on the capacity of waste collection, transfer and disposal facilities.

6.10 It should be noted that at this preliminary design stage, only preliminary information of the proposed construction activities is available from the heliport operator. Hence, the types of wastes likely to be generated during the construction stage of the Project would be examined in greater detail in the Waste Management Plan to be prepared by the Contractor.

Identification and Evaluation of Environmental Impacts

Construction Phase

6.11 The proposed heliport expansion would include a helipad on the roof-top of the eastern side of the Inner Pier of the MFT. Site formation or dredging works would not be required for the Project.

6.12 The aluminium design for the proposed new landing/take-off pad would be built on the existing rooftop of the MFT Inner Pier. Demolition of existing structures would not be required.

6.13 The existing helicopter operators in Hong Kong have been consulted and it is anticipated that the waste arisings would not be significant during the construction activities for the proposed Project. Minimal waste arisings would be anticipated from the possible provision of segregation facilities and measures to accommodate domestic helicopter services and the possible expansion of the existing helipad. Identified waste arisings during the construction phase would likely include general refuse from the workforce and chemical waste from the maintenance of construction plant, and potential environmental impacts associated with these waste arisings are described in greater detail below.

General Refuse

6.14 Throughout construction, the workforce would generate refuse comprising food scraps, waste paper, empty containers, etc. Release of general refuse into marine waters should not be permitted, as introduction of these wastes is likely to have detrimental effects on water quality in the area. Rapid and effective collection of site wastes would be required to prevent waste materials being blown around by wind, flushed or leached into the marine environment, and odour nuisance. The work sites may also attract pests and vermin if the waste storage area is not well maintained and cleaned regularly. Disposal of refuse at sites other than approved waste transfer or disposal facilities can also result in similar impacts. With the implementation of good waste management practices at the site, adverse environmental impacts would not be expected to arise from the storage, handling and transportation of workforce wastes.

Chemical Waste

6.15 The maintenance and servicing of construction plant and equipment may possibly generate some chemical wastes, for instance, cleaning fluids, solvents, lubrication oil and fuel. It is not possible to quantify the amount of chemical waste that will arise from the construction activities, since it will be dependent on the Contractor’s on-site maintenance requirements and the amount of plant utilised. The amount of chemical waste expected to be generated will be quantified in the site Waste Management Plan to be prepared by the Contractor.
6.16 Chemical wastes arising during the construction phase may pose environmental, health and safety hazards if not stored and disposed of in an appropriate manner as stipulated in the Waste Disposal (Chemical Waste) (General) Regulations. The potential hazards include:

- Toxic effects to workers
- Adverse impacts on water quality from spills
- Fire hazards.

6.17 Materials classified as chemical wastes will require special handling and storage arrangements before removal for appropriate treatment at the Chemical Waste Treatment Facility at Tsing Yi. Wherever possible opportunities should be taken to reuse and recycle materials. Mitigation and control requirements for chemical wastes are detailed in Sections 6.22 - 6.23. Provided that the handling, storage and disposal of chemical wastes are in accordance with these requirements, adverse environmental impacts are not expected to result.

**Operation Phase**

6.18 According to the heliport operators experience in Macau, waste arisings from maintenance activities would not be anticipated.

**Mitigation Measures**

6.19 With the limited quantities of construction waste arisings likely to result from the minor land-based construction works for the Project, it is not anticipated that adverse waste management related impacts would arise. Nevertheless, good site practices are recommended during the construction phase to minimize the potential for environmental nuisance.

**Good Site Practices**

6.20 Recommendations for good site practices during the construction activities include:

- nomination of an approved personnel, such as a site manager, to be responsible for the implementation of good site practices, arrangements for collection and effective disposal to an appropriate facility, of all wastes generated at the site;
- training of site personnel in site cleanliness, appropriate waste management procedures and concepts of waste reduction, reuse and recycling;
- provision of sufficient waste disposal points and regular collection for disposal;
- appropriate measures to minimise windblown litter and dust during transportation of waste by either covering trucks or by transporting wastes in enclosed containers;
- regular cleaning and maintenance programme for drainage systems, sumps and oil interceptors;
- a waste management plan (WMP) should be prepared in accordance with ETWB TCW No. 15/2003 and submitted to the Engineer for approval.

**General Refuse**

6.21 General refuse should be stored in enclosed bins or compaction units. A reputable waste collector should be employed by the contractor to remove general refuse from the site. An enclosed and covered area is preferred to reduce the occurrence of 'wind blown' light material.

**Chemical Wastes**

6.22 If chemical wastes are produced at the construction site, the Contractor would be required to register with the EPD as a Chemical Waste Producer and to follow the guidelines stated in the Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes. The Waste Disposal
Disposal of chemical wastes should be carried out in compliance with the Waste Disposal Ordinance. The Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes published under the Waste Disposal Ordinance details the requirements to deal with chemical wastes. General requirements are given as follows:

- Suitable containers should be used to hold the chemical wastes to avoid leakage or spillage during storage, handling and transport.

- Chemical waste containers should be suitably labelled, to notify and warn the personnel who are handling the wastes, to avoid accidents.

- Storage area should be selected at a safe location on site and adequate space should be allocated to the storage area.

Conclusion

This assessment of waste management implications indicated that waste arisings would not be anticipated during maintenance activities of the expanded heliport facilities. Construction waste arisings have been examined, based on the available information from the heliport operator. Significant waste arisings would not be expected since there would not be any site formation works or demolition of existing structures for the expansion works.

Waste management will be the contractor’s responsibility to ensure that all wastes produced during the construction of the Project are handled, stored and disposed of in accordance with good waste management practices and EPD’s regulations and requirements. Details of the waste arisings and management procedures, based on the Contractor’s proposed working method, will be described in the Waste Management Plan to be prepared by the Contractor at the commencement of the construction phase.