

## 1 INTRODUCTION

### 1.1 Background

- 1.1.1 In 2002, the Water Supplies Department (WSD) completed a Preliminary Project Feasibility Study (PPFS) following the recommendation made in the conceptual planning report for the in-situ reprovisioning of Sha Tin Water Treatment Works (WTW). In conjunction with the PPFS taking environmental consideration, a Preliminary Environmental Review (PER) was conducted to identify whether the proposed works constituted a Designated Project (DP) and therefore would trigger the requirement for a statutory Environmental Impact Assessment (EIA).
- 1.1.2 In 2004, WSD completed the investigation study entitled the In-situ Reprovisioning of Sha Tin WTW which involved the development of a preliminary design including an Environmental Review (ER) to identify the environmental issues and recommend the mitigation measures required.
- 1.1.3 AECOM Asia Company Limited (AECOM) was commissioned by WSD on 23 August 2010 under Agreement No. CE13/2009 (WS) to carry out detailed design and construction for the in-situ reprovisioning of Sha Tin WTW - South Works (hereinafter referred as the Project). This Project is to reprovision the South Works of the existing Sha Tin WTW with a treatment process that can meet the latest treated water quality standards and enable a more reliable water supply to the territory.
- 1.1.4 After consultation with the Environmental Protection Department (EPD), this Project was confirmed as a DP and that a full EIA study will be required statutorily under the EIA Ordinance (EIAO).

### 1.2 Designated Project under the EIAO

- 1.2.1 The Project is classified as a DP under item E.2 in Schedule 2 [Part I] of the EIAO. A detailed EIA for approval by the Director of Environmental Protection (DEP) is therefore required. The Schedule 2 DP covered by this report is listed in **Table 1.1** below.

**Table 1.1 Schedule 2 Designated Project in this EIA Study**

Designated Project	EIAO Reference	Remarks
Water Extraction and Water Supply	E.2, Part I, Schedule 2	Water treatment works with a capacity of more than 100,000m <sup>3</sup> per day

- 1.2.2 A Project Profile was compiled and an Application for an EIA Study Brief made on 25 January 2011 under the EIAO. The EIA Study Brief is registered as "In-situ Reprovisioning of Sha Tin Water Treatment Works – South Works – Design and Construction – EIA Study" (Reference No. ESB-220/2011) and was issued on 9 March 2011.

### 1.3 Objectives of the EIA Study

- 1.3.1 The principal objective of this EIA Study is to provide information on the nature and extent of environmental impacts arising from demolition, construction and operation of the Project. All related activities taking place concurrently should also be assessed to investigate the potential for cumulative impacts. This information will contribute to decisions by the DEP on whether or not:
- the acceptability of adverse environmental consequences that are likely to arise as a result of the Project and associated works;
  - the conditions and requirements for the design, demolition, construction and operation of the Project and associated works, including taking into account their interconnection, co-existence and development programmes, to mitigate against adverse environmental consequences; and
  - the acceptability of residual impacts after the proposed mitigation measures are implemented.
- 1.3.2 This EIA study has been undertaken in accordance with the requirements of the EIA study brief and the requirements specified under the Technical Memorandum on Environmental Impact Assessment Process (EIAO-TM). Therefore this EIA Report undertakes to:

- describe the Project and associated works together with the requirements, implementation programme and any phasing programme for carrying out the Project;
- identify and describe elements of the community and environment likely to be affected by the Project and associated works and/or likely to cause adverse impacts upon the Project and associated works, including both the natural and man-made environment and the associated environmental constraints;
- provide information on the consideration of alternatives (such as location/siting, scale, size, layout, configuration, water treatment design options, sequence and method of construction, and programme for the Project) with a view to avoiding or minimizing the potential environmental impacts to (a) the environmentally sensitive areas and other sensitive uses, in particular Hin Keng Estate, users of proposed Shatin to Central Link, and (b) the Project itself, in particular, the risk of life due to existence of the Potentially Hazardous Installations (PHIs) within the Project site;
- compare the environmental benefits and disbenefits of each of the alternative options and to provide reasons for selecting the preferred option(s) by means of describing the part environmental factors played in the selection;
- identify and assess the potential risk to human life due to the construction works impact on the operation of the existing PHI (Chlorination House), the 400kV overhead power line and other notifiable gas installations (NGIs), e.g. Beacon Hill North Offtake Station present or in the vicinity of Project site and to propose measures to mitigate these impacts;
- identify and quantify emission sources, including noise emission, sewage and wastewater emission, and waste generation, and to determine the significance of impacts on sensitive receivers and potential affected uses;
- identify and quantify any potential loss or damage and other potential impacts to ecological resources, flora, fauna and natural habitats and to propose measures to mitigate these impacts;
- identify and quantify the potential risks due to the potential land contamination caused by the existing facilities in the Project site and to propose measures to mitigate these impacts;
- identify any potential landscape and visual impacts and to propose measures to mitigate these impacts;
- identify any negative impacts on heritage resources and to propose measures to mitigate these impacts;
- propose measures to avoid or the provision of infrastructure or mitigation measures to minimize risk, pollution, environmental disturbance and nuisance during demolition, construction and operation of the Project and associated works;
- investigate the feasibility, practicability, effectiveness and implications of the proposed mitigation measures;
- identify, predict and evaluate the residual environmental impacts (i.e. after practicable mitigation) and the cumulative effects expected to arise during the demolition, construction and operation of the Project and associated works, taking into account the relevant programmes on reprovisioning of the affected facilities, in relation to the sensitive receivers and potentially affected uses;
- identify, assess and specify methods, measures and standards to be included in the detailed design, demolition, construction and operation of the Project and associated works which are necessary to mitigate these environmental impacts and cumulative effects and reduce them to acceptable levels;
- investigate the extent of the secondary environmental impacts that may arise from the proposed mitigation measures and to identify constraints associated with the mitigation measures

recommended in the EIA study, as well as the provision of any necessary modification;

- design and specify environmental monitoring and audit requirements to check the effective implementation of the recommended environmental protection and pollution control measures; and
- identify potential individual project(s) and associated works of the Project that fall under Schedule 2 of the EIAO; ascertain whether the findings of this EIA study have adequately addressed the environmental impacts of the identified EIAO Schedule 2 designated projects; and where necessary, identify the outstanding issues that need to be addressed in any further detailed EIA study.

#### **1.4 Structure of the EIA Report**

1.4.1 After this introductory section, the remaining of this EIA Report is set out as follows:

- Section 2 provides information on the project background, objectives and need, benefits, location, the scope of development, the EIA study area and the works programme.
- Section 3 presents consideration of alternatives including the “without the Project” scenario, the “with the Project” scenario as well as consideration of project design alternatives including related details of construction and operation of the project.
- Sections 4 to 12, inclusive, contain the assessments of potential impacts associated with the construction and operation of the proposed project, and the likely effects on air quality, noise, water quality, waste management implications, terrestrial ecology, landscape and visual, and cultural heritage, as well as a consideration of land contamination from previous/ existing land uses, and the degree of hazards and risks presented by Sha Tin WTW designated as Potential Hazardous Installations (PHIs). In each technical section, necessary mitigation measures are recommended to ensure compliance with the established standards and other criteria. The environmental monitoring and audit (EM&A) requirements are also presented with further details of the EM&A scope, approach and requirements to be found in the accompanying stand-alone EM&A manual. The findings of EIA are summarized and concluded at the end of each relevant technical section.
- Section 13 includes a comprehensive Implementation Schedule summarising the environmental mitigation measures.
- Section 14 presents the conclusion.

1.4.2 Various materials and background data are contained in Appendices to the report.

**~ End of Section 1 ~**